HARP Sci-Fi™

#3500

HARP Sci-Fi™

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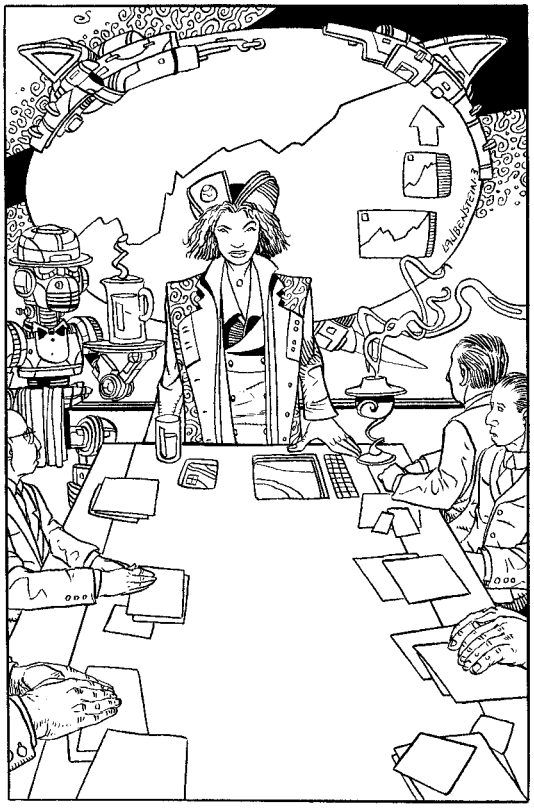


Welcome to **HARP Sci-Fi** (**HARP SF**)! This book is a complete science-fiction role playing game. **HARP SF** is all you need whether your game focuses on events on a single inhabited world in the near future or is a galaxy-spanning epic set millennia hence in the far future.

HARP SF retains all the simplicity and flexibility of the original HARP fantasy game but expands its reach to a whole new universe of infinite possibilities.

What is Role Playing?

If you're not familiar with role playing, the idea is unbelievably simple: You take on the persona of a character and interact with other "player characters" (or PCs), also portrayed by real people. The PCs undertake missions, where they acquire experience to improve their capabilities, and may additionally gain wealth, knowledge or fame. The story is directed by one player who is called the "System Operator" (or SysOp). The SysOp describes the environment, handles any alien creatures or other menaces that threaten the PCs, and referees the rules that determine how various events turn out.

Role playing is a form of improvisational storytelling with every player helping to tell the story. It is like acting in a movie that has no script – everyone at the table is making up the scenes and the dialogue as the drama unfolds and there is an unlimited budget for special effects! It is **not** a sequence of events that inevitably and inexorably lead to some predefined end. Rather every moment of the game is creating a new future history, shaped by the actions of the players. Unlike a movie where the end credits must roll and a sequel might be years away, the next installment of your story will happen at your next gaming session.

What is a Character?

When you portray a player character, you are in control. You describe what your character does, with dice rolls helping to determine the outcome of combat, skills or psionic abilities. Your character has statistics (or stats) - these measure the various abilities that define a person. A character's Quickness statistic will determine his speed and reaction time, while a high Insight will make him highly intuitive. You will need to select a species for your character such as human, alien or sentient robot, and choose a culture such as cosmopolitan homeworlder, frontier colonial, or even spaceborn Belter.

Your character will also have a number of skills and talents to help him, her or it (!) succeed and survive in a dangerous universe. Selecting a profession, such as Adept, Tech or Soldier will reflect the education and training your character received prior to starting the game. Each has their own focus and unique strengths, allowing a significant amount of diversity in an adventuring group.

All of these items are recorded on a character sheet. You can download long and short versions of the **HARP SF** character sheet for free from www.HARPHQ.com.

What is a System Operator?

The System Operator (or SysOp) is the "director" of the game, much like the director of a movie; as such, a System Operator should be comfortable being the center of attention. The System Operator knows all of the plots and twists that exist in the universe of the game and, from these plot lines, creates a flexible story that can be adjusted based on player character actions. In the game session, the System Operator portrays all of the non-player characters (or NPCs) that the players might encounter on their travels. The System Operator must know the direction of the story, and is responsible for officiating and adjudicating whenever the system's rules come into play. Players, on the other hand, only have to worry about what their own characters do. Being in charge of the game and a universe are the challenges faced by every SysOp, but it is all part of the fun of being the SysOp.

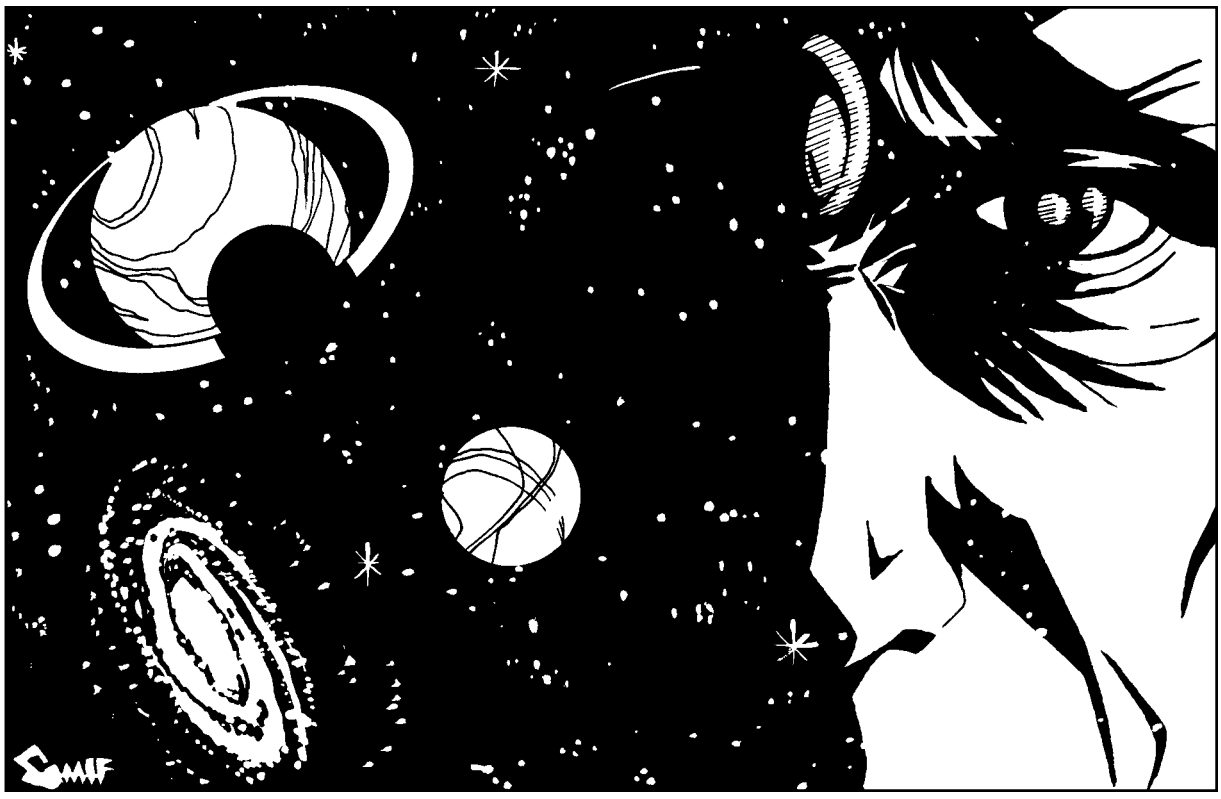
A series of connected adventures is usually called a campaign. It can be set in a universe of the SysOp's own devising, adapted from science-fiction novels or movies, or a pre-published setting such as Tintamar, Iron Crown Enterprises' very own universe designed especially for **HARP SF**, which is described in the next chapter and elsewhere in this book.

Designer Notes

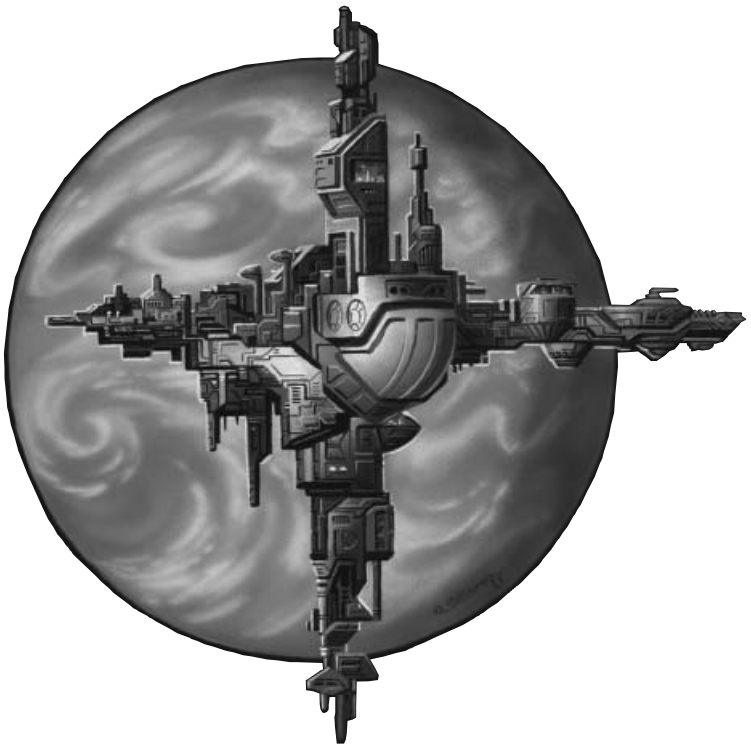
I would like to thank Alison Mitchell for her efforts in locating obscure science-fiction novels and assisting my research.

This book has benefited greatly from the comments and critiques of my elite playtesters, most especially David Bate, Quinton Carroll, Jonathan Dale, Andrew Davies, Matt Fitzgerald, Keith Grainge, Jesse Hall, Monte Iafrate, Chris Jowett, Brent Knorr, John Lees, Dave Prince, Andrew Ridgway, Aaron Smalley, Marc Staubitz, and Stephen Watts. Thanks also to Dave Cheever for his excellent starship deck plans, to the community on the ICE forums for planet names, and to everyone who participated in the public beta playtesting and contributed feedback.

And finally, I would like to humbly thank just a few of the world's finest science fiction writers for entertaining and inspiring me – Poul Anderson, Isaac Asimov, Marion Zimmer Bradley, Sir Arthur C. Clarke, Gordon R. Dickson, Alan Dean Foster, Simon R. Green, Peter F. Hamilton, Robert A. Heinlein, Frank Herbert, Larry Niven, Jerry Pournelle, E.E. "Doc" Smith, Brian Stableford, Jack Vance, and David Weber.



The Tintamar Universe



Every RPG needs a setting to provide meaning and depth to the gaming experience. Tintamar is a ready-made setting for SysOps who don't have time to build their own cosmos.

Tintamar is our universe as it might be in the twenty-fifth century. It is a future of faster-than-light travel, interstellar exploration and colonization, starfaring alien races, genetically enhanced humans, cyborgs, artificial intelligences, robots, advanced technology, and exotic psionic abilities.

A Brief History of Tintamar

A Human Perspective

Historians describe the early twenty-first century as both a time of great hope and of great fear. Fear because incidents of large-scale terrorism and the ironically named Pacification Wars imprinted themselves into the nightmares of several generations. Hope because the advent of nuclear fusion solved the energy crisis and opened mankind's road to the planets.

By the end of the twenty-first century, exploration had given way to colonization with thriving settlements on the Moon, domed cities on Mars, outposts in the Asteroid Belt, and space stations around Venus. Deliberate cometary impacts coupled with nanotechnology and genetically engineered flora were beginning to terraform Mars, while a much slower process had been initiated in the thick Venusian atmosphere.

As the twenty-second century dawned, the first space elevator was deployed on Earth's equator. Thirty years later, the six space elevators formed the spokes of a giant wheel constructed in Earth's geosynchronous orbit – this structure was Ring City, eventually home to a billion human beings and the perimeter of Earth's planetary jurisdiction. The space elevator gave Earth's teeming billions cheap access to space, initiating the First Exodus as scores of asteroids were modified into habitable bubble-worlds.

An increase in population from tens of thousands to millions led inexorably (and mostly peacefully) to the foundation of the independent interplanetary governments: the Lunar Alliance, the Martian Republic, the Protectorate of Venus, and the Belter League. Ring City, the underwater city-states of Atlantaea and Pacifica, and the older nation-states elected the governing Parliament of Earth.

Fundamental breakthroughs in unifying physical forces led to the magneto-gravitic drive (a reactionless drive) and

its spinoff technologies – antigravity, artificial gravity, and shield technology. Space technology, transportation, and settlement were revolutionized again. As the twenty-second century drew to a close, magneto-gravitic technologies permitted permanent settlements on the Jovian moons within the deadly radiation belts surrounding Jupiter and the construction of floating enclosed cities among the clouds of Jupiter. The Jovian Confederacy joined the community of solar nations. Explorers discovered strange life forms in Jupiter's atmosphere – their sentience, if any, remains a mystery to this day. The terraforming of Mars was largely completed.

In 2204, experiments in the stable Lagrange points of Earth orbit led to the discovery of a strange effect – when the magneto-gravitic drive was operated in a certain mode, vessels sometimes disappeared. A year later, the physicists realized that the mode was unsafe in those Lagrange points. In 2206, the same experiment conducted in Jupiter's Trojan points successfully demonstrated faster-than-light travel between the T4 and T5 regions. By 2210, scientific expeditions had been sent to every star within twenty light-years of Sol.

In 2220, the existing governments of Sol System signed the Declaration of Man, forming the Terran Federation. Member worlds and polities were to maintain autonomy within their own borders, but to participate in a binding pact of mutual assistance and united defense and acknowledge Federation jurisdiction outside their borders. All colonizing expeditions were required to adhere to the Declaration. Membership in the Federation was compulsory. Some colonial worlds were later permitted to undergo Interdiction, where they renounced hyperdrive technology and active membership in the Federation in favor of complete self-rule.

Thus humanity exploded into interstellar space in the so-called Second Exodus, founding over a hundred colonies scattered throughout a rough sphere some fifty light-years in radius in the first wave. Some colony expeditions disappeared without trace. Perhaps their ships failed or unknown aliens destroyed them. Perhaps their leaders desired to be truly free of Earth and so set course for Earth-like suns and new homes much deeper in the galaxy. No one knows.

Mankind discovered the ruins of alien civilizations on a number of planets. Some had been spacefaring, none appeared to have mastered the Lagrange Drive. Sobered by the evidence that intelligent cultures and species were not eternal, scouts quested ever outward, seeking new worlds, salvaging exotic technology from its long-dead masters, and hoping to find kindred spirits.

The prolonged terraforming of Venus finally allowed the Protectorate to begin full-scale settlement of the surface from 2432. Venus was habitable, but barely with its interminably long days and nights. The Protectorate continue to undertake research into extracting energy from quantum fluctuations – their scientists hope that this will one day provide them with the power to spin up the planet transforming it into a second Eden.

In 2451, Federation scouts discovered a large alien artifact orbiting the derelict planet of Methuselah. It was determined to be a transportation device, capable of sending a starship across space at an effective speed of one light-year per minute (rather than the one light-year per day of the Lagrange Drive). As the news swept across Federation space, new cults and conspiracy theorists flourished throughout the worlds, particularly on Old Earth, speculating on the nature of the Builders and their portal device.

Three years later, first unmanned probes and then manned vessels were sent through the portal. They exited another portal (later named Nexus) some four hundred light-years from Sol, and quickly learned that the sector was home to several alien starfaring civilizations. Mistakes and misunderstandings led to some minor skirmishes with these races; war was fortunately averted. Although the aliens had charted the location of half a dozen portals, they had been unsuccessful in ascertaining their method of activation – peculiarly coded gravity waves.

The first human encounter with the warlike Silth, an expansionist reptilian race, took place in 2458. Thereafter Silth raiders harassed Federation vessels much as they had previously attacked the ships of other species. Federation Starsoldiers nicknamed them the "Handbags" with due contempt for the Silth's underhand tactics.

Brilliant theorizing and systematic searching located eight further portals within a hundred light-years of Sol. One of these, much to the embarrassment of the Belter League, was found in Sol's Asteroid Belt in 2464. This was twice the size of the other portals. The significance of this size difference was not realized immediately. A space station, Tintamar, was constructed near the portal. Tintamar became the natural terminus for mercantile, diplomatic, and exploratory missions heading into or returning from the Nexus sector.

A human merchanter fleeing from a squadron of Silth warships made transit through the Nexus portal to Sol in 2465. The Silth commander was so close that five of his vessels managed to piggy-back the merchanter's path, erupting into Sol System. The merchanter was blown to its component atoms on arrival. The Federation watchship, *Resolution*, broadcast a system-wide distress signal and engaged the Silth valiantly before it, too, was destroyed. As their transit had been fortuitous rather than deliberate, the Silth headed too late towards the jump point of Jupiter's Trailing Trojans. The defense fleets of the Belter League and the Martian Republic intercepted and, at some cost, eliminated the Silth threat.

Political pressure from the Belters and the Martians (genuinely concerned at the havoc war could wreak on their fragile worlds) persuaded the Federation as a whole to adopt a more aggressive stance against the Silth. With the assistance of alien allies, the Terran Federation waged a two-year campaign in the Nexus sector, hunting down the Silth raiders. A truce between the Silth and the Federation was negotiated by proxy in 2468.

The significance of the larger size of the Sol portal also became clear in 2468. The Sol portal was a "greater portal" capable of transporting ships seemingly anywhere in the galaxy. The megacorporations demanded and gained the right to send volunteer expeditions through the Sol portal; the Belters, Martians, and other solar colonies insisted on a very substantial permanent military guard on the portal as no one knew what might come visiting from elsewhere. In recognition of their assistance in the Silth War, mankind's alien allies were permitted to make some modest use of the portal for exploration.

The year is now 2473.

An Alien Perspective

Approximately five thousand human years ago, the first Runcori seedships arrived in the region of space that would later become known as the Nexus Sector. Having escaped the destruction of their homeworlds, the Runcori survivors began the laborious reconstruction of their civilization. Planets were deemed too fragile and too static to serve as new homes for the species, so the Runcori constructed bubble worlds and huge space habitats from suitable asteroids. The Flowering, as Runcori historians styled the era, lasted some three thousand years.

While on Earth, barbarians sacked the city of Rome, the Gorsivans took their first faltering flights to the stars. Gorsivan explorers made peaceful contact with the Runcori and intermittent trade followed. Most Gorsivans had little appetite for interstellar colonization, although successive ruling Wingmasters found it expedient to exile malcontents and defeated factionalists to a score of highly scattered and under-supported colony planets.

When a Gorsivan expedition entered the Tamazek System, they discovered Krakuren space engineers building their first permanent orbital habitats. Krakuren scientists had already located a Builder portal in their system, but had been unable to unlock its secrets. Thus first contact with the Gorsivans was rather anticlimactic – as one Krakuren commentator opined, "We were expecting someone more advanced". Nevertheless their civilization benefited greatly from trade with both the Gorsivans and the Runcori.

As Christopher Columbus was setting sail for the "New World", the first Madji clans fared outward from their home, Ji'mad'ji, in a wave of exploration and colonization that would see Madji settlements in more than fifty star systems in less than five human centuries. The light-years took their toll on the famed Madji clan loyalty as the daughter houses of the colonies came to resent the policies of the homeworld clans. Tensions escalated. Ji'mal'ro declared itself independent and other worlds followed suit. A savage war between Ji'mad'ji and its colonies erupted and lasted for several generations. When the dust had settled, the homeworld fleets were no more and civilization on Ji'mad'ji itself was teetering on the brink of a new dark age. The secessionists were little better off – almost all had suffered severe damage to their infrastructure and substantial population losses; some had collapsed into near savagery or been virtually destroyed. The sundered worlds were forced onto their own resources to survive or perish.

Runcori traders entered the Silth home system at a time of crisis. Saroulsis was suffering from overpopulation and dwindling resources, still governed by feudal families whose unruly coalitions and shifting alliances created a perilous balance of power. The Runcori were captured and the technological secrets of magneto-gravitics and faster-than-light travel wrested from them. The Silth erupted into the Nexus Sector, exploiting and colonizing star system after star system, fuelled by a belief in their own superiority and the desires of the Great Families to rule their own domains within the growing Imperium.

While mankind was celebrating the second millennium, and the hegemony of Ji'mad'ji was in its death throes, Silth war fleets invaded three Gorsivan occupied star systems (the Larani Trinax) on the periphery of the Imperium. Silth raiding squadrons attacked and destroyed Runcori worldlets throughout the Nexus Sector. Spurred into action, the Wingmasters of Siva built and dispatched their own fleets to protect the remaining Gorsivan worlds. A Silth incursion into the Tamazek system was quickly rebuffed but served to bring the Krakuren into the war. A grand alliance of Runcori, Gorsivans, and Krakuren was formed. Its combined might held the Silth at bay and very slowly began to reverse the enemy advance. A century later, the war had become a weary stalemate.

The failure of the Great War of Conquest (as the Silth styled it) encouraged disaffection among those Great Families whose dominions were far from the front. Rivalries that had existed prior to the Imperium's founding flared up into rebellions and the Imperium was engulfed in a civil war as its provinces fragmented into distinct realms, the Dominions. The Wingmasters of Siva briefly reconquered the Larani Trinax and evacuated the surviving Gorsivans to safety elsewhere.

The Cerans were the last of the major races of the Nexus sector to achieve starflight, a mere two human centuries ago. Unfortunately their explorations impinged on territory claimed by one of the Silth Dominions, leading to a brief, but inconclusive, war. The continuing in-fighting among

Timeline		
Date	**Human Events**	**Alien Events**
c.2500 BCE		Runcori seedships arrive in Nexus Sector
c.2500 BCE – 500 CE		The "Flowering" of new Runcori cultures in the Nexus Sector
409		First faster-than-light travel by Gorsivans
496		First Contact between Gorsivans and Runcori
803		First Contact between Gorsivans and Krakuren
1492		First Madji FTL voyages
1500-1900		Madji main wave of colonization
1814		First Contact: Runcori with Silth
1960		Ji' mal' ro declares independence from Ji' mad' ji homeworld clans.
1984		Madji Civil War begins
2000		Great War of Conquest begins: Silth Invasion of the Larani Trinax
2002		Silth war fleets attack Runcori worldlets
2007		Silth incursion of the Tamazek System
2009		Formation of the Alliance of Runcori, Gorsivans and Krakuren
2025	Armstrong City founded on Luna	
2037	Lowell City founded on Mars	
2044	First asteroidal settlements	
2047		Sack of Ji' mal' ro
2052	Construction of Pacifica completed	
2053		Sack of Ji' mad' ji and end of Madji Civil War.
2055		Many Madji colonies and Ji' mad' j begin descent into new dark age.
2057	Construction of Atlantaea finished	
2080		Madji interstellar travel ceases
2101	First space elevator built	
2105	First Human Exodus begins	
2106		Great War of Conquest effectively over
2113		Silth Civil War erupts. Fragmentation of the Silth Imperium into Dominions begins
2118		Wingmasters of Siva reconquer the Larani Trinax
2131	Ring City completed	
2139	Magneto-gravitic drive invented	
2143	Martian Republic becomes independent	
2148	Lunar Alliance declares independence	

Date	Human Events	Alien Events
2152	Parliament of Earth becomes first planetary government	
2156	Formation of Belter League	
2160	Protectorate of Venus created	
2175	Settlements in Jovian moon system	
2180	First Human Exodus ends	
2184	Floating city of Zeus in Jupiter' s upper atmosphere built	
2190	Martian terraforming complete	
2199	Jovian Confederacy founded	
2204	First Lagrange experiments	
2206	First successful human faster-than-light travel	
2220	Declaration of Man and creation of Terran Federation	
2221	Second Human Exodus begins	
2235		Cerans make first FTL voyages
2262-2266		Ceran-Silth War
2318		Alliance governments build settlements in Nexus system
2400	End of Second Human Exodus	Return of Ji' mad' ji clans to space
2405		End of the Silth Civil War with new First Family imposing peace upon the Dominions.
2432	Terraforming of Venus officially completed	
2451	Discovery of portal orbiting Methuselah	
2454	First portal transit by human ships. First Contact between humans and aliens	
2458	First Contact between Humans and the Silth	
2464	Discovery of Sol portal.	
2465	Tintamar opens for business. The Silth Incursion into Sol System	
2467	First Human-Silth War begins.	
2468	Relief of 61 Virginis and pivotal battle of Thousand Points of Light. End of Human-Silth War.	
2473	Present Day	

the Dominions ensured Ceran freedom and gave the Cerans an opportunity to befriend the allied civilizations and become part of the greater Nexus community.

A number of Builder portals had been located in the sector. One of these was a greater portal in a system whose only other value was its convenient location relative to Tamazek, Siva, and the principal Runcori habitats. The allied races constructed bases near the portal, ostensibly to research the artifact and covertly to coordinate monitoring of the Silth Dominions.

By 2400 (of the human calendar), a new era had dawned for the Madji. The isolation of Ji'mad'ji ended as its clans once more went to the stars, seeking out their scattered cousins and renewing contact with the other species.

The return of the Madji was welcomed; not so, the seeming resolution of the Silth civil war. A new First Family had ascended the throne of Saroulsis and, through persuasion and coercion, imposed a fragile peace upon the Dominions. Once again, the Silth turned their attention outwards.

Then the humans arrived through the Nexus portal and nothing was ever the same again.

The Cosmography of Tintamar

Humans and aliens have explored only two relatively small portions of the Milky Way Galaxy in any detail: the Human Sector and the Nexus Sector. The Human Sector is a very rough sphere centered on Sol and extending outwards up to ninety light-years currently. The Nexus Sector is a volume of space some hundred and fifty light-years in radius centered on the Nexus system and encompassing the home worlds and colonies of all the other known species. The Nexus system is 400 light-years from Sol.

Sol System

Sol System, or as it was once known the Solar System, is still the heart of human civilization.

The Protectorate of Venus

Location: Venus (Sol II)

Diameter: 12,103km

Gravity: 0.9 g

Distance from sun: 0.72 au

Year: 0.62 Earth years (224.7 Earth days)

Rotation period: 243 Earth days

Atmosphere: Nitrogen/oxygen (after terraforming)

Hydrosphere: 30% shallow seas

Climate: Warm Temperate/Tropical (day) to Cool Temperate (night)

Species: Human

Culture: Scientific and Cosmopolitan

Language: Anglic

Population: 18 million

Government: Participatory democracy

The terraforming of Venus is a triumph of human science and determination, nay stubbornness. There is much still to be done before Venus is once again a true twin of Earth, but a full generation of Venusians have now been born and matured to adulthood on the planet. The Protectorate's orbital habitats that previously housed the population are now research stations devoted to developing new life forms capable of surviving the long Venusian days and nights. Venusian cities and towns are small domed affairs, which allow their citizens to experience days and nights of standard durations. Most citizens have at least two homes in settlements on opposite sides of the world and migrate each half-year to remain in the daylight. The Protectorate has a directly elected Protector and a legislative Assembly – however, all decisions must be ratified or vetoed by plebiscite (conducted electronically). Venusians are expected to be politically aware.

Earth

Location: Earth (Sol III)

Diameter: 12,756km

Gravity: 1 g

Distance from sun: 1 au

Year: 1 Earth years (365.24 Earth days)

Rotation period: 24 hours

Atmosphere: Nitrogen/oxygen

Hydrosphere: 70% oceans

Climate: Temperate Mix

Species: Human

Culture: Cosmopolitan

Language: Variable (Anglic spoken as second language)

Population: 10 billion

Government: Representative democracy

Technological progress on multiple fronts, the safety valves of the First and Second Exodus, environmental reconstruction, and a determined effort to improve the common good have ensured a very high standard of living for most Earthmen.

Aquaculture provided the impetus to establishing fully self-contained underwater cities in the oceans. Atlantaea, Pacifica, and Lemuria are the capitols of the marine arcologies scattered throughout the Atlantic, Pacific, and Indian Oceans. Many of their residents have been genetically engineered for amphibious lifestyles.

From most latitudes on Earth, anyone gazing into the sky can see humanity's greatest artificial structure, Ring City. This is a huge hollow torus (50 km tube radius) in geostationary orbit, which forms the space termini for the six space elevators. The development of artificial gravity has allowed the Ring City's environment to vary from zero gravity to normal Earth gravity – most segments are now held at a very comfortable 0.75g. Home to a billion human beings, Ring City is the location of the ruling Parliament of Earth, the executive body that eventually replaced the United Nations and the older nation-states.

The Lunar Alliance

Location: The Moon (Sol IIIA), also L4 and L5 settlements
Diameter: 3,475km
Gravity: 0.17 g (surface), up to 1g (within settlements)
Distance from sun: 1 au (384,400km from Earth)
Orbital period: 27.3 Earth days
Rotation period: Tidally locked
Atmosphere: None
Hydrosphere: None
Climate: Within lunar cities, temperate mix
Species: Human
Culture: Corporate and Cosmopolitan
Language: Variable (Anglic spoken as second language)
Population: 240 million
Government: Representative democracy

Earth's Moon was the location of the first permanent interplanetary colonies back in the twenty-first century. Lunar settlements remain collections of habitat domes, with much of their infrastructure buried deep within the lunar rock. The cities have populations ranging from half a million to three million residents. Residential areas have artificial gravity ranging from 0.5g to one standard Earth gravity; manufacturing and agricultural areas are left at natural lunar gravity. Lunatics (as the lunar citizenry are invariably nicknamed) tend to be taller and slimmer than their Earthly cousins and many have inherited genetic adaptations for low-gravity conditions. Lunatics are proud of their heritage, independence, and mélange of cultures; outsiders who describe Luna as a suburb of Earth will not endear themselves.

Owing to the original colonies being founded by various Earth nation-states, the Lunar Alliance is a union of distinct city-states. City councils continue to have jurisdiction over purely local matters; everything else is handled by the Alliance in the capitol of Armstrong City. The Lunar Alliance also governs a number of orbital habitats and corporate manufacturing platforms in the stable Lagrange 4 and Lagrange-5 regions of the Earth-Moon systems. The Federation maintains its vast Luna Base on the lunar Farside; this is the Sol System headquarters of the AstroNavy.

The Martian Republic

Location: Mars (Sol IV)
Diameter: 6,794km
Gravity: 0.38 g
Distance from sun: 1.52 au
Year: 1.88 Earth years (686.9 Earth days)
Rotation period: 24 hours 39 minutes
Atmosphere: Nitrogen/oxygen (after terraforming)
Hydrosphere: 20% shallow seas
Climate: Cool Temperate
Species: Human
Culture: Frontier and Corporate
Language: Anglic
Population: 352 million
Government: Representative democracy

The Martian Republic is the second oldest interplanetary colony and the first to declare independence from Earth. Despite being fully terraformed almost three centuries ago, Mars retains a dozen large domed settlements (the Closed Cities) where standard Earth gravity is maintained. Only a tenth of the Martian population dwells in these corporate-dominated communities; everyone else lives and works in the "Open Towns", where a Frontier mentality holds sway. Everything, including the "wilderness", on the Martian Frontier is a human creation. Attempts to furnish Mars with genetically engineered megafauna, reminiscent of those imagined in pulp sci-fi writings of the twentieth century, continue sporadically.

Tensions between the Martians of the Towns and the Marsmen of the Cities simmer below the surface. As Martians typically have slender, elongated builds and low-gravity adaptations, rather than the Earth-normal bodies of Marsmen, distinguishing between Martians and Marsmen is relatively easy. Night-time brawls between the two factions are part and parcel of life in the capital, Lowell City, which is an Open Town physically but heavily influenced by the Martian megacorps politically and economically. The megacorps acquired their political power by supporting Martian independence. They maintain their influence through economic power. They deem that opening the Closed Cities would be the thin edge of the wedge, leading eventually to the end of the privileges of the corporate elite.

The Belter League

Location: Asteroid Belt (hundreds of bubble-worlds plus domed colonies on Ceres, Pallas, Vesta, Juno, and Hygeia)

Gravity: Negligible, 0.5 – 1g in bubble-worlds

Distance from sun: 2-4 au (Ceres 2.77 au, Pallas 2.77au, Vesta 2.36 au, Juno 2.67 au, Hygeia 3.14 au)

Climate: Variable (normally cool or warm temperate in bubble-worlds)

Species: Human

Culture: Belter

Language: Varied (Anglic as second language)

Population: 52 million

Government: Representative democracy at League level, participatory democracy within states

The Asteroid Belt is home to some of the most rugged individualists in the Solar System. Most Belters live inside the „bubble worlds", cylindrical hollowed-out asteroids whose interiors have been terraformed. The majority of bubble worlds are spun for gravity; some newer designs (such as Tintamar) and the domed colonies on the largest asteroids rely on artificial gravity. Bubble world populations range from tens of thousands to several hundred thousand inhabitants. Each bubble world is essentially a micro-culture with its own unique traditions, customs, rules and identity. To outsiders, these „small-town" societies can seem insular and unwelcoming to strangers. Belters who find life in their home worldlet limiting tend to emigrate to the Jovian Confederacy or to the extrasolar asteroid settlements.

Each asteroid has to be self-governing due to the distances separating the inhabited planetoids. The Belter League provides a means by which the individual communities can exert collective influence on the other worlds of the Solar System. The League Congress strives for consensual decision-making and so is slow to take political stances on system-wide or Federation-wide issues, unless their interests are directly threatened.

The Jovian Confederacy

Location: Jupiter (Sol V), its moons Io, Europa, Callisto and Ganymede, orbital habitats in Trojan points

Diameter: 142,984km (Jupiter)

Gravity: 2.14 g (Jupiter itself), 1g (habitats)

Distance from sun: 5.2 au

Year: 11.9 Earth years

Rotation period: 9 hours 56 minutes (colonies keep Earth standard days)

Atmosphere: Hydrogen/helium (Jupiter itself)

Climate: Temperate mix (in habitats)

Species: Human

Culture: Belter and Corporate

Language: Anglic

Population: 27 million

Government: Representative democracy

The Jovian Confederacy was founded by a cartel of lesser megacorporations and Belter organizations, originally to mine Jupiter's atmosphere for hydrogen to supply the energy demands of the other worlds of the solar system. The invention of faster-than-light travel provided the impetus for their expansion into the Leading and Trailing Trojans. Portal travel has seen the pendulum of power return to the shielded cloud cities such as Olympus, Zeus and Caelestis, floating high in the Jovian atmosphere, far above its biosphere where the exotic hydrogen-breathing "gasbag" life-forms live. The Trojan settlements have shifted from supporting extrasolar commerce to emphasizing mining and manufacturing industries. They are also the home ports for two-thirds of the Confederacy defense fleet. The four Galilean moons (Io, Europa, Callisto and Ganymede) are sparsely populated and have relatively minor influence in the Confederacy. The Europan settlements are more scientific bases than true colonies, researching the life forms living within the ocean world beneath Europa's icy surface.

The founding corporations of the Confederacy have remained politically active. As nearly every citizen is either employed by or is a shareholder in at least one corporation, corporate influence is undeniable in every aspect of Confederacy society. Belter individualism and the failure of any single megacorp to become preeminent have ensured that the Confederacy has not become a true corporate fief like some extrasolar systems (such as El Dorado).

The Human Sector

Humanity has colonized more than a hundred star systems during the Second Exodus. The member states of Earth were instrumental in funding the colonization program and recruiting millions of potential settlers. Successive Earth governments have strongly encouraged "streaming" of potential colonists by ethnic, national, and cultural traditions in an attempt to preserve the diversity of human societies and offset the emerging monoculture that has since become dominant on Earth. This has also been reflected in the naming conventions for new worlds, where legendary Earthly or heavenly locations are bestowed on unspoiled virgin worlds (such as the Italian-settled Elysium, the Swahili-speaking Mbingu or the Commonwealth's New Albion), mythological names on worlds, which mirror some particular aspect of a deity or hero (such as Loki, Gilgamesh and Poseidon), and names commemorating historical personages of the pre-space eras (the American colonies of Washington, Franklin, and Lincoln, the British world Churchill, etc.)

SysOp's Note: Why These Worlds?

The ten worlds presented in this section have been chosen because taken together they allow human characters to hail from any of the possible cultural backgrounds and potential origins for genetically engineered characters.

The descriptions focus on the named world in each case. However, any other inhabited worlds in that solar system are briefly described. The largest world in the system and any portals are also identified and located so that SysOps know where starships can enter and exit hyperspace. All references to distances are measured relative to the system star. Where the star does not currently have a constellation name, a star catalog identifier is given for SysOps who wish to locate it in published star maps.

For reference, Elysium, Gilgamesh, Lincoln, Mbingu, New Albion, and Washington are predominantly Frontier in culture, Churchill is mixed Frontier/Aristocratic, and both Franklin and Loki are Frontier/Corporate.

Eden

Location: Henry Draper 207129 II (star type G2 V)
Diameter: 16,450km
Gravity: 0.95g
Distance from sun: 1 au
Satellites: Covenant (4,580km diameter)
Year: 1 Earth year
Rotation period: 25 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 42% oceans
Climate: Temperate Mix
Species: Human
Culture: Religious
Language: Various (Anglic as second language)
Population: 147 million
Government: Loose democratic confederation

Although Eden is a very beautiful world, its distance from Sol and unfortunate location of hyperspace entry/exit points in Leviathan's orbit (Henry Draper 207129 VI, 77.2au) made it unattractive to the Bureau of Colonization. An inter-faith alliance of fundamentalist Christian churches raised the funds to buy the settlement rights and ever since Eden has been a haven for believers. In general, Edenists eschew high technology and are disinterested in events elsewhere in the Federation. Eden has a single spaceport (Promised Landing) whose reputation for "sinful living" and decadence is a magnet for disaffected Edenists seeking a way off-planet.

There have been unconfirmed reports of illegal mining operations in the outer asteroid belt (36-42 au). No formal complaint has been made to Federation authorities; the Eden Conclave is more interested in maintaining harmony among the splinter sects and possesses no space-based forces of its own.

El Dorado

Location: Hipparcos 12110 I (K dwarf)
Diameter: 12,770km
Gravity: 1.19g
Distance from sun: 0.6 au
Satellites: 2 moons (Cortés 340km, Pizarro 89km)
Year: 0.46 Earth years
Rotation period: 21 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 62% ocean
Climate: Temperate Mix
Species: Human
Culture: Corporate
Language: Spanish
Population: 233 million
Government: Corporate State

The megacorporation, Interstellar Metals, funded the colonization of El Dorado, initially to ensure a long-term labor pool for its exploitation of the vast mineral resources of the El Doradan asteroid belts. Through bribery, economic manipulation, and careful cultivation of politicians, Interstellar Metals and its subsidiaries have become the government of the entire El Doradan system. The Governing Board answers to Interstellar Metals shareholders, who range from wealthy magnates to well-to-do managers and professionals, and constitute perhaps a tenth of El Dorado's population. Everyone else is politically disenfranchised.

Although there is some heavy industry and large urban centers on the planet, most of El Dorado remains an untouched wilderness. Even the substantial ranches and agricultural estates of the moneyed hidalgos have made little impact on the planet. El Dorado is sandwiched between two dense asteroid belts (an inner belt 0.2-0.4 au and the middle belt 0.8-1.0 au), which both contain dozens of mining and orbital manufacturing facilities. The hyperspatial points are located in the orbit of Isabella (a large gas giant Hipparcos 12110 II, 1.5 au). A third asteroid belt extends from 36au to 42au; this remains unexploited.

Freiland

Location: 20 Leonis Minoris II (G star)
Diameter: 14,010km
Gravity: 1.4g
Distance from sun: 1.1 au
Satellites: Paracelsus (15km diameter), Strauss (76km diameter), Freud (380km diameter)
Year: 1.15 Earth years
Rotation period: 23 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 54% oceans and seas
Climate: Cool Temperate Mix
Species: Human
Culture: Frontier
Language: German
Population: 153 million
Government: Representative democracy

Freiland is a pastoral world settled by colonists from the German-speaking nations of Europe. Most Freilanders live in small towns and villages; the continental capitols (Neu Berlin, Neu Bern and Neu Wien) have populations of several hundred thousand, while Sternhafen (the planetary capitol) is the only city with more than a million inhabitants. Freilander residences build low and spread outwards – outlying farms are mildly fortified to thwart attacks by indigenous predators. The cities lack the skyscrapers that dominate the skylines of more urbanized planets. Administratively, Freiland is divided into cantons by region and district for local issues. Planetary and system-wide issues are dealt with by the federal parliament.

Freilanders have received genetic engineering (High Gravity (Minor) Talent) to adapt the human frame to the 1.4g field of Freiland.

Amadeus (20 Leonis Minoris I, 0.8 au) is the largest gas giant in the system. Two of its moons (Goethe and Schiller) are planet-sized with "reducing" atmospheres; both are suitable for terraforming.

Khayyam

Location: Alaraph (Beta Virginis) III (star type F8 V)
Diameter: 10,540km
Gravity: 1.05g
Distance from sun: 1.5 au
Satellites: Shahadah (420km diameter), Salat (370km diameter), Zakat (280km diameter), Sawm (190km diameter), Hajj (150km diameter)
Year: 1.84 Earth years
Rotation period: 22 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 57% oceans and seas
Climate: Warm Temperate to Desert
Species: Human
Culture: Frontier, Religious and Aristocratic
Language: Arabic
Population: 94 million
Government: Constitutional monarchy (Sultanate)

The most hospitable regions of Khayyam are the coastal regions of the continents, particularly in the higher northern and southern latitudes, and human settlement has concentrated in these areas. The smaller hydrosphere relative to Earth coupled with greater solar radiation has turned the continental interiors into vast sandy deserts. Khayyam's inhabitants have received genetic adaptation

(Heat Resistance (Minor)) for the hot climate. Khayyam is ruled by a hereditary Sultan and an elected council. Provinces and districts are likewise governed by emirs and sheikhs in partnership with local assemblies.

The other inhabited world in this system is Saladin (Alaraph IV, 2.1 au). In terms of climate, Saladin is cooler and more varied. Politically Saladin is an absolute monarchy (the Caliphate) and its society is a mixture of Aristocratic and Religious (conservative Islamic).

Suleiman (Alaraph V, 3.3 au) is the only gas giant in the system. It has two planet-sized and terraformable moons (Ibn Sina and al-Rashid). Hayyan (Alaraph I, 0.9au) and al-Rahman (Alaraph II, 1.2au) are airless Mercury-sized worlds. The system has a Kuiper Belt beyond Suleiman but no asteroid belt.

Meiji

Location: Pi Orionis III (star type: F6 V)
Diameter: 9,960 km
Gravity: 0.92g
Distance from sun: 2 au
Satellites: None
Year: 2.83 Earth years
Rotation period: 28 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 30% small oceans
Climate: Warm Temperate
Species: Human
Culture: Corporate
Language: Japanese
Population: 384 million
Government: Representative democracy (nominally), Corporate State (reality)

Meiji is a corporate-owned world in all but name. The zaibatsus of Meiji fund its political parties and the politicians answer to the boardrooms, not the people. Meiji's cities are tour-de-forces of corporate grandeur with slender skyscrapers reaching for the skies. Rural Meiji hearkens back to the architecture of medieval Japan. Meiji is (in)famous for its liberal attitude to genetic engineering (genemods have become fashionable among the young) and for the decadence of Ukiyo, a floating arcology in Meiji's largest ocean, where anything goes.

Kin-kaku (Pi Orionis IV, 3.2 au) is the sole gas giant in the system. Its largest moon (Tokugawa) is planet-sized and is a possible candidate for future terraforming, as is the large sunward planet of Yoritomo (Pi Orionis II, 1.4 au).

Newton

Location: Delta Pavonis II (star type: G8 V)
Diameter: 9,410km
Gravity: 0.81g
Distance from sun: 1.1 au
Satellites: Faraday (51km diameter), Leibnitz (240km diameter), Hooke (58km diameter)
Year: 1.15 Earth years
Rotation period: 26 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 45% oceans
Climate: Temperate Mix
Species: Human
Culture: Scientific
Language: Anglic
Population: 189 million
Government: Technocratic democracy

The founding fathers of Newton intended that it be a world where science and research would be paramount, and their vision has come to pass. Newton's universities and academies are superior to all other colonial institutions and equal to the best of Earth. Although Newton is not ruled by its professors, the universities do elect their own representatives to the Senate and the constitution enshrines academic freedom as a human right. Corporate influence, notably that of Nanotech Unlimited, is growing, however.

Darwin (Delta Pavonis III, 1.4 au) is also remarkably Earth-like and is also inhabited. Darwin has a more conventional Frontier society. Researchers have discovered evidence of an indigenous sentient species on Darwin. Why they died out half a million Earth-years ago and their technological advancement remain mysteries.

Einstein (Delta Pavonis I, 0.8 au) is a potential candidate for future terraforming but any settlers will require high-gravity adaptation. Of the four gas giants, Archimedes (Delta Pavonis V, 3.2 au) is the largest. A lesser portal orbits Edison, the outermost gas giant (Delta Pavonis VIII, 20au).

Pasteur

Location: Hipparcos 15774 II (star type K2 V)
Diameter: 14,600km
Gravity: 0.94g
Distance from sun: 0.7 au
Satellites: None
Year: 0.59 Earth years
Rotation period: 22 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 57% oceans and seas
Climate: Cool Temperate
Species: Human
Culture: Scientific and Corporate
Language: French
Population: 137 million
Government: Representative democracy

Pasteur and its sister world of Napoleon (HIC 15774 I, 0.4 au) are the principal Francophone colonies in the Federation. A consortium of French corporations from Earth funded Pasteur's settlement, and ever since, commercial interests have held some sway in the politics of the Republic. Colonization of Pasteur was relatively slow owing to a series of indigenous diseases that adapted themselves to infect humans and Earth fauna. Eliminating this threat spurred advances that have given Pasteur its current preeminence in medical science and biotechnology.

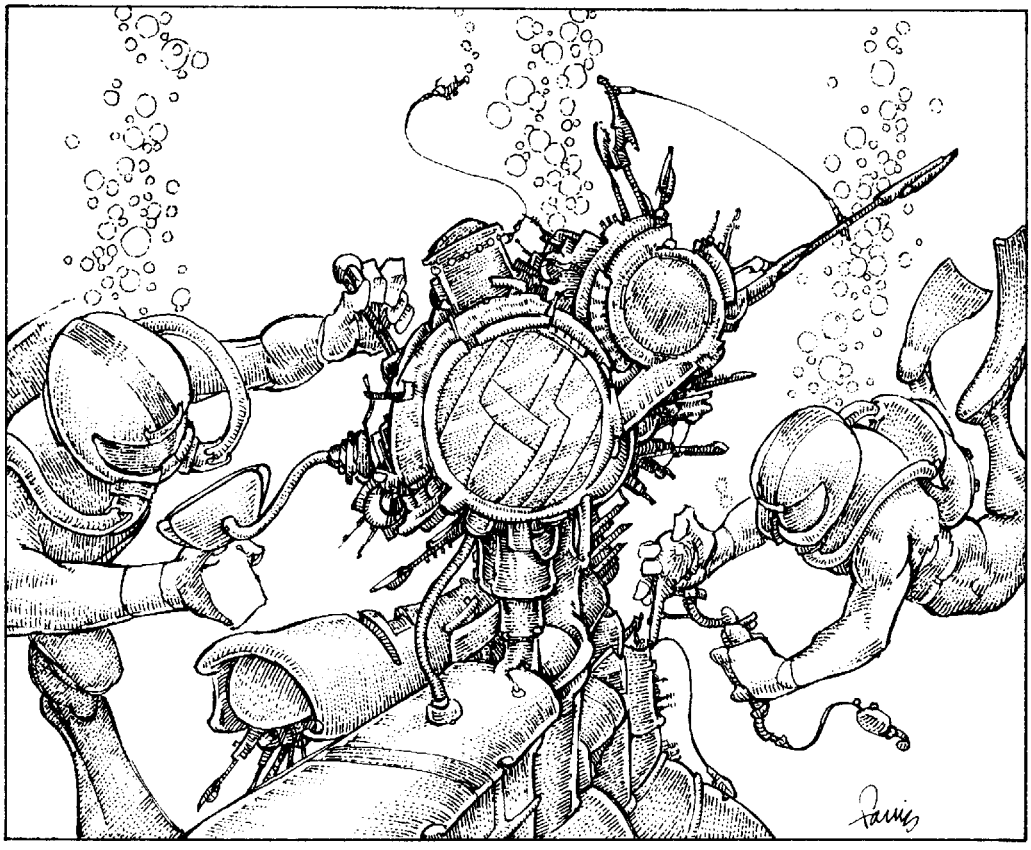
Napoleon's indigenous life forms have (so far) failed to threaten human expansion on that planet. Despite a population of several hundred million, Napoleon's society retains a Frontier feel whilst still preserving its inheritance of French culture.

The outermost gas giant, Charlemagne (HIC 15774 VI, 9.7 au), is also the largest. There is an asteroid belt (at 18-21 au) but this has not been commercially exploited.

Poseidon

Location: 61 Virginis IIB (star type G2V)
Diameter: 10,880km
Gravity: 0.85g
Distance from sun: 0.9 au
Satellites: Forms a double planet with Demeter
Year: 0.85 Earth years
Rotation period: 30 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 85% ocean
Climate: Warm Temperate/Tropical
Species: Human
Culture: Frontier and Aristocratic
Language: Various (Anglic, Dutch, Indonesian, Malay, Sinhalese, etc.)
Population: 199 million
Government: Oligarchy / democracy

Poseidon and Demeter remain unique in human exploration – a double planet of Earth-like worlds. Poseidon is a water-world – its landmasses are archipelagos of large islands rather than genuine continents. Poseidon's native life has yet to conquer the land. Regular tidal inundations (caused by Demeter's proximity) have led to the characteristic „stilt" architecture of the island manses of the oligarchs and deepwater arcologies. A high proportion of Poseidon's citizens have been genetically



engineered for its environment (Gills, Water Vision and High Pressure Tolerance are common).

Demeter (61 Virginis IIA, 0.9 au) has a much higher proportion of land to sea (40% ocean) and has been settled by colonists from the Indian subcontinent of Earth. Demetrian society is also a hybrid of Aristocratic and Frontier cultures.

The gas giant, Cronus (61 Virginis III, 2.5 au), is the largest of the three jovian worlds in the system. A lesser portal has been discovered in the sparse asteroid belt (0.1 au) of the system.

Shangri-La

Location: Hipparcos 29568 II (star type G5 V)
Diameter: 10,440km
Gravity: 0.75g
Distance from sun: 1.2 au
Satellites: Yin (74 km diameter), Yang (65 km diameter)
Year: 1.31 Earth years
Rotation period: 22 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 69% oceans
Climate: Temperate Mix
Species: Human
Culture: Exotic
Language: Mandarin Chinese
Population: 119 million
Government: Participatory democracy

Shangri-La began as a Chinese-sponsored colony for believers in Buddhist, Confucian, and Taoist teachings. From 2312 to 2333, Shangri-La placed itself under self-imposed interdiction, prohibiting immigration during this period. When Shangri-La resumed contact with the rest of the Federation, its lamaseries and temples were no longer just places of meditation and worship, they were also psionic training academies. The cause of the sudden rise in the psionically gifted on Shangri-La remains unknown. Some estimates place the numbers of latent and active psions on Shangri-La currently at several million individuals.

The other inhabited world in the system, Xanadu (Hipparcos 29568 I, 0.9au), is also a Chinese-sponsored colony. Its development has followed a more traditional evolution as a Frontier culture of several hundred million people.

The system has three gas giants (the largest is Rupa-Loka (Hipparcos 29568 IV at 5.4 au)) and two asteroid belts (at 0.5-0.7 au and 9-11 au respectively).

Valhalla

Location: Sigma Draconis III (star type: K0 V)
Diameter: 13,410km
Gravity: 1.05g
Distance from sun: 0.7 au
Satellites: Valkyrie (920km diameter)
Year: 0.59 Earth years
Rotation period: 21 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 43% oceans
Climate: Cool Temperate to Cold
Species: Human
Culture: Frontier and Militaristic
Language: Various (Anglic, Danish, Finnish, Swedish and Norwegian)
Population: 175 million
Government: Constitutional monarchy

The colonization of Valhalla was originally sponsored by the Scandinavian nation-states of Earth. Indeed Valhalla's landscape of abundant mountains, fertile valleys, fjords and snowfields is eerily familiar to that of northern Europe. A sizable minority of Valhallans have genetic adaptations to the colder climate (Cold Resistance (minor)). In the early twenty-fourth century, Valhalla offered full citizenship and generous land-grants to any AstroNavy or Starsoldier personnel who sought permanent residence. The descendants of these immigrants form almost a mini-society of military families whose members continue to serve with honor in the Federation and in the Valhallan Defense Forces.

Xenoarchaeologists have discovered what appears to be evidence of an extinct technological civilization on Valhalla. The cause and timing of its demise has yet to be established.

Ymir (4.9 au) is the largest of the two gas giants in the systems (the other is Fenris at 2.5au). Between Valhalla and Fenris is the Nibelungen (an asteroid belt stretching from 1.2 to 1.5 au). A lesser portal was discovered within the Nibelungen.

The Nexus Sector

Coirilon Belt

Location: asteroid belt of Coirilon System (star type: G6), some nine hundred hollowed-out asteroids (10km to 500 km in diameter)

Gravity: 0.8 to 1.2 g (artificially generated in hollow worlds)

Distance from sun: 0.5 to 2 au (major settlements: Bucdari 0.8 au, Talavi 0.9 au, Odiparon 1.2 au, Gadisaro 1.5 au, Hendaris 1.8 au)

Rotation period: 25 hours

Atmosphere: Nitrogen/oxygen

Climate: Temperate mix

Species: Runcori

Culture: Belter

Language: Kuncari

Population: 8 billion

Government: Socialist Corporate States

The Coirilon Belt was the first system to be settled by the Runcori seedships on their arrival in the Nexus Sector and remains one of their principal dominions. Only a handful of new bubble worlds have been constructed since the end of the Flowering. Although the habitats are in a continuous state of flux as Runcori engineers experiment and refine, the governmental structures have remained relatively unchanged since the early days of the Flowering. Each worldlet is equivalent to a corporation; the citizens are all "shareholders" with equal stakes in the enterprise. The world-corporations are *very* competitive against each other in maximizing their profits. The resulting wealth translates into a very high standard of living for the citizenry. High-ranking corporate managers can expect additional luxury "allotments" as bonuses.

The Coirilon Belt does not possess a portal. The absence of a portal and any indigenous sophonts were key factors in the selection of Coirilon by the first seedships. The Runcori did not want to trespass in a star system that "belonged" to anyone else. System security is taken seriously, as a direct consequence of damage sustained from Silth raiders during the Grand Alliance War, and large fleets patrol both hyperspatial Lagrange Points (tied to a gas giant orbiting 5.5 au from the star). The guardian fleets and their supporting bubble-worlds are the only areas where all the Coirilon habitats cooperate.

Ji'mad'ji

Location: Ji'mar'an I (star type: M dwarf)

Diameter: 9,300 km

Gravity: 1g

Distance from sun: 0.1 au

Satellites: None

Year: 0.03 Earth-years (11.5 Earth-days)

Rotation period: Tidally locked

Atmosphere: Nitrogen/oxygen

Hydrosphere: Nightside – frozen ice cap, Dayside – 40% ocean (eternal storm at centre)

Climate: Warm temperate mix tending to cool temperate as approaches night hemisphere

Species: Madji

Culture: Cosmopolitan

Language: Madji'aon

Population: 2 billion

Government: Clan-based oligarchy

Ji'mad'ji huddles so close to Ji'mar'an, its parent star, that it became tidally locked early in its planetary evolution. Fortunately for the Madji, it maintained a viable atmosphere. One hemisphere is shrouded in perpetual night and covered by a frozen ice cap tens to hundreds of meters deep. The dayside is bathed in the unending reddish sunshine of Ji'mar'an. The Perpetual Storm (a vast permanent hurricane hundreds of kilometers in diameter) dominates the Central Sea of Ji'mad'ji's equatorial region. Intensively farmed agricultural lands, interspersed with active volcanoes, occasional wilderness preserves and the squat cones of Madji towns, stretch from the coasts of the Central Sea to the very edge of the Ice. The bulk of any Madji city is constructed underground; the surface areas are used solely for access to the outside world. The near-collapse of civilization following the homeworld clans' defeat in the civil war ended permanently plans to build a global underground transit network. New industrial complexes and spaceport facilities have been established on the Ice replacing those devastated in the final year of the civil war. Some of the ruins are still too radioactive even for the Madji.

The spacefaring clans early formed alliances with the minor clans of the surviving asteroidal settlements (which suffered greatly during the war). Much of their disposable resources have been invested in rebuilding the bubble worlds and in extrasolar ventures. The discovery of a lesser portal lurking in Ji'mar'an's Kuiper Belt has compelled the starfaring clans to spread themselves thinly.

Not all the Ji'mad'ji clans are convinced of the wisdom of returning to the stars. There is a vocal minority that wants nothing to do with the "rebels" or aliens. Whether renewed contact with the "rebel systems" will reignite a new civil war remains to be seen.

Nexus

Location: Nexus II (gas giant) (star type: K2)

Gravity: 0.8g

Distance from sun: 0.9 au

Satellites: 3 airless moons (IIA "Primus" 700 km diameter, IIB "Secondus" 400 km diameter, IIC "Tertius" 300 km diameter), several ring systems

Year: 0.85 Earth years

Rotation period: 21 hours (Nexus II)

Climate: Variable

Species: Cerans, Gorsiva, Krakur, Madji, Runcori, Humans

Culture: Varies by species

Language: Varies by species

Population: 1 million (many transients)

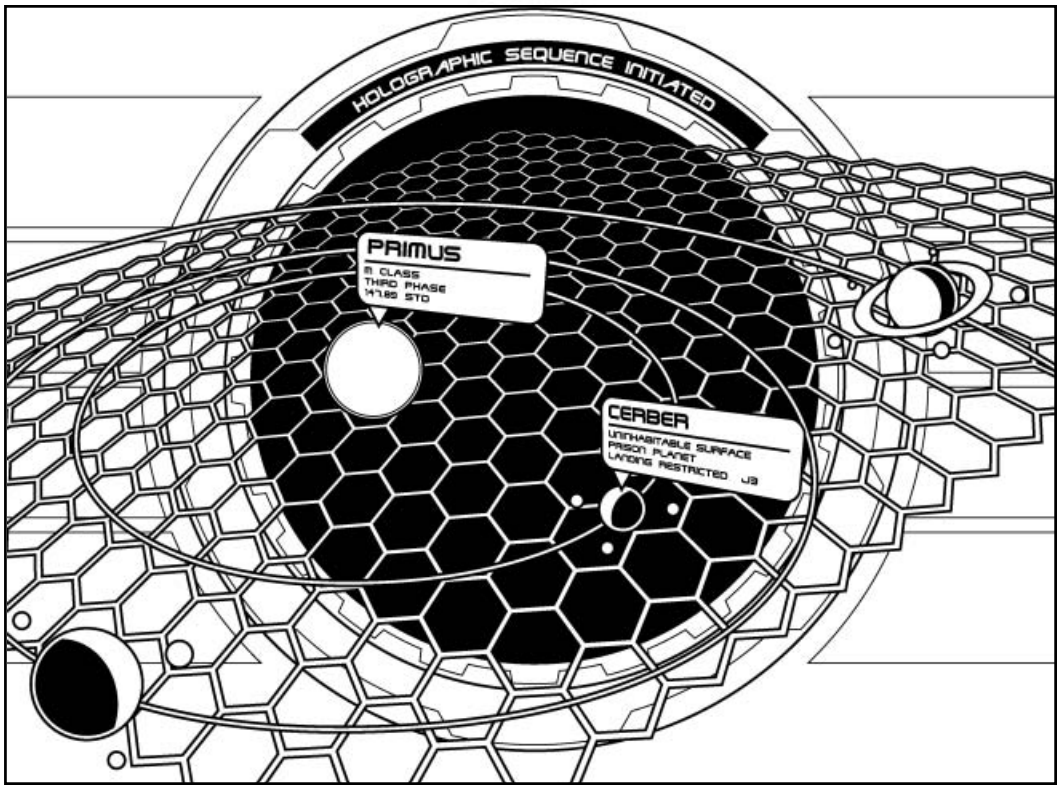
Government: Council

The Nexus solar system comprises one Mars-sized planet (The Graveyard) orbiting in the biozone, a medium-sized gas giant (Nexus itself), two smaller gas giants and a sparse Kuiper Belt. A savage war was fought in this system perhaps a million years ago. The Graveyard lost its atmosphere, its oceans and its entire biosphere. If a civilization had made its home there, all signs have been obliterated. Elsewhere there is evidence that the conflict reduced a dozen or more moons into rubble. None of the nearby star systems show any signs of similar battles, increasing the mystery.

The Grand Alliance constructed its first and only multi-species habitat (Centralia) on the largest remaining moon of Nexus, named Primus by humans. Additional smaller domed cities have been built with environments tailored to the particular needs of individual species on both Primus and Secondus, including the human habitat of Farpoint on Secondus. Farpoint was financed by a consortium of megacorporations. It is administered by the Terran Federation by an appointed governor. The fifty thousand human residents and transients are protected by a battalion of Starsoldiers, a squadron of AstroNavy starships, and an unknown number of FedPol Investigators and Agents.

Centralia itself is governed by a Council with one delegate per species. Leadership of the Council rotates on a (Nexus) yearly basis. The Terran Federation currently has observer status only on the Council.

The portal itself is in a polar orbit around Nexus. Portal defense is currently maintained by a flotilla of starships and starfighter battle groups belonging to the Alliance founder members (Gorsivans, Krakuren, and Runcori). In an emergency, the Council can request reinforcements from the other species.



Ranoc

Location: Maroc II (star type: G3)
Diameter: 13,100 km
Gravity: 1g
Distance from sun: 0.9 au
Satellites: Kinoc (4,000 km diameter, airless), Denoc (300 km diameter, airless)
Year: 0.85 Earth-years (311.6 Earth days)
Rotation period: 20 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 33% small oceans and large seas
Climate: Cool temperate (equatorial) tending to cold in higher latitudes
Species: Ceran
Culture: Cosmopolitan and Aristocratic
Language: Ceranor
Population: 5 billion
Government: Meritocracy / Oligarchy

Since the asteroid impact that initiated the most recent mass extinction, Ranoc has suffered a sequence of Ice Ages. This has been further exacerbated by the high proportion of land surface to open water. Currently Ranoc is in an artificially maintained post-glacial period. Industrialization and its associated heat pollution and global warming have staved off the advance of the glaciers for centuries now. One of the greatest controversies in Ceran society is whether or not the planetary engineers should be permitted to alter the climate permanently and deliberately.

The extended family is the cornerstone of all Ceran communities. Inheritance is not by primogeniture, however. Traditionalists hark back to long-established rites of passage wherein the young adults were required to prove themselves worthy of responsibility through feats of skill, endurance, and courage. Modernists employ rigorous examination and monitoring in both education and in employment to fast-track meritorious candidates into positions of responsibility and power. The old aristocratic families (The Coldbloods) retain their stranglehold on agricultural resources and maintain their status as landed gentry administering the irrigation network and the plantations. The Coldbloods have limited influence in the cities or off-world, where earned (not inherited) wealth is the arbiter of authority.

The Maroc portal shares the same orbit as Ranoc. However, this lesser portal is located on the opposite side of Maroc, being exactly 180 degrees away from Ranoc.

Saroulsiss

Diameter: 15,170 km
Gravity: 1.1 g
Distance from sun: 0.8 au
Satellites: Surososs (100km diameter, airless), ring system, Sirosaliss (900km diameter, airless)
Year: 0.72 Earth years (261 Earth days)
Rotation period: 22 hours
Atmosphere: Nitrogen/oxygen
Hydrosphere: 25% polar seas and large inland seas
Climate: Hot (equatorial) tending to warm temperate mix (in higher latitudes)
Species: Silth
Culture: Aristocratic and Militaristic
Language: Highspeech and Warspeech
Population: 3 billion
Government: Feudal/Monarchy

Saroulsiss is a hot and arid world. A single vast supercontinent dominates the planetary surface. The equatorial region is a world-girdling desert, which separates the more temperate climes of northern and southern latitudes. The North Polar and South Polar Seas are the largest bodies of open water on Saroulsiss.

Silth cities and towns are strongholds first, and settlements second. Many of the older metropolises retain the stone wall defenses of pre-industrial eras in their core districts; magneto-gravitic shield generators are the protection of choice in the modern era. This militaristic feudalism survived the industrial and information revolutions not only in architecture but in governmental structures. Following the exodus of most of the Great Families to conquer new worlds, lesser Families have risen to power, seeking favor from the Dominators of the First Family through merit and intrigue. Although the other Great Families are (supposedly) loyal vassals of the Dominator, the First Family's absolute sovereignty is limited to the Serasilisi system. In a break from tradition, *all* of the Dominators of the current First Family have been female

There is a second habitable world in the Serasilisi system, Solunsiss (Serasilisi III) at 1.1 au out from the sun. Colonized before the Runcori Contact, the equatorial and tropical regions are heavily populated. Higher latitudes are sparsely settled and the primitive native life predominates.

No portal of any kind has yet been located in this solar system.

Siva

Location: Reshta III (star type: G4)
Diameter: 11,850 km
Gravity: 0.8 g
Distance from sun: 1.2 au
Satellites: Meshva (300km diameter), Ashva (350km diameter), Luxna (100km diameter), Gensa (200km

diameter), Ursiva (3000 km diameter), Ibsa (25km diameter), Hensa (10km diameter)

Year: 1.31 Earth years (480 Earth days)

Rotation period: 26 hours

Atmosphere: Nitrogen/oxygen

Hydrosphere: 55% oceans

Climate: Cool to temperate mix

Species: Gorsiva

Culture: Cosmopolitan

Language: Gorresh

Population: 6 billion

Government: Participatory Democracy

At this point in its planetary evolution, Siva is a world of island continents separated by small oceans. The land is heavily forested, predominantly by the huge blossom trees (mature specimens are several hundred meters in height). The atmosphere is rich in oxygen and greenhouse gases, ensuring the climate zones range from warm temperate to merely cool. Gorsivan towns are not built; they are grown and are integral to the structure of the blossom trees. Conventional manufacturing, spaceports and other industrial facilities are situated in areas unsuitable for the blossom forests.

The Wingmasters are the executive branch of the Sivan world government, partly selected according to experience and responsibilities, partly elected. The Wingmasters are administrators acting according to the wishes of the Consensuality. The entire adult population of Siva forms the Consensuality and through electronic discussion expresses and determines policy. Differences of opinion are tolerated; prolonged dissent after consensus is reached is not and is considered factionalism. Since interplanetary and interstellar travel became practical, minorities have typically found it easier to emigrate rather than change the consensus, leading to a self-reinforcing conservatism in the Sivan Consensuality.

Tens of millions of Gorsivans live in domed habitats on Ursiva. The Ursivan Consensuality is independent of Siva and will often take a contrary position on policy. Émigrés from Ursiva have founded smaller colonies on the lesser Sivan satellites. Their disunity prevents them from having any significant influence in system politics.

The Reshta portal orbits Isehva (Reshta VI), the largest gas giant in the system and 6 au from Reshta. In a rare display of unity, the Sivan and Ursivan Consensualities have established a joint presence in the Isehva satellite system to guard the portal.

Tamazek

Location: Farazek III (star type: G7)

Diameter: 11,310 km

Gravity: 0.9 g

Distance from sun: 1.1 au

Satellites: None

Year: 1.15 Earth years (421 Earth days)

Rotation period: 19 hours

Atmosphere: Nitrogen/oxygen

Hydrosphere: 77% (seas and swamps)

Climate: Warm temperate mix

Species: Krakuren

Culture: Scientific and Exotic

Language: New Kraka and Old Kraka

Population: 4.5 billion

Government: Representative democracy

Tamazek is a warm and very wet world. Much of its surface is covered in shallow seas, swamps and marshes. Days without rain are rare in most regions, so getting wet is a part of life on Tamazek. The amphibious Krakuren are perfectly suited to this environment. The principal Krakuren settlements are aquatic arcologies, constructed in coastal waters and lakes, combining underwater residential areas with surface industrial complexes. Deep-water arcologies focus on aquaculture and tend towards Exotic cultural mindsets. Tamazek is governed by a parliamentary democracy; each arcology elects Truthspeakers in proportion to population.

In the Farazek Asteroid Belt (1.5 au to 3 au from the sun), over a billion Krakuren dwell in the Tentacles, huge cylindrical habitats. Smaller bubbleworlds have been created in the stable Lagrange points of the gas giant Valazek (Farazek IV, 5.3 au from the sun). Krakuren from the Tentacles are unabashedly Belter in outlook rather than Scientific or Exotic. Tentacle governments have a more belligerent stance towards the Silth than homeworlders and some favor expansion beyond the Farazek system.

A lesser portal orbits the airless hellworld of Delezek (Farazek I, 0.5 au from the sun). The military-industrial complexes, supporting the portal defense forces and the space navy, now dwarf the original scientific colony bases of Delezek.

SysOp's Note: Other Alien Worlds

Other than the Krakuren, all of the known alien civilizations of the Nexus Sector have settled worlds beyond their native star system. Players may desire their characters hail from planets other than the species homeworld.

Gorsivans have thriving independent Frontier cultures on Behnva and Takhna for instance, while their communities on Ituvna are predominantly Scientific in outlook (and equally unwilling to accede to the whims of the Sivan Consensuality).

The Madji clans of Ji'zel'da have embraced the Corporate society wholeheartedly. The Frontier world of Ji'hadra'ji came through the civil war almost unscathed, whereas Ji'mal'ro remains a struggling Frontier colony where the memories of the war linger still and homeworlders remain figures of hatred.

The Herandilon Belt is the second largest concentration of Runcori habitats outside Coirilon. The majority of the Herandilon worldlets are Scientific rather than pure Belter societies.

Arenac and Kyranoc are thriving Ceran Frontier worlds whose populations have already shown their strength of character in successfully resisting Silth incursions. The Frontier colonists of Itanoc sell agricultural products in return for manufactured goods from the Belter and Corporate orbital habitats in that solar system's asteroid belt.

Society on the Silth Dominion capitol of Talansiss is even more Aristocratic than Saroulsiss; the Dynast of Talansiss has ambitions to become Dominator himself one day. The Militaristic world of Radisiss has leveraged its expertise to become independent of the Domains – its naval and marine academies are considered second to none throughout the Imperium. Dalaosiss is typical of many of the Silth Frontier worlds – the original ruling Family was dispossessed during the civil war and a cadet branch of the victorious Domain Great Family imported as the new administration. The Protectors of Dalaosiss have more power than their predecessors, but have yet to earn the respect of their subjects.

Transit Times

The Transit Time Table provides distances between forty named systems (twenty in each sector). Planets in bold have been fully described above and planets in bold italics also have a portal in their system. Distances are measured in light-years and the equatorial celestial coordinate system has been used. See pages 253-256 for the Transit Times tables.

The Terran Federation

The Terran Federation is the only interstellar government that can legitimately claim to represent the interests of all humanity. It does not claim to be the best of all possible regimes, and even its most ardent supporters will admit to its failings. However, it has maintained the peace and diversity of human civilization for two and a half centuries. The alternatives of completely independent star nations with interstellar war inevitable eventually or an empire imposing a single individual or planetary will upon everyone else are considered by most human beings to be much worse.

Political Structure

The Terran Federation is an alliance of semi-autonomous „planetary" governments. Each member government is wholly responsible for its internal affairs and may freely make agreements with other Federation governments. Foreign policy, defense against hostile aliens, threats to humanity, and the resolution of inter-governmental conflict are reserved matters for the Council of the Federation, which convenes in Antarctica City.

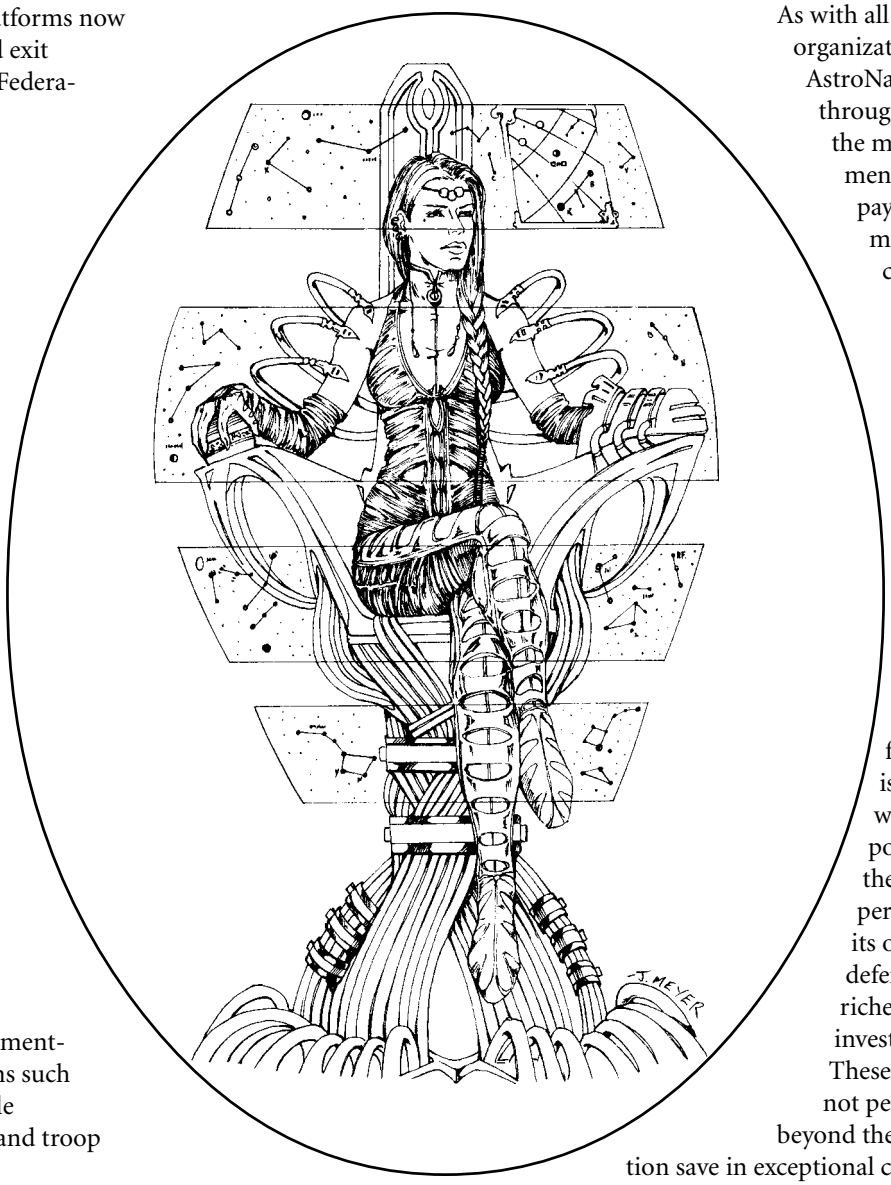
Any self-governing polity with a population of over one million has the right to voting representation on the Council. Outside the Solar System, this means that secondary colonies (such as asteroidal settlements) form part of the jurisdiction of the principal colony world of the system. With the exception of Earth, each member government is permitted one Councilor. (Earth has twenty Councilors in recognition of its vaster relative population). Councilors may be directly elected or (more frequently) may be selected for the role by their government. Council decisions are by supermajority voting of the delegates in that at least two-thirds of the Councilors must vote in favor of any proposal for it to be ratified.

Membership in the Federation is mandatory for all human colonies, even if they are too small to have voting rights, and the Council will use military might to ensure compliance. Although member worlds are supposed to have complete freedom in their own internal issues of governance, any government determined to be committing crimes against humanity upon its own citizenry will find itself facing economic sanctions at a minimum, militant opposition groups being covertly supported by other governments, and eventually direct military intervention by the Federation itself. Since the Declaration of Man, four human-occupied systems have accepted Interdiction, renouncing all contact with the rest of the universe in return for total self-rule.

There is no such thing as Federation citizenship *per se*. However, anyone in Federation *service* (e.g. the AstroNavy, the Starsoldiers, FedPol, etc.) is required to renounce their birth citizenship for the duration of their service.

The Federation AstroNavy

The goals of the AstroNavy have always been to preserve the unity and peace of mankind and defend against all enemies foreign and domestic. Only in the last few years has defending humanity against aliens become a real concern for the navy. The Silth War and the requirements of portal travel have substantially altered strategic thinking and naval construction. In strategic terms, very large ships (such as dreadnoughts and superdreadnoughts) as well as orbital weapons platforms now guard the entry and exit zones of portals in Federation space. Rapid reaction forces comprised of squadrons of lesser line-of-battle craft (cruisers, destroyers, and frigates) are held in readiness in portal systems to be dispatched whenever and wherever the alarm is raised. The AstroNavy relies on scoutships, corvettes, and hosts of courier drones to relay information around the Federation. In addition to concentrating construction on smaller craft at the expense of larger battleships, the AstroNavy is experimenting with new designs such as portal-compatible starfighter carriers and troop transports.



Unlike most other space navies and its wet-navy ancestors, the AstroNavy's ships are crewed by officers and trainee officers – there are no enlisted men. Cadets who graduate become Sublieutenants, and, in due course are promoted through the ranks of Lieutenant, Lieutenant-Commander (responsible for a section such as engineering, comms/sensors, gunnery, etc.), and eventually to the command positions of Commander (executive officer on larger ships) and Captain. Squadrons and fleets are commanded by flag officers (Rear Admirals, Vice Admirals, or Admirals). Commodore is an appointment in the AstroNavy enabling junior captains to command small task forces without risk of seniority conflicts with other, more experienced captains. All junior officers are expected to have one primary section specialty and one secondary specialty.

As with all Federation organizations, the AstroNavy is funded through taxes levied on the member governments, who dislike paying taxes just as much as their citizens. This has limited the size of the AstroNavy and prevents it from establishing permanent guard squadrons in all Federation systems. That the AstroNavy might become an instrument of imperial conquest isn't a widely held fear, but it is an issue on some worlds. Any voting political entity of the Federation is permitted to possess its own system defense fleet and the richer colonies have invested in such forces. These colonial units are not permitted to operate beyond their own jurisdiction save in exceptional circumstances.

Starsoldier Corps

The Starsoldier Corps are the ground forces of the Federation. Their roles include base security for Federation installations, providing „marine" complements (at platoon and company strength) for the AstroNavy, peacekeeping missions, planet-based defense, and assault

forces to take enemy territory. Starsoldiers are intensively trained and equipped for combat in terrestrial, non-terrestrial, and space-based environments. Transporting large numbers of troops, support staff and combat vehicles across interstellar distances (by conventional FTL means or the portals) is a difficult proposition. Starsoldier doctrine emphasizes flexibility of response and effective use of small units to deliver precision attacks. Every Starsoldier counts in the Corps.

Starsoldier assault forces make extensive use of gravtanks and gravcarriers. Gravplanes, assault helicopters, and occasionally combat hydrofoils and submarines also play a role in planet-side operations. Development is underway for a new generation of multimodal military vehicles. For actual insertion into a combat zone, Starsoldiers will be deployed from orbit via waves of AstroNavy assault shuttles screened by starfighter squadrons.

The smallest Starsoldier tactical unit is the platoon of 25 enlisted men and women, commanded by a Lieutenant. Four combat platoons plus officers and technical support specialists form a company. The officer in charge of a company is a Commander with a Subcommander as second-in-command. The company is the smallest unit capable of independent operation. Four companies constitute a battalion commanded by a Major with a Submajor as second-in-command. A regiment is comprised of four battalions and is commanded by a full Colonel supported by a Lieutenant Colonel. Generals and Brigadiers will head military operations requiring multiple regiments. The rationale behind having distinct secondary commanding officers for units of company strength and above is to provide redundancy in combat – for example, if a company Commander is killed or incapacitated, responsibility devolves immediately to someone who is also fully up to speed on the tactical situation of the entire company (i.e. the Subcommander), rather than a more junior officer who has been fully engaged with the needs of his own tactical unit.

FedPol

The Federation Police, or FedPol, are the sole law enforcement organization in the Terran Federation that has jurisdiction beyond the borders of any single member government. If a criminal or suspect flees a particular planetary jurisdiction, local law enforcement will typically inform FedPol, who will pass the details on to other agencies as well as putting the individual on FedPol's own wanted list.

FedPol is responsible for investigating all crimes that occur in space, all serious crimes against aliens, and felonies committed by humans outside human space. FedPol also investigates technological crime, such as illegal bioengineering experiments, prohibited nanotech and cybertech development, and scientific research with clear weapons potential (i.e. antimatter production). Illegal exploitation of peoples or worlds by megacorporations and malfeasance by governments fall within its reach, although this normally involves undercover and covert operations. Responsibility for detecting and/or preventing smuggling, piracy, espionage and treason is shared with the AstroNavy and AstroNavy Intelligence.

Each world has one or more FedPol offices, each administered by a Director or Assistant Director. Within an office, Inspectors and Chief Inspectors are responsible for teams of Investigators dedicated to detecting particular types of crime, e.g. Prohibited Research, Xenocide, Internal Affairs, etc. Undercover work is performed by FedPol Agents, who may report directly to an officer at Director level.

Organizations

Megacorporations

By the twenty-first century, there were numerous multinational and transnational companies whose turnovers and sometimes profits rivaled or surpassed the gross national products of nation-states. This process continued unabated into the interstellar era as the megacorporations expanded with the rest of humanity into space. The megacorps have always chafed at restrictions imposed by governments, and in the past century, have funded their own colonization projects. These colonies have matured into the so-called Corporate Worlds where the megacorps are the *de facto* or *de jure* governments.

Advanced Atomics

Headquartered on Venus, Advanced Atomics is the premier fabricator of microfusion and electrical generation equipment in the Federation. Its products are extremely reliable, if no longer at the bleeding edge of technological development. Advanced Atomics is widely believed to be concentrating its research efforts into vacuum energy.

The Bank of Luna

Established in the twenty-second century by a consortium of Swiss merchant banks, the Bank of Luna quickly established itself as **the** secure financial institution for off-world commercial and private clients alike. The „Gnomes of Aristarchus" offer „total security and confidentiality" to all their clients. They have used their influence with successive Lunar Alliance administrations to ensure the privacy of the deposit vaults are guaranteed in law.

Caduceus

Well-known for their humanitarian sponsorship, Caduceus is a not-for-profit megacorporation specializing in the design, development, and sale of medical equipment for hospital use. The regeneration tank is merely

their premier product; they also sell top-notch arterial fixers, life support units, skeletal healers and tissue healers. These and many other products were developed at their research hospitals on the French-speaking corporate and scientific colony world of Pasteur. Anyone with sufficient credits will be treated in those hospitals, total discretion assured. Caduceus maintains dual headquarters in Marie-Curie (on Pasteur) and in Paris, on Earth.

Chikaru

Chikaru is a biotechnology megacorporation, specializing in genetic engineering of plants, animals, and humans. Their expertise in genetic re-engineering of adult humans is second-to-none; rumors that they have a germ warfare division are almost certainly a smear campaign orchestrated by corporate rivals. Although the Japanese-speaking world of Meiji had significant commercial funding in its founding, the dominance of Chikaru and the other zaibatsu-class companies in its politics has only been apparent in the last thirty years. Chikaru has used its influence to ensure a complete deregulation of biotech research and deployment.

Interstellar Metals

Interstellar Metals is one of the wealthiest megacorps in the Federation. They were also the first megacorp to become a government through their colonization of the Spanish-speaking world of El Dorado, whose solar system boasts three asteroid belts rich in metallic and carbonaceous worldlets. Interstellar Metals has mineral exploitation agreements with over a dozen colonial systems where it leases ore-bearing asteroids and minor moons from those governments. The associated mining habitats are treated as El Doradan territory for the duration of the leases – workers have few rights and managers seek only to maximize profits.

Nanotech Unlimited

Originally formed as a spin-off company from the University of New Cambridge on the scientific colony of Newton, Nanotech Unlimited is now the leader in nanite design, development and programming. It is a major shareholder in most of the other corporations on Newton and has an aggressive policy regarding patent acquisition and exploitation. Many spacers owe their lives to the self-repairing spacesuits that were Nanotech's first commercial offering.

O'Neill Space Industries

Named in honor of the twentieth-century scientist and futurist, Gerard K. O'Neill, OSI was one of the first companies to exploit zero-gravity and low-gravity environments for manufacturing consumer goods way back in the twenty-first century. They were also heavily involved in the construction of bubble-worlds in the Asteroid Belt during the First Exodus. The Belter League eventually paid off all the money owed to OSI for those early habitats generations later. OSI built and then leased Tintamar to the Terran Federation; they still hold the maintenance contracts for almost all of Tintamar. OSI has been exploring a strategic partnership with Interstellar Metals to build space habitats for the latter's mining operations, and may transfer their principal headquarters from Ceres in Sol System to El Dorado.

Solar & Galactic

Until the discovery of the portals, Solar & Galactic was the largest shipping company in the Federation. Their fleet of medium and heavy freighters dominated bulk cargo haulage, while their cruise liners were (and still are) a by-word for luxurious travel. Portals revolutionized the transport business and allowed smaller corporations and independents to seize a large chunk of the freight market. Solar & Galactic's headquarters is in Ring City, but it maintains large branch offices on Tintamar and in the Jovian Confederacy, and smaller offices elsewhere in human space.

Starclan Traders

Starclan Traders is the Anglic translation of Mahari Ji'sanol, an extended super-clan of Madji clans from Ji'mad'ji that is approximately equivalent in human terms to a megacorporation. They are interstellar merchants who will buy and sell anything, but are particularly interested in artifacts and technologies that will benefit Ji'mad'ji or its erstwhile colonies. Unique among the Madji trading houses, they welcome humans and other aliens as clan members. Non-Madji must earn their status and are expected to show even more loyalty to the clan than native Madji.

Translight Survey

It was a Translight Survey expedition that discovered the Methuselah portal, and Translight Survey who sponsored the first commercial exploration of the Nexus Sector. They currently rely on robotic probes to identify systems of interest and follow up with manned expeditions. Translight Survey employs a number of aliens among its teams, valuing their nonhuman perspective. Survey teams are expected to take risks, but they are also expected to get **all** of the information back to headquarters. Translight Survey has its corporate headquarters in Lowell City, Mars.

Virtual Robotics

Created by the merger of Virtual Minds (specializing in AI software systems) and Universal Robotics (a robot manufacturer), Virtual Robotics is the market leader in specialist robot designs, particularly Explorer, Medical, Repair, and Security models, for the corporate market. Its subsidiary, Silicon Friends, is a minor player in the Companion and Tutor Android markets. As an Earth-based corporation, Virtual Robotics is not allowed to create or sell Combat or Espionage models *on Earth*.

Other Organizations

The Church of the Omnisentience

A generation after the discovery of the portals, the Church of the Omnisentience boasts several million adherents, mostly in the Sol System and on the Corporate Worlds. Church members believe that the Builders were a highly spiritual race and that the portals mark a turning point in the spiritual enlightenment of the human species. The principal tenets of the faith are the universal brotherhood of all sentients, the nurturing of civilization in secret by the Builders, and a hope that the Builders will return when the time is right. As humanity was the first known species to unlock the portals, the Church considers that mankind has a special role to play in uplifting galactic culture. The Church is still loosely organized – its missionaries and preachers (known as Followers) spread the faith and lead congregations in prayer and discussion. The Church follows closely any and all research into Builder artifacts and xenoarchaeology, and has funded some studies. Church members also have a strong interest in cryptohistory and historical conspiracy theory, as they believe that the evidence of Builder influence on human cultures is hidden in the past.

The Cosmographical Society

The Cosmographical Society is a philanthropic foundation that seeks to promote an understanding of the interrelationships among species, civilizations and worlds. They fund expeditions to discover and explore new worlds as well as archaeological, anthropological and xenological studies. Although the Society receives a steady income from membership dues, a steady stream of multimedia magazines, holovid documentaries, and sensable shows generates most of its revenue. The Society does not yet insist that all funded researchers wear sensory recorders when in the field, as long as investigators are willing to ensure they maximize data collection by other means. Its headquarters is in New York.

Galaxy News

24/7 real-time news is not possible on an interplanetary, let alone interstellar, scale. Galaxy News (GN) has stationed journalists and their support teams throughout Federation space (and even has a few "foreign correspondents" in the Nexus sector). News teams collate the significant events of a planet on a daily or weekly basis from local news outlets, send reporters to the scenes of major events, and undertake investigative journalism as and when merited. Drones and occasionally courier vessels carry the news to the nearest portal system for eventual transfer to GN headquarters on Earth, where the reports are edited and then transmitted by courier drone across the Federation as syndicated holovid and sensable documentaries. GN has a deserved reputation for objective and in-depth journalism. Censorship of its broadcasts is not uncommon on the Corporate Worlds.

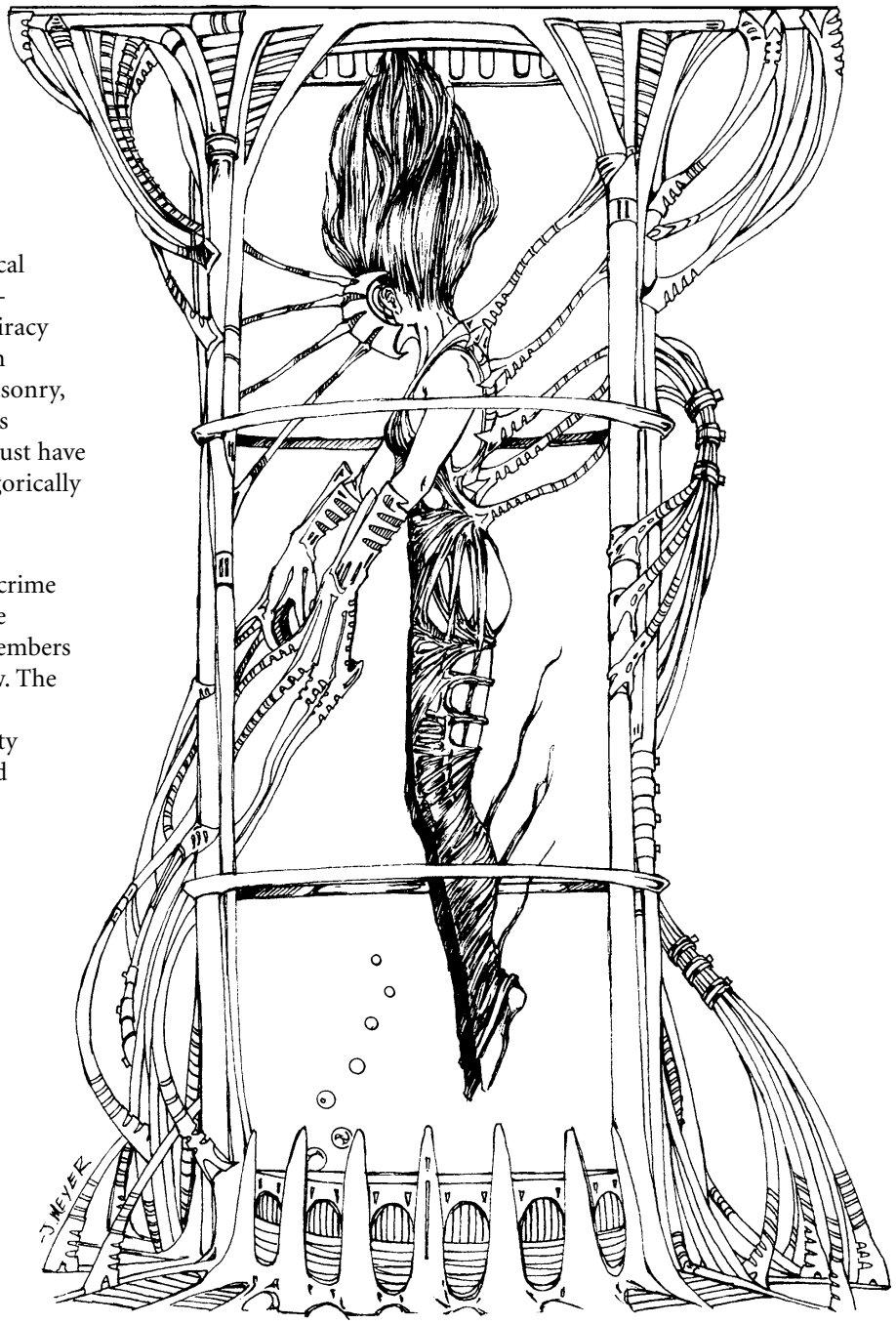
Megacorp Mercenaries

Private security forces have long been the answer to defending corporate property and personnel from theft, sabotage and assault. Local security guards and night watchmen simply don't have the requisite training, organization, or numbers to protect megacorporations. To satisfy this need, entrepreneurs and ex-military officers have formed mercenary companies that can provide first-class security to megacorp clients. Moreover, these mercenary units can and do act as quasi-military forces, defending facilities and taking offensive action against insurgents, pirates, alien raiders, and even corporate rivals. Mercenary ground units range in size from single companies up to complete regiments (maximum permitted by Federation law); most are battalion-sized. Mercenary naval units are limited to squadrons of up to five cruisers (or smaller vessels), although there are no restrictions on the number of starfighters allowed. Megacorps who require larger military forces must contract with multiple mercenary companies. Mercenary contracts are very detailed about what orders may be issued, how units may be deployed, who they are willing to fight against, and the treatment of fellow mercenary prisoners. Mercenaries have been regularly deployed to maintain government authority (particularly on corporate and frontier worlds) for decades. More recently, corporate rivalries have escalated into small-scale skirmishes and disguised raids against isolated facilities. Merc commanders have been careful to avoid civilian or high-profile targets so far, rightly fearing Federation intervention.

The Order of the Transcendence

The Order of the Transcendence is the professional body for the psionically gifted throughout most of the Federation, and was founded in 2052. Its headquarters is in Tibet on Old Earth, but it has chapter houses on nearly every major Federation planet, which provide training to suitably qualified candidates and assistance to members of the Order in "good standing". The Order is registered as a not-for-profit corporation and receives 10% of any fees its members receive for commercial services. The Order is proactive in helping its members find consultancy and contract employment. It is less

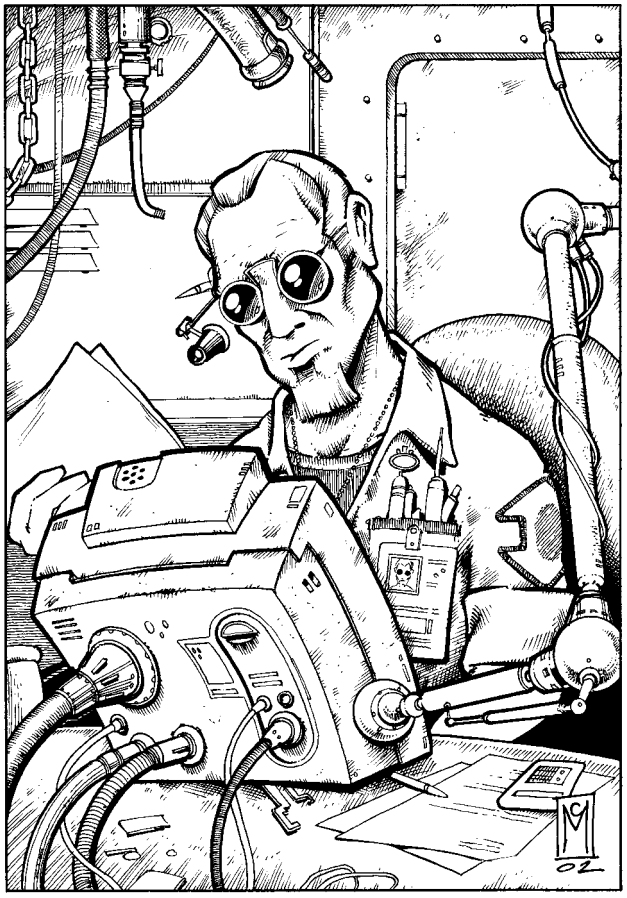
supportive of those who take up permanent posts within megacorporations, some of which have established their own psionic divisions staffed by disaffected Adepts. Order Adepts entering Federation service are cautioned that their loyalties must be to the Federation. The hierarchical structure of the Order and its traditional secrecy have led many conspiracy theorists to make comparisons with other "secret societies" (e.g. Freemasonry, the Bavarian Illuminati, the Knights Templar, etc.) and suggest that it must have sinister intentions. The Order categorically denies all such claims.



The Syndicate

Even in the twenty-fifth century, crime pays. The Syndicate is just one of the underworld organizations whose members prosper on the wrong side of the law. The Syndicate is heavily involved in cybercrime (information and identity theft), smuggling, drug running, and contract crime (such as thefts to order). For the right price (100,000 credits plus), Syndicate bosses will arrange assassinations. The Syndicate is largely uninterested in street crimes such as pickpocketing, robbery, and domestic burglary – it simply does not pay enough. The Syndicate has branches on many worlds. Consequently when a gang member is under too much scrutiny from local law enforcement, off-world transfers can be arranged. It is generally believed that the Syndicate runs its own back-street clinics for unregistered biosculpting, genetic re-engineering and cybertech surgery.

Character Creation Overview



Creating a HARP SF character is easy! By following the six painless steps described below, your character will be ready for action very quickly. You will need a pair of ten-sided dice, pencils, scratch paper, and a copy of the HARP character sheet. You can photocopy the sheet at the back of this book or download several free versions of the sheet at the HARP website, which can be found at: www.HARPHQ.com.

The character sheet is used to record all of your character's important information. The image below is an example of the two-page version of the HARP SF character sheet.

Step One: Choose a Profession

HARP SF includes eleven professions to choose from: Adept, Dilettante, Entertainer, Fusion, Merchant, Pilot, Researcher, Scout, Soldier, Spy, and Tech. Each of these professions starts out with a unique set of abilities and favored skill categories that help shape the budding hero, but all skills are available to any profession. Each of the Favored Skill Categories for your chosen profession grants a number of free skill ranks in that category. Record your Favored Skill Categories and the number of free ranks on your character sheet/scratch paper somewhere for reference when we get to buying skills in Chapter 3/Step 4 later.

Step Two: Generate Statistics

HARP SF uses eight statistics (or stats) to represent a character's natural abilities: Strength, Constitution, Agility, Quickness, Self Discipline, Reasoning, Insight and Presence. The numerical value of these stats can range from 1 to 105. Values over 100 represent extraordinary stats. Select one of the options in Chapter 4 to generate your character's beginning stats, and assign the eight numbers as you wish.

Next, compare your starting statistical values to the Development Point and Stat Bonus table on p. 42. Record the number of Development Points and skill bonuses received for each stat on your character sheet.

Example: *Jay, a Tech, has an Insight stat of 90. After glancing at the table, Jay's player notes that he receives 8 Development Points and a +8 skill bonus. This information is recorded on Jay's character sheet.*

After you have noted your bonuses, total the number of Development Points received from each stat and double them. At level one, characters receive twice the usual number of Development Points to reflect a solid start in life. You will use Development Points every level to learn new skills and improve old ones, thus expanding your character's abilities.

Character Creation Tip: Assigning Your Stats

Professions have "key" stats, reflecting the attributes that are most prized to the profession. For instance, Agility is highly valued by Scouts. When assigning your generated values to your stats, it is a good idea to have already developed an idea of what you would like to play, and assign your stat values accordingly.

Step Three: Choose a Species & Culture

Select the species and culture that best suits your character.

Harp SF Species: Ceran, Human, Gorsiva, Krakur, Madji, and Runcori. Some SysOps will also allow you to choose Silth as a species. Each of the seven species is distinguished by their own special characteristics, abilities, and advantages. For more information on HARP SF species refer to Chapter 5.

Harp SF Cultures: Aristocratic (Nobles and Commoners), Belter, Corporate (Shareholders and Employees), Cosmopolitan, Exotic, Frontier, Militaristic, Religious, and Scientific. Each cultural group gives a character skills that are usually learned during an adolescent period. Record these skill ranks on your character sheet. For more information on **HARP SF** cultures refer to Chapter 5.

Step Four: Buy Skills & Talents

At this stage, players may spend their characters' starting Development Points to purchase a wide variety of skills and talents. All skills are purchased at either 2 or 4 points per skill rank. A skill's cost is based on your chosen Profession. Any skill in a favored category is purchased at 2 Development Points per skill rank, and any skill located in a non-favored category costs 4 Development Points per skill rank. The total numerical value of a skill is increased as skill ranks are purchased. The first 10 ranks in a skill bestow a bonus of +5 per rank. Refer to Chapter 6 for a complete list of skills.

Buying Talents: Talents represent special abilities or training. You can purchase as many talents as you wish. Refer to Chapter 7 for an exhaustive list of talents and their corresponding Development Point costs.

Calculate your character's total skill bonus: Total the bonus for your character's skill ranks and add it to the appropriate stat bonus to determine your total skill bonus.

Example: *Dack, a Researcher, has 4 ranks in his Computer Operation skill, which is governed by the Insight and Reasoning stats. His stat values in Agility and Insight are both 90, which, as he notes, gives him a +8 skill bonus from each stat. His final total in the Computer Operation skill is 36 ((4 x 5 [Rank Value]) + 8 + 8).*

Step Five: Purchasing Equipment

Each character begins the game with 1000 credits, which can be used to purchase equipment. An extensive equipment list is located in Chapter 8.

Step Six: Final Touches

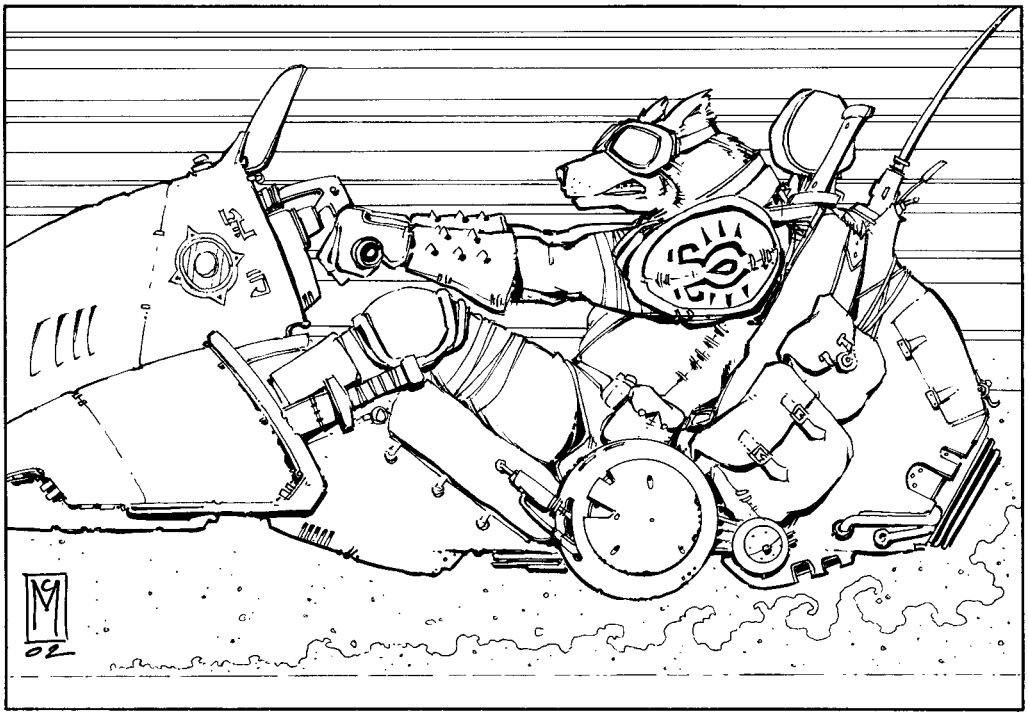
By this point, your character has a fine collection of numbers that describe his or her abilities at a wide variety of tasks. However, the numbers are still lifeless without the intangible aspect of character to back them up. Consider a few important details about your character. What does he or she or it look like? What sort of attitude do they present to the universe? What motivates them? Fleshing out these facts about your character will ultimately help bring him or her or it to life!

Congratulations – you have just finished your HARP SF character. Now get out there and get playing!

Player's Note – Electronic Characters

With HARP SF, you are not limited to playing flesh-and-blood characters. Characters can be "virtual persons" – where their minds and personalities have been recorded and uploaded into the global networks of the future. Such virtual persons can be downloaded into robotic bodies, buildings, and vehicles. Characters can also be Artificial Intelligences (AIs), pure software creations resident in cyberspace or inhabiting robotic forms. Players should check with their SysOp to see if such characters are permitted in the campaign. Full rules for electronic characters can be found in HARP SF Xtreme.

Professions



The first step when creating a HARP SF character is to choose a Profession. Much like a career, a Profession reflects the focus your character has given to training and development. A Profession also determines how difficult it can be for you to learn certain skills. Finally, a Profession can also offer insight into a character's demeanor or motivation in life.

Each Profession contains the following information:

Name & Description: The name of the Profession and a short description.

Favored Categories: This section lists a number of skill categories at which characters of the Profession are unusually proficient. Skills listed in any favored category are purchased at the cost of 2 Development Points per rank. Skills from any other category are purchased at the cost of 4 Development Points per rank. Each Profession gives a character a number of free skill ranks. These ranks are bestowed upon characters during a training period, and as such are only gained at the time of character creation.

Example: *Researchers have five favored skill categories:*

Artistic:	2	**General:**	6
Physical:	2	**Scientific:**	8
Technical:	2		

So when creating a Researcher, you have 2 initial skill ranks to assign to the Artistic category, 6 to the General category, 2 to the Physical category, 8 to the Scientific category, and 2 to the Technical category. Once these free skill ranks have been assigned, any additional skills desired in any of the five favored categories are purchased at 2 points per skill rank. Skills in categories outside of a Researcher's favored categories, such as the Outdoors category, are purchased at 4 Development Points per skill rank.

Key Stats: These stats are the ones most prized by members of the Profession in general. The stat values are used in determining any bonuses to the majority of the favored skills.

Professional Abilities: Each of the Professions has at least two unique special abilities. The Adept profession gains access to either one or two Psionic Fields at 1st level; other characters wishing to develop psionic abilities must first gain a Psionic Field Talent. Psionics are detailed in Chapter 11.

Adept

The Adept's training has turned inward, focusing on the hidden potential of the mind. The rewards for this dedication are paranormal abilities affecting mind and matter, space and time. Their powers may be inexplicable, but their effects are very real.

Favored Categories:

Artistic:	2	**Influence:**	2
Concentration:	8	**Physical:**	2
General:	6		

Key Stats: Presence and Self Discipline

Professional Abilities: At 1st level, all Adepts gain one Latent Psionic Field Talent and one Active Psionic Field Talent (same Field). They can then take **either** a second Active Psionic Field Talent (in the same Field) **or** a second Latent Psionic Field Talent (in a different Field). (The SysOp determines which Fields are available in the setting.)

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Adepts gain a +10 bonus to any one Concentration skill of their choice. No Concentration skill can have more than a +30 bonus from this ability.

Dilettante

Jack-of-all-trades and master of none, most Dilettantes are content with ordinary average lives as clerks, farmers, officials, shopkeepers and so on. However, a few Dilettantes find themselves drawn to adventure, while others find it thrust upon them. Their flexibility can make them surprisingly effective heroes.

Favored Categories:

General:	6	**Physical**:	2

Select 4 categories: 3 each

Key Stats: None

Professional Abilities: A Dilettante gains a +10 bonus to one skill of their choice from any of their Favored Categories (except General).

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Dilettantes gain a +10 bonus to any one General skill of their choice. No General skill can have more than a +30 bonus from this ability.

Entertainer

Entertainers are the ultimate performers and artists. Some harness their creativity through music, painting, sculpture, or writing. Others need the appreciation of audiences, large and small, and become athletes, actors, dancers, and holovision stars. For many Entertainers, fame is their only goal.

Favored Categories:

Artistic:	6	**Influence:**	4
Athletic:	3	**Physical:**	2
General:	4	**Subterfuge:**	1

Key Stats: Agility, Insight and Presence.

Professional Abilities: Entertainers may choose one of the following talents: Artistic Training, Enhanced Senses, Extremely Nimble, Good Memory or Natural Linguist.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Entertainers gain a +10 bonus to any one Artistic skill of their choice. No Artistic skill can have more than a +30 bonus from this ability.

Fusion

The Fusion combines the paranormal training of an Adept with the skills set of another specialty, such as Entertainer, Merchant, Pilot, Researcher, Scout, Soldier, Spy or Tech. The hybrid education is extremely demanding and few have the innate ability necessary to bridge two areas of expertise. The Fusion is a set of eight variant professions rather than a single profession.

Favored Categories:

See The Fusion Table

Key Stats: Presence, Self Discipline, and one or more other stats as specified in the Fusion Table

Professional Abilities: At 1st level, all Fusions gain one Latent Psionic Field Talent. (The SysOp determines which Fields are available in the setting.)

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Fusions gain a +5 bonus to any one skill of their choice from the categories specified in the Fusion Table. No skill can have more than a +30 bonus from this ability.

The Fusion Table								
Favored Categories	**Fusion Specialty**							
	Entertainer	**Merchant**	**Pilot**	**Researcher**	**Scout**	**Soldier**	**Spy**	**Tech**
Artistic	4							
Athletic	2		2			2	2	
Combat			2		2	4		
Concentration	4	4	4	5	4	4	4	5
General	6	6	6	6	6	6	6	6
Influence	2	4					2	
Outdoors					4			
Physical	2	2	2	2	2	4	2	2
Scientific				5				2
Subterfuge		2			2		4	
Technical				2				5
Vehicular		2	4					

Additional Information		
Fusion Specialty	**Additional Key Stats**	**Category Bonuses**
Fusion: Entertainer	Agility and Insight	Artistic and Concentration
Fusion: Merchant	Insight and Reasoning	Concentration and Influence
Fusion: Pilot	Agility, Insight, and Quickness	Concentration and Vehicular
Fusion: Researcher	Insight and Reasoning	Concentration and Scientific
Fusion: Scout	Agility, Constitution, Insight, and Strength	Concentration and Outdoors
Fusion: Soldier	Agility, Constitution, Quickness, and Strength	Combat and Concentration
Fusion: Spy	Agility, Insight, and Strength	Concentration and Subterfuge
Fusion: Tech	Agility, Insight, and Reasoning	Concentration and Technical

Merchant

Merchants are the traders of the galaxy, buying and selling goods, services, information and ideas for profit and advantage. They excel in the many arts of persuasion and are equally comfortable in social interactions with individuals and groups.

Favored Categories:

General:	6	**Scientific:**	**2**
Influence:	6	**Subterfuge:**	2
Physical:	2	**Vehicular:**	2

Key Stats: Insight, Presence and Reasoning.

Professional Abilities: Merchants may choose one of the following talents: Calming Voice, Judge of Value, Natural Linguist, Quick Calculator or Xenophile.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Merchants gain a +10 bonus to any one Influence skill of their choice. No Influence skill can have more than a +30 bonus from this ability.

Pilot

Pilots are the masters of speed. Lightning-fast reaction times, perfect hand-eye coordination and a supreme unconscious awareness of their environment allow Pilots to become one with their vehicle and succeed at daredevil stunts with grace and style. On planets, they drive fast cars, steer swift speedboats, and fly fighter jets. In space, they may serve as ordinary crewmembers, but will aspire to be Astrogator, starfighter pilots, or starship captains.

Favored Categories:

Athletic:	2	**Physical:**	2
Combat:	3	**Technical:**	3
General:	3	**Vehicular:**	7

Key Stats: Agility, Insight, and Quickness.

Professional Abilities: Pilots may choose one of the following talents: Instinctive Evasion, Lightning Reflexes, Natural Astronaut, or Natural Gunner.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Pilots gain a +10 bonus to any one Vehicular skill of their choice. No Vehicular skill can have more than a +30 bonus from this ability.

Researcher

Researchers are the thinkers, theorists, and experimenters of the universe. Some Researchers seek to understand the mysteries of the cosmos, and apply their knowledge in laboratories and in the field as doctors, physicists, chemists, and biologists. Other Researchers are writers, teachers, and academics, favoring less technical branches of knowledge such as history, cultural studies, and cosmography. All are skilled in collating information and finding the unexpected synergies between isolated facts.

Favored Categories:

Artistic:	2	**Scientific:**	8
General:	6	**Technical:**	2
Physical:	2		

Key Stats: Insight and Reasoning.

Professional Abilities: Researchers may choose one of the following talents: Academic Specialization, Good Memory, Physician, Scientific Specialization, or Speed Reader.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Researchers gain a +10 bonus to any one Scientific skill of their choice. No Scientific skill can have more than a +30 bonus from this ability.

Scout

Scouts live for the frontier, seeking to discover new worlds, new civilizations, new races, or new resources. The last great outdoorsmen, Scouts are the paramount survival experts in hostile environments, wilderness guides in unknown territories, and planetary explorers.

Favored Categories:

Athletic:	1	**Subterfuge:**	2
Physical:	2	**General:**	3
Combat:	4	**Vehicular:**	2
Outdoor:	6		

Key Stats: Agility, Constitution, Insight, and Strength.

Professional Abilities: Scouts may choose one of the following talents: Alien Affinity, Enhanced Senses, Intuition, or Toughness.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Scouts gain a +10 bonus to any one Outdoors skill of their choice. No Outdoors skill can have more than a +30 bonus from this ability.

Soldier

Soldiers are the warriors of the future. Drawn to conflict and war, Soldiers may fight for the survival of their species, the honor of the corps, glory or personal gain. Soldiers are always found in the front-line of combat. As space marines, mercenaries, bodyguards, or thugs, there will always be a need for these combat specialists.

Favored Categories:

Athletic:	2	**Physical:**	6
Combat:	8	**Vehicular:**	1
General:	3		

Key Stats: Agility, Constitution, Quickness, and Strength.

Professional Abilities: Soldiers may choose one of the following talents: Lightning Reflexes, Martial Arts Training, Shield Training or Speed Loader.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Soldiers gain a +10 bonus to any one Combat skill of their choice. No Combat skill can have more than a +30 bonus from this ability.

Spy

Spies are the masters of subterfuge and deception, reconnaissance and infiltration. Spies find employment as secret agents or pursue careers as police officers, private investigators, bounty hunters, con artists or criminals according to their personal morality and circumstances.

Favored Categories:

Athletic:	3	**Influence:**	2
Combat:	3	Physical:	3
General:	3	**Subterfuge:**	6

Key Stats: Agility, Insight, and Strength.

Professional Abilities: Spies may choose one of the following talents: Enhanced Senses, Extremely Nimble, Judge of Value, Manual Dexterity, or Skill Specialization.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Spies gain a +10 bonus to any one Subterfuge skill of their choice. No Subterfuge skill can have more than a +30 bonus from this ability.

Tech

Techs are the consummate specialists in analyzing, designing, and repairing equipment, essential in any world with advanced technology. Some prefer working with gadgets; others master the virtual intricacies of software. If a device is broken, a Tech can fix it, if it ain't broke, they can make it better!

Favored Categories:

General:	4	**Technical:**	8
Physical:	2	**Vehicular:**	2
Scientific:	4		

Key Stats: Agility, Insight, and Reasoning.

Professional Abilities: Techs may choose one of the following talents: Computer Wizard, Fast Fixer, Improvisation, Machine Affinity, or Quick Calculator.

Beginning at first level, and then every fifth level thereafter (5th, 10th, etc), Techs gain a +10 bonus to any one Technical skill of their choice. No Technical skill can have more than a +30 bonus from this ability.

Multiple Professions

HARP SF allows a character the opportunity to add additional professions as he progresses in levels. Upon gaining a new level, a player may purchase the Talent Additional Profession (see Chapter 7), which allows him to add a level of another profession to his overall level. The character's overall level is the sum of all levels in any Professions that he has acquired.

Whenever a character obtains enough experience to advance his character level, he may freely choose which Profession to advance, or elect to add yet another new Profession, provided that the Additional Profession Talent is purchased again. A character is limited to adding only one new Profession each time they advance a level. Characters do not double their Development Points when adding a new profession.

Example: *Pieter is a 3rd level Adept. Upon attaining 4th level, Pieter decides that learning about mundane weaponry could be useful and obtains his first level as a Soldier. Pieter's player pays for the Additional Profession Talent and records Pieter's current status as Adept (3)/Soldier (1). For the purpose of calculating character level, Pieter is considered 4th level overall. Once Pieter obtains enough experience to advance to 5th level, he may increase his Adept level, increase his Soldier level or elect to add yet another new Profession. After some thought, considering his effectiveness in armed combat, Pieter decides to increase his level in the Soldier Profession. Pieter's player notes the change on his character sheet to Adept (3)/Soldier (2).*

Note: Special Professional abilities or perks are gained only when that particular Profession level is obtained. When a character has multiple professions the maximum bonus allowed from the combined professional bonuses is +30 to a single skill. If multiple bonuses are applied and the total is greater than +30, then anything above the +30 is lost.

Example: *Emilia, a Soldier (3)/Pilot (1), has just obtained enough experience to gain a new character level. Prior to gaining her new level, Emilia's player peruses the Professional Abilities of the Soldier. Noting that she stands to gain a +10 skill bonus to any Combat skill of her choice upon obtaining 5th level, the player decides to spend her advancement on her Profession as a Soldier. Unfortunately for her, the GM interrupts her daydreaming on which Combat skill to develop by pointing out that her total level in Soldier is only 4, even though her overall level is 5. Without an additional level in her Soldier Profession, the Combat skill bonus is still out of reach. The next Silth raiders can expect no mercy from Emilia!*

Note: *The Adept and Fusion professions give access to Latent and Active Psionic Field Talents as part of their professional abilities. This access is only available at first level. If a character begins his career as anything other than an Adept or Fusion, and then adds Adept or Fusion at second or higher-level, the character must take the level bonus ability as the professional ability gained through the Additional Profession Talent.*

Gaining Levels

As characters journey through space, explore strange worlds, make contact with new cultures, and participate in adventures, they will come to understand more about the universe around them, and their place within it. This self-advancement is reflected numerically as the SysOp awards Experience Points (XP) to characters for goals they have accomplished or trials they have overcome. These events could be something as mundane as transporting a cargo shipment safely from one solar system to another, or as elaborate as successfully making peaceful contact with a newly discovered alien species.

Once a character has obtained a set amount of Experience Points his level increases. The following table details the degree of XP required for each new level.

Table 3.1 Experience Progression

Level	XP Needed	Level	XP Needed
1	0	11	5750
2	350	12	6600
3	750	13	7500
4	1200	14	8450
5	1700	15	9450
6	2250	16	10500
7	2850	17	11600
8	3500	18	12750
9	4200	19	13950
10	4950	20	15200
		21+	+2500/lvl

Example: Owen, a Researcher, currently has 684 Experience Points and is considered 2nd Level. After completing a particularly arduous series of adventures, the SysOp awards him an additional 350 XP for extreme bravery in the face of adversity! Recalculating his character's Experience Point total, Owen's player notes that the new total is 1034 XP, enough to obtain 3rd Level, but not quite enough to reach the 4th.

Once a character has obtained enough XP to gain a level, he immediately receives his full complement of Development Points. These can be spent as the player wishes on Talents, skills, stat increases, Training Packages, or other options fully detailed below.

Should a player decide to purchase the Additional Profession Talent, allowing their character the opportunity to add a new Profession, the character's Favored Skill Categories will change as well to those of the new Profession.

Note: *Adding a new Profession may alter the Development Point cost of any skill rank purchased during this period. Make sure all cost changes are taken into account prior to a character acquiring new skill ranks!*

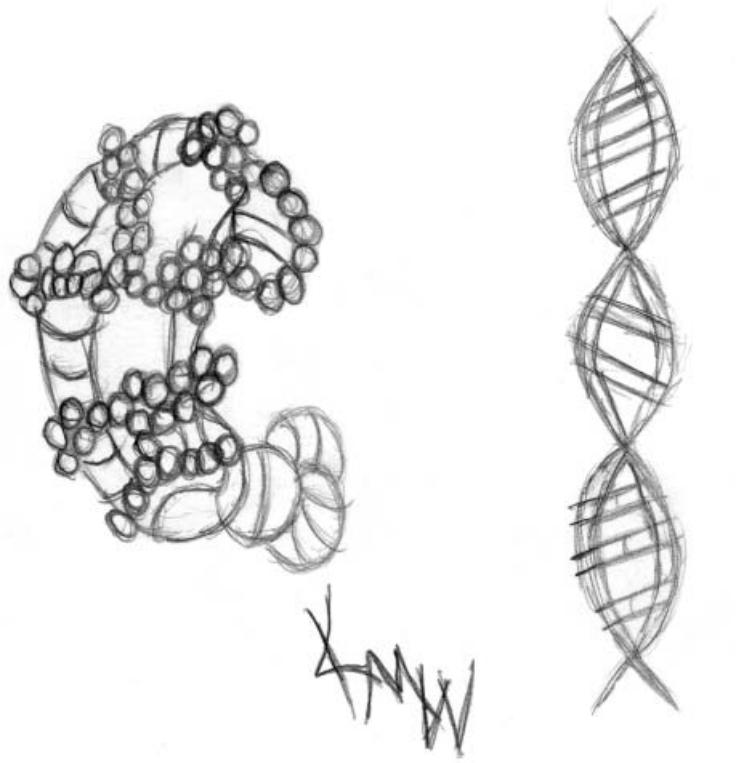
Level Up Check list

1. Calculate your character's Development Points.
2. Purchase talents, skills, stat increases, Training Packages etc. Be sure to keep track of these changes on your character sheet.
3. Recalculate any skill and stat bonuses that have changed.

Player's Tip – Character Development

Some SysOps may allow players to advance characters as soon as enough XP has been accumulated. Others may prefer to have the players wait until their characters reach a point in the game where the necessary resources to train are available. Players should always check with the SysOp on specifics regarding character advancement.

Character Statistics



HARP SF characters are defined by eight "stats" that represent a character's natural physical and mental abilities: Strength, Constitution, Agility, Insight, Quickness, Self Discipline, Reasoning and Presence. The numerical value of these stats can range from 1 to 105. Values over 100 represent extraordinary stats.

Select one of the 3 options detailed below to generate your character's starting stats. Assign the results to each stat as you see fit.

Tip: Each Profession values certain stats over the rest. If possible, place a starting value of 90 or higher in these stats.

Strength (St) – Not merely brute force, Strength is an estimation of a character's build and muscular structure. Characters with a high Strength are able to use their might to its fullest potential. This stat is favored by Soldiers of all types.

Constitution (Co) – Reflecting a character's general health and well-being, Constitution also helps determine stamina, resistance to poisons and diseases, and the ability to weather fatigue and wounds brought about by combat. Scouts value Constitution highly.

Agility (Ag) – Characters that exhibit outstanding feats of manual dexterity and hand-eye coordination have a high Agility. This stat is favored by Entertainers, Pilots and Spies.

Quickness (Qu) – A measure of reflexes and coordination, Quickness also determines the reaction time of a character. Characters with high Quickness values are more likely to act first in hazardous situations, have increased movement and are adept at dodging attacks. Pilots and Soldiers value Quickness the most.

Self Discipline (SD) – Representing inner resolve, dedication, and stubbornness, Self Discipline also helps determine a character's resistance to the machinations of others, and governs psionic potential. Adepts value Self Discipline the most.

Reasoning (Re) – The capacity for logical, rational, and analytic thought is governed by a character's Reasoning. Characters with high Reasoning scores seem to be particularly astute and are of sound sense and good judgment. Reasoning is prized by Researchers and Techs.

Insight (In) – Covering the intuitive faculties of a character, Insight is the capacity to discern the true nature of a situation. It also expresses a character's connection to, and understanding of, the universe around them. Entertainers, Researchers, and Techs prize Insight as the source of their creativity.

Presence (Pr) – A character's bearing, quality of self-assurance, and mien are reflected in his Presence. Those with high Presence scores are full of charm and wit, with a distinct force of personality. Presence also helps determine a character's ability to interact with and influence those around him. Entertainers and Merchants esteem Presence very highly.

1-100 Roll (1d100) – Most of the die rolls in HARP are percentile rolls. To obtain a random result from 1-100, roll the two dice together, counting one die as the "tens" place and the other as the "ones" place. Make sure you designate before the roll! Results of 00 are counted as 100.

Generating Stats

Option One

Make 8 percentile rolls until all results are at least 40 or higher. Assign the results to the stats as desired. This option generally produces a character with anywhere from 32 to 61(or more) Development Points.

Example: *After purchasing a copy of **HARP SF**, Steve races home to sit down and create his first character. Selecting human as his Race, and Soldier as his Profession, he goes about generating his character's statistics. On a scratch piece of paper, he records his 8 rolls: 41, 75, 70, 97, 83, 91, 98, and 52. Noting that the Soldier Profession has four Key Stats (Strength, Constitution, Agility and Quickness), he makes sure to place his highest four rolls in those attributes, distributing the remaining values as he sees fit. His stats eventually end up looking like this:*

St:	91	**SD:**	52
Co:	83	**Re:**	75
Ag:	98	**In:**	70
Qu:	97	**Pr:**	41

Example, Cont'd: *With his stats in place, Steve looks his character over. Satisfied, he moves on to perusing the available cultures. From his stats we can determine that his character has excellent coordination and reactions, as well as being very strong and healthy. The character is quite smart and intuitive, but is lacking in self-control and is ill at ease with people.*

Option Two

With this method, a character has 550 points to purchase their 8 stats. All stats start at zero, but can be bought up on a point-for-point basis, unless the desired stat value is 91 or higher. Use the table below to determine the cost per stat point.

Stat Range	Cost per Point
1–90	1
91–95	2
96-100	3
101-105	10

Example: *Dave wants his first character to be a Researcher. Knowing that Researchers rely upon Reasoning as one of their primary stats, he decides on a Reasoning of 96. To raise his character's Reasoning from 0 to 90 costs 90 points. To raise his stat from 90 to 95 will use up 10 more points (5 x 2 = 10). Then to raise it that last point to 96 will use an additional 3 points. Overall, for his character's Reasoning value of 96, Dave has spent 103 of his original 550 points.*

This method produces a solid character with Development Points received ranging anywhere between 32 to 42.

Option Three

With this method, a player has 500 plus 10d10 points to spend on purchasing his initial stats. This particular method could produce a character with 600 points (should a player be lucky enough to roll all 10's), or one with a starting pool of only 510 points (should the dice all come up 1's). Refer to the table in Option Two for the cost of raising stats.

Example: *Shelley is creating a Scout for a new campaign. With 10d10 in hand, she rolls and comes up with a 1, 4, 8, 9, 9, 8, 7, 1, 6, and 3. Adding them all, she notes that she has 558 (500 plus the 58 she rolled) to distribute among her character's stats.*

Stats for Normal Characters

The HARP SF character creation rules are intended to create heroes and extraordinary individuals. When creating more mundane Non-Player Characters, the SysOp should use a base stat value of 40 + 2d10 to represent an average, run-of-the-mill individual.

By their very nature, Player Characters and particularly capable Non-Player Characters are exceptional individuals with stats that are much higher than those of the average person.

Stat Bonuses & Development Points

Each stat receives a bonus based upon its value. These bonuses, plus any other applicable stat bonuses, are used when calculating skills' values or when making Resistance Rolls. The following table details the bonuses for each stat rating and notes the number of Development Points awarded. (Players should round up their *total* number of Development Points, e.g. if a character receives a total of 45.75 DPs, this should be rounded up to 46 DPs.) This information should be recorded on your character sheet.

Development Points are used to purchase any number of special options, Talents, skill ranks or stat increases each time a character advances one level. All Development Points must be spent when they are gained; any unspent Development Points are lost. Many talents and options may be purchased across multiple character levels, meaning a character may begin to pay for a Talent at one level, and then meet the remaining cost on the subsequent level or levels later on in their adventuring career.

Note: Characters gain 2x their total development points at first level.

Note: Once a Talent has been chosen and partially paid for, you may not spend Development Points on anything else until that particular option is completely paid for.

Table 4.1 Development Point and Stat Bonuses

Stat	Bonus	DPs	Stat	Bonus	DPs
1-5	-18	0.25	66-70	4	4
6-10	-16	0.25	71-75	5	5
11-15	-14	0.5	76-80	6	6
16-20	-12	0.5	81-85	7	7
21-25	-10	0.5	86-90	8	8
26-30	-8	0.5	91-95	9	9
31-35	-6	0.75	96-100	10	10
36-40	-4	0.75	101	11	11
41-45	-2	0.75	102	12	12
46-50	0	0.75	103	13	13
51-55	1	1	104	14	14
56-60	2	2	105	15	15
61-65	3	3	-	-	-

SysOp's Choice: Zero DPs for Stats Below 51

In the HARP (Fantasy) core rulebook, any stats with a value of 50 or less are awarded zero Development Points. SysOps who wish to maintain consistency with HARP Fantasy may wish to consider awarding zero Development Points for stats below 51. Note, however, this means that a character with completely average values (i.e. 50) in all stats will have **no** Development Points at all.

Increasing Stats

Some players may not be completely satisfied with a character's starting stats. By spending Development Points, a player may increase the value of a stat. The following table details the DP cost for raising stats. A character may not spend more than 20 DP on stats at each level.

Stat Range	Cost per Point
1 – 90	1
91 –95	2
96-100	3
101-105	10

Example: *Geoff's character has a starting Quickness of 80. With Development Points to burn, Geoff wants to raise his character's Quickness to 100. It will cost him 10 points to raise his Quickness from 80 to 90 and then another 10 points to raise it from 90 to 95. Overall, Geoff has spent 20 Development Points increasing his Quickness. He will have to wait until next level to finish raising his Quickness.*

Note: When raising a stat, you should make the changes to the character sheet first, and then check to see if the increase offered a boost to the stat bonus or to Development Points received. Should the advancement increase the stat bonus, it will affect the total bonuses to skills and any other aspects of your character that may be affected by stat bonuses. If the advancement increases your Development Points, note the change on your character sheet. However, changes do not affect the amount of Development Points you have available for the current level of advancement. Increases to Development Points come into effect the next time the character gains a level.

Characters can also use their Development Points to raise their stats when they go up levels. All of the rules above apply to stat increases at later levels.

4.2 Stat Gain Rolls

d100 Roll	Stat Range				
	01-50	51-75	76-90	91-99	100+
01-50	No change	No change	No change	No change	No change
51-75	+1	No change	No change	No change	No change
76-90	+2	+1	No change	No change	No change
91-95	+3	+2	+1	No change	No change
96-98	+4	+3	+2	+1	No change
99-00	+5	+4	+3	+2	+1

SysOp's Choice: Stat Gain Rolls after First Level

SysOps will have noticed that there is a virtuous spiral of improvement which can be achieved by spending Development Points to increase stat values and in turn increasing the number of future Development Points available to the character. In some gaming groups, this can lead to ever-increasing stats and for high-level characters to look similar in terms of their stats. One way of preventing this problem is to disallow spending Development Points on stat raising after first level. Instead characters make stat gain rolls at the start of each level (beginning at 2nd level) and these rolls determine whether the stats remain at their existing value or increase.

Beginning at 2nd level, and every level thereafter, and before any Development Points have been expended for the new level, roll d100 (not open-ended) for each stat in turn. Compare the dice roll with the table below, increasing the stat by the number indicated. Once stat gain rolls have been made for all the stats, recalculate the Development Points and proceed with level advancement.

Example: *Steve's character has reached 2nd level. His player begins making stat gain rolls. His Strength is currently at 76 so he is using the third table column (76-90). He rolls a 61 and reads across the 51-75 row to the third column, and gets the "No change" result. His character's Quickness is at 91, which is in the fourth column (91-99). He rolls 97, so reads across from the 96-98 row and finds a "+1" result. His character's Quickness stat is increased from 91 to 92.*

SysOp's Choice: Fixed DPs per Level

Some SysOps may prefer to entirely decouple stats and Development Points, avoiding completely issues of stat improvements increasing available Development Points and enabling characters to have the stats that fit the character, rather than optimizing stats for maximum Development Points. In this option, all characters receive 100 Development Points at 1st level and 50 Development Points at each level above first, regardless of their stats.

Races & Cultures

In HARP SF, characters can be Humans or members of diverse alien species. Each sentient species has a number of racial advantages and special abilities. In addition, characters may also be members of genetically engineered variant subspecies, which have been deliberately adapted to survive in hostile environments. To benefit from genetic modification, the player must spend Development Points towards purchasing the Genetic Talent(s).

Table 5.1 Species Characteristics

Race	Species Stat Modifiers								Endurance	Power Points	Psi Energy Points	Resistance Bonuses		
	St	Co	Ag	Qu	SD	Re	In	Pr				Stam	Will	Magic
Ceran	3	3	0	0	0	2	0	3	35	30	5	15	5	10
Gorsiva	0	1	4	2	1	2	0	0	25	30	15	5	15	10
Human	+*	+*	+*	+*	+*	+*	+*	+*	30	30	10	10	10	10
Krakur	0	0	3	2	2	2	0	2	20	30	20	0	20	10
Madji	0	2	2	2	2	0	2	0	30	30	10	15	5	10
Runcori	0	0	0	0	3	3	3	0	20	40	10	5	5	20
Silth	3	2	2	2	0	0	0	2	40	25	5	20	10	0

* = Humans do not have fixed racial bonuses. Players of a human character have 8 points to divide any way they like between the 8 racial stat bonuses. No stat may have a bonus greater than +3.

Genetic Talents allow for player characters to come from variant subspecies of the main species. Chapter 7 covers the abilities gained through such Talents in detail.

Species Characteristics

Once you have selected your character's species, record the information below on your character sheet. This table details the bonuses and features for each of the HARP SF species. An explanation of the items included on the table can also be found below.

Species Stat Modifiers – These racial modifiers are added to the character's natural stat bonuses and should be recorded in the proper column on the stats section of the character sheet.

Endurance – Endurance is the amount of damage (or "concussion hits") a character can endure. This bonus is added to the character's Endurance skill when figuring the character's total Concussion Hits. See Chapter 6 for the full description of this skill.

Power Points –Power Point Development is used to calculate the number of Power Points available to a caster in settings where magic is real. These Power Points are what the caster would use to cast any spells that they know. This bonus adds directly to the skill and helps determine the character's total number of Power Points. This characteristic is included for completeness.

Psi Energy Points –Psi Energy Development is used to calculate the number of Psi Energy Points available to a character in settings where psionics are permitted. These Psi Energy Points are used in the activation of any Disciplines that the character knows. This bonus adds directly to the skill and helps determine the character's total number of Psi Energy Points. See chapter 6 for the full description of this skill and chapter 11 for full details on psionics.

Resistance Bonuses - Some species are naturally able to shrug off the effects of wounds and fatigue, weariness of the mind, psionics and magic more easily than others. These species bonuses are added to the proper Resistance skill (see Chapter 6) whenever a Resistance Roll is made.

- **Stamina** – This species bonus helps resist the effects of poisons, diseases, and other physical ailments. This bonus is added to the Resistance: Stamina skill.
- **Will** – This species bonus helps resist mental effects such as those caused by psionic abilities and some spells. This bonus is added to the Resistance: Will skill.
- **Magic** – This species bonus helps resist effects that are magical in nature (outside of spells that affect the mind, as above). This bonus is added to the Resistance: Magic skill. It is included for completeness.

Species Descriptions

All species descriptions include the following information:

Appearance: This describes the overall appearance of a typical member of the species.

Biology: This provides a summary of key biological facts and environmental preferences relating to the species.

Demeanor: This notes the general outlook and psychology of the majority of the species. Not all individuals will conform to this stereotype – and indeed those who do not are the most likely to become player-characters!

Technology: Specific notes on any particular technology favored, required, or avoided by the species.

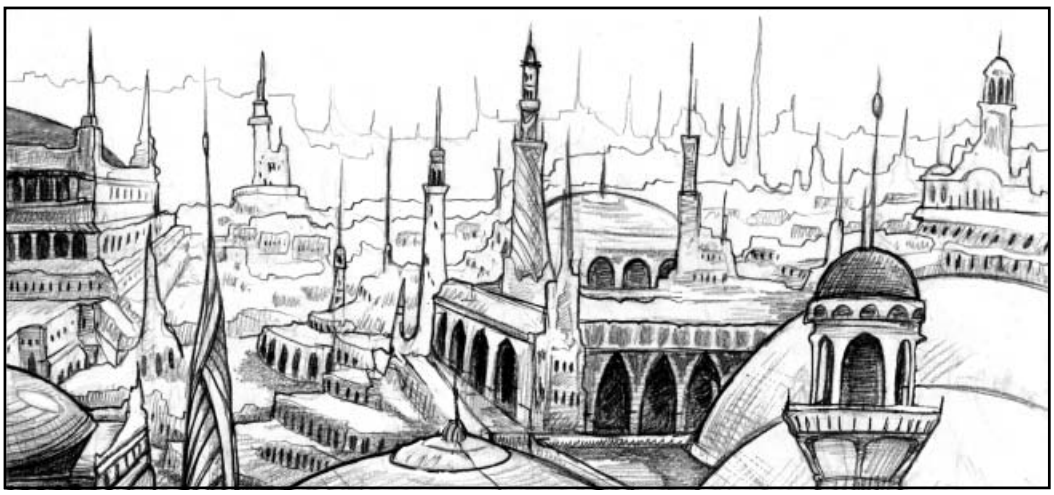
Lifespan: The average lifespan for members of the species.

Culture: Although a character may hail from any culture, each species also lists one or more default cultures. These listed cultures represent only the most common backgrounds of the race. One or more of the species' principal languages are also listed.

Special Abilities: This section details any special abilities members of the species possess. Also, unless otherwise noted in this section of the racial details, all species require a full eight hours of rest each night.

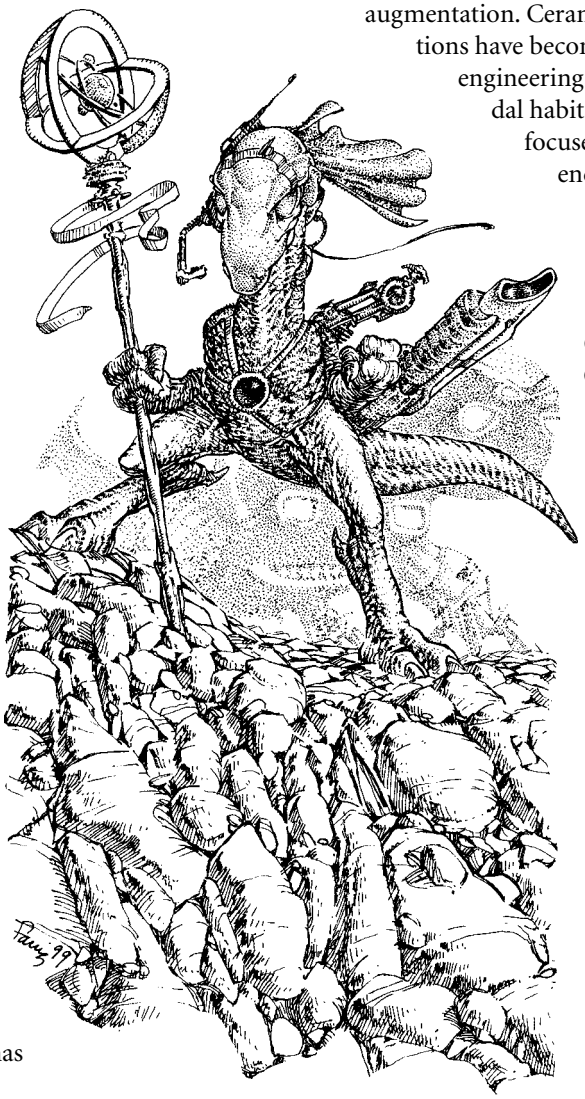
Species Limitations: This section details any special weaknesses that the species may have. Only races with more than three special abilities may have these limitations.

DP Cost: Some species are more powerful than average races, because they have more than three special abilities but lack any Species Limitations. For such races, players must spend Development Points in order for their characters to belong to the chosen species.



Cerans

Appearance: The Cerans are large and very muscular reptilian bipeds. An average Ceran is well over two meters tall; many reach two and half meters in height. A Ceran has a very thick hide, which varies in color from light browns and greys to a rare pure white. A Ceran's legs end in outsized flat feet (without toes). Cerans have two arms, each of which terminates in a large hand with three fingers and one thumb. The Ceran neck flares out in a large collar from the bottom of their skull reaching to their shouldertips at the sides and equally far forward and back. A Ceran has two big forward-facing eyes, which flank a central oval membrane that allows Cerans to sense heat. Two curved vestigial horns emerge from the skull above the eyes. Below the thermal membrane is a sharp protruding beak incorporating three nostrils for breathing and the sense of smell. The third straight vestigial horn grows out of the beak. Cerans have no obvious external ears – instead they have two small ear pits, one on either side of the head covered by thinner hide, which focus sound into their internal ears.



Biology: Cerans are a warm-blooded omnivorous species whose evolutionary ancestors survived a mass extinction several million years ago caused by an asteroid impact. Cerans have two sexes and give birth to live young rather than laying eggs. Cerans take thirty years to mature to full adulthood. The Ceran birthrate is low. Single conceptions are normal, twins are rare, triplets unheard of. Ranoc is the Ceran homeworld, orbiting its G3 sun at an average distance of 0.9 astronomical units. Although it has a normal oxygen-nitrogen atmosphere, the quantity of greenhouse gases is lower than average rendering Ranoc susceptible to prolonged glaciation and making it a cold world even today. Cerans evolved full intelligence and developed civilization after the ending of Ranoc's most recent Ice Age, only fifteen thousand years ago.

Demeanor: Cerans are a proud race with a strong sense of territory, not only of physical space, but also of social and intellectual space. Individuals are frequently brash and confrontational, and will aggressively establish and maintain their rights. Much of this conflict is resolved by verbal disputation, but Ceran societies have developed elaborate formal dueling rituals to minimize mass physical violence. Cerans are fiercely protective of their young (and indeed the young of any sentient species) and the family is the cornerstone of all Ceran communities.

Technology: Ceran technology is most advanced in information technology, cybertech, space travel, and practical astronomy (especially orbital tracking of comets and asteroids). Many Cerans receive cyber augmentation. Ceran governments and corporations have become interested in planetary engineering, initially to construct asteroidal habitats. Recent emphasis has focused on techniques that might end the cycle of Ice Ages and transform Ranoc into a less marginal world.

Lifespan: An average Ceran lifespan is 150 years.

Culture: Ceran societies favor Cosmopolitan or Frontier cultures, but Aristocratic and Belter cultures are not uncommon. Ceranor is the major language.

Special Abilities:

Cold Resistance (minor) – The cold climate of their homeworld has given the Cerans a significant tolerance to natural cold. In game terms, this is equivalent to lowering the temperatures at which Stamina RRs must be made by 20 degrees Celsius (i.e. to –16 and –38).

- **Heat Sense** – Cerans can detect the presence of creatures and objects, which have temperatures higher or lower than the surroundings. Range is limited to 10m.

Tough Hide (Minor) – Cerans receive a +20 bonus to DB from their tough hide

Species Limitations: None

DP Cost: None

Gorsiva

Appearance: Gorsivans appear to be one-meter tall slender humanoids. A closer inspection reveals their avian nature: pinioned feet and downy feathers in gorgeous red, green and golden hues covering most of their body, hollow bone structure and a prominent beak on the front of their heads. Above the beak are two forward-facing eyes. At the same level as the eyes are two small external ears positioned on the opposite sides of the head. The Gorsivan sense of taste is located on a tongue inside their beak but they do not breathe through their beak. Instead Gorsivans breathe and smell through a set of slits located at the juncture of their neck and chest. Due to a flexible bone and cartilage structure, a Gorsivan can rotate its head around 360 degrees, allowing the Gorsivan to look behind (or up and down when flying) without turning the rest of its body around. Gorsivan arms are long (usually 75cm) and end in six-fingered hands with the two outermost digits functioning as opposable thumbs. Running along the underside of each arm are inflatable membranes. By inhaling deeply, a Gorsivan can expand these flaps to form large thin wings, giving the species the ability of flight and their nickname (the "Gliders").

Biology: Gorsivans are a warm-blooded oxygen-breathing species. By preference, Gorsivans are nectivores, drinking the nutritious nectars of the giant blossom trees of their homeworld. In practice, Gorsivans are pragmatic omnivores. Gorsivans have two sexes and reproduce by laying eggs. Gorsivans reach maturity in twenty years, but can glide effectively by the age of five. Their homeworld of Siva is a 0.8g world orbiting a G4 sun at 1.2 astronomical units.

Demeanor: Gorsivans are naturally curious. Having mastered their own planetary environment, Gorsivans have the confidence exhibited by members of any enduring advanced civilization. Some individuals can tend towards smugness, and even a touch of arrogance. Among their leaders, however overconfidence is a more common fault. Like all winged species, their favored pastime is to glide effortlessly on rising updrafts.

Technology: Gorsivan expertise has concentrated on genetic engineering and biotechnology. They have altered the blossom trees so that homes, shops, and offices are grown directly in the tree structures, creating natural settlements in the forests. Instead of mining, they employ genetically engineered plants to extract desired minerals and store them in their leaves. Their technology is a sleek fusion of manufactured and naturally produced materials in harmony with the biosphere. Gorsivans do not build robots or augment themselves using cybertechnology.

Lifespan: Gorsivans live an average of 120 years with suitable medical care.

Culture: Gorsivan societies are Cosmopolitan, Scientific or Frontier cultures. The principal language is Gorresh.

Special Abilities:

- Flight – Gorsivans can glide in environments where the gravity is 1g or less and the winds are favorable. Their Base Flight Rate (BFR) is twice their Base Movement Rate on the ground. Gorsivans can also fly or hover (albeit clumsily, and at half their BFR) in contrary winds or in the absence of a breeze. They may use pace multipliers if the gravity is 0.8g or less. Flight is tiring, so Gorsivans may only stay aloft a maximum number of hours equal to their total Constitution bonus. For each encumbrance level above Light, their BFR is reduced by half, and so is the amount of time they may stay aloft (i.e. Medium encumbrance = ½ normal BFR and time aloft. Heavy encumbrance = ½ BFR and time aloft). Gorsivans gain a bonus of +50 to the Flying/Gliding skill. Inflating the wing membranes takes five rounds.
- **Low Pressure Tolerance** – Gorsivans can fly at extremely high altitudes thanks to an evolutionary adaptation that allows them to survive in low atmospheric pressure environments. A Gorsivan receives a +50 bonus to all Stamina RRs and CRRs against low pressure effects.
- **Telescopic Eyes** - Gorsivans can enhance a feature in their field of vision, magnifying it several times at the expense of everything else in the field of view. The process takes a round to focus in on the target and grants a +20 bonus to Perception maneuvers involving the target. This also allows Gorsivans to perform Sniping attempts at 4 Range Increments from a target. While focused, the Gorsivan suffers a –20 modifier to Perception maneuvers relating to other features or targets.

Species Limitations: None

DP Cost: None

Human

Appearance: Humans are a bipedal race, with males averaging 185 cm in height and females 170 cm. Body shape, size, skin and hair color varies widely.

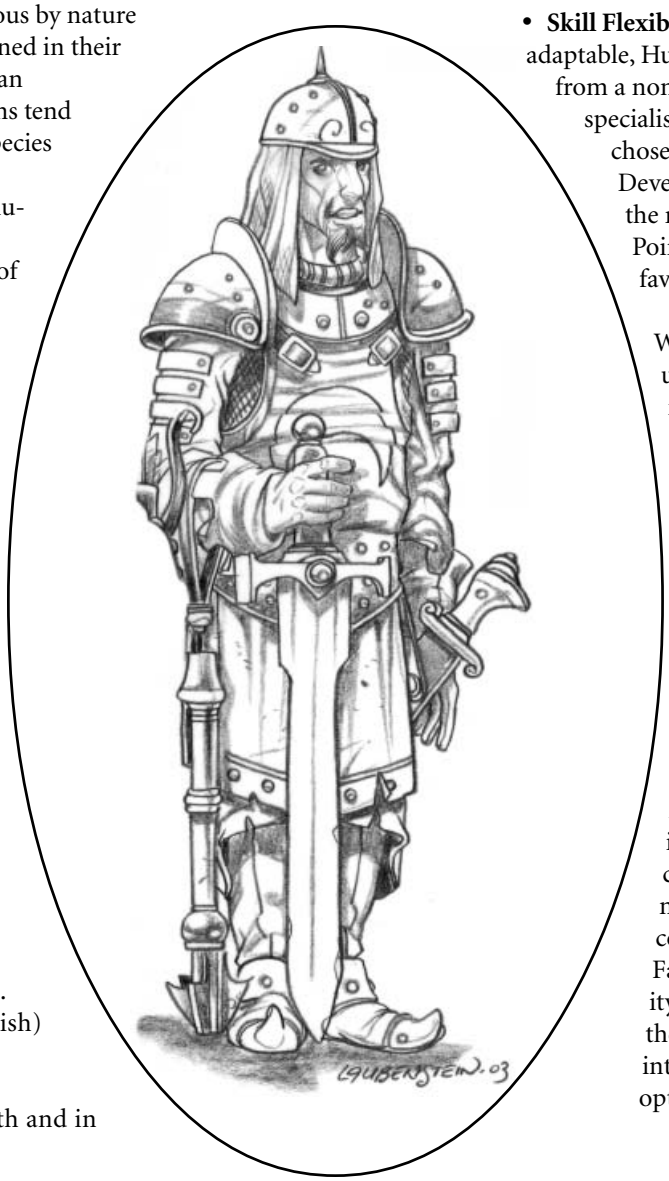
Biology: Humans are omnivorous, diurnal oxygen-breathers, descended from cursorial hunters. They are mammalian, giving birth to live young who must be nurtured for almost two decades before reaching adulthood. Earth, humanity's homeworld, is a 1g world with an oxygen-nitrogen atmosphere and a range of climate zones.

Demeanor: Humans are curious by nature and generally well-intentioned in their dealings with others. With an expansionist streak, Humans tend to boldly go where other species would tread cautiously. Humans easily form communities of like-minded individuals, but have a history of rivalries between such communities (tribes, nations, worlds, etc.) leading to conflict, even war.

Technology: Humanity is willing to experiment with any form of technology. Humans are particularly well-versed in computer technologies, gravity control, and medical sciences.

Lifespan: With reasonable medical care, average human lifespans routinely exceed 100 years.

Culture: Humans can come from any culture, but Cosmopolitan, Frontier, Corporate, and Belter are the most common origins. Anglic (an expanded English) is the principal human language, but many other languages flourish on Earth and in the extrasolar colonies.



Special Abilities:

- **Bonus Skill Ranks** – Humans excel in learning skills at a young age. Their astute nature merits a one-time bonus of 5 ranks, which may be spent on skills found in any of the character's Favored Categories (See Chapter 3 Professions for details on Favored Categories).
- **Profession Adaptability** – Being extremely adaptable, all Humans receive a 5 point discount on the number of Development Points necessary for a change of Profession, requiring only 15 points instead of the normal 20.
- OR
- **Skill Flexibility** – Being extremely adaptable, Humans can select any one skill from a non-favored category as a specialist interest. Ranks in the chosen skill may be purchased at 2 Development Points rather than the normal 4 Development Points for skills within a non-favored category.
- **Skill Specialization** – With minds capable of unwavering focus, Humans may select one skill during character generation to receive a +10 bonus.

Species Limitations: None.

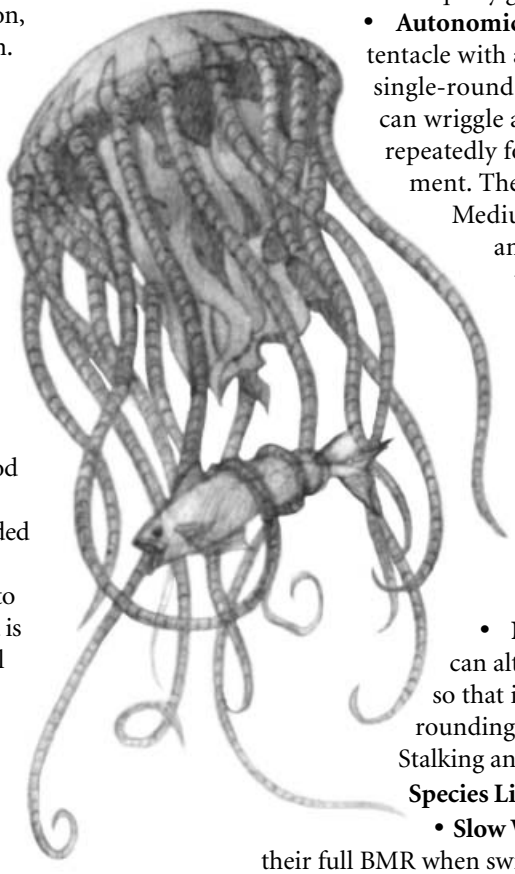
DP Cost: None

SysOp's Note: Profession Adaptability versus Skill Flexibility

Human characters must choose either Profession Adaptability or Skill Flexibility as a special ability during character creation. They may not take both. For full compatibility with HARP Fantasy, Profession Adaptability should be chosen, unless the SysOp/GM is willing to introduce Skill Flexibility as an option in the fantasy game.

Krakur

Appearance: Krakuren (singular: Krakur, nicknamed Hexapods or "Pods") have an ovoid main body approximately one meter tall and fifty centimeters in diameter. Female Krakuren are larger (60 cm in diameter) than male Krakur. Four tentacles (each one meter in length) are connected to the bottom of the body and serve as "legs" for swimming and motion on land. A further pair of tentacles (approximately 75 cm in length) act as "arms" with one on each side of the body, about halfway up. The four suction pads on the manipulator tentacles are very flexible and strong, giving Krakuren a high degree of manual dexterity.A Krakur's skin is partially transparent (so cartilage and some organs are visible to onlookers), but Krakuren can consciously trigger pigment organs close to their skin, enabling a Krakur to change skin color to match the surroundings, whether on land or underwater. The upper portion of the ovoid functions as the Krakur's head with four equidistant eyes providing a 360-degree arc of vision, two bumps on the side of the head (in line with the manipulator tentacles) that are actually cartilaginous ears, and a large oval mouth orifice used for respiration, consuming food and communication.



Biology: Krakuren are an invertebrate species – their cartilaginous internal structure provides a modicum of rigidity to protect and support vital organs. They are amphibious omnivores , able to breathe atmospheric oxygen or extract it from water. A Krakur can detach its tentacles at will; a separated tentacle can perform very simple actions autonomously for up to one minute, long enough to distract most predators while the Krakur makes good its escape. Krakuren can grow new tentacles. Krakuren are a warm-blooded species who give birth to live young. Immature Krakuren require 25 years to reach full adulthood. Their childhood is mostly spent underwater. The original Krakur homeworld of Tamazek is a 0.9g planet with an oxygen-nitrogen atmosphere, orbiting a G7 sun at 1.1 astronomical units.

Demeanor: The Krakuran is a highly inquisitive individual, interested in unraveling mysteries, discerning secrets, and poking its manipulators into places that other sentients would prefer remain private. Krakuren are not heedless of danger – they simply believe that they can always wriggle out of harm's way. Krakuren prize applied technology and abstract thought. The Krakuren claim to have a sophisticated and subtle sense of humor; their detractors would say that it is merely incomprehensible. Krakuren make fine explorers as well as engineers and philosophers, but they are not interested in colonization or conquest, preferring to recreate the environment of Tamazek in specially designed orbital habitats rather than laboriously altering planetary ecosystems to suit them.

Technology: Space travel, space habitats and related fields have long been the focus of Krakuren technologists. Although Krakuren make significant use of information technology, they have little interest in artificial intelligence and cybertech, and these are almost unknown in Krakur society.

Lifespan: An average Krakur can expect to live 150 years.

Culture: Krakuren societies are towards Belter, Exotic and Scientific cultures. Principal languages are Old Kraka and New Kraka.

Special Abilities:

- **Amphibious** – Krakuren function equally well on land or underwater as their lungs can function in both environments and their body is resilient to high pressure. Their vision is equally good in air and water.
- **Autonomic Limbs** – A Krakur can imprint a tentacle with a simple action and detach it as a single-round action. The separated tentacle can wriggle around or perform a single action repeatedly for up to one minute after detachment. The maneuver can be no harder than Medium and the tentacle does **not** add any skill bonus to the roll, e.g. a tentacle could repeatedly squeeze a trigger but not aim the weapon. The Krakur regenerates the lost tentacle naturally in 10 + d10 days.
- **Multiple Eyes** – Krakuren have four eyes spaced equidistantly around their heads. Krakuren characters suffer no penalties when attacked from the flank or rear.
- **Natural Camouflage** – A Krakur can alter the color pigments in his skin so that it matches the hues of the surroundings. This grants a bonus of +25 to all Stalking and Hiding attempts.

Species Limitations:

- **Slow Walkers** – Krakuren only have their full BMR when swimming, climbing or swinging from point to point (tree branches, climbing rails, etc.). If forced to "walk" on the ground, Krakuren must slither at one-quarter BMR.

DP Cost: None

Madji

Appearance: Madji are short pudgy bipeds, averaging 125cm in height with a half-meter long prehensile tail. Madji are completely hairless. Their tough smooth skin varies in color from bright pink through to deep red. Madji limbs end in paws with seven digits. On the handpaws, the outermost digit is a large thumb. Madji have relatively large heads with rounded faces. They have three large eyes, one on the left side of their face, one forward facing and one on the right side. Their eyes can see light wavelengths in both the human visible and near ultraviolet portions of the spectrum. Beneath the middle eye is a small mouth, under the other two eyes they have sets of breathing slits rather than cheeks.

Biology: Madji are warm-blooded oxygen-breathing herbivores. Young Madji are born live in a neuter phase and take twenty-five years to reach maturity. Some Madji change gender at this point to become males or females; the rest remain neuters and become caretakers of the younglings. By preference, Madji live in large family clans. The Madji homeworld, Ji'mad'ji, orbits a red dwarf sun at a mere 0.1 astronomical units. Ji'mad'ji is a tidally locked 1g planet. Like most red dwarfs, Ji'mad'ji's sun is a flare star that frequently emits high quantities of ultraviolet radiation. Although the Madji are resilient to radiation, their ancestors constructed underground burrows to escape its worst effects and to rest away from the eternal daylight.

Demeanor: Madji are industrious and highly cooperative by nature. They commit themselves fully to achieving the goals of the clan (or the team). The flip side is that Madji expect their clan (or team, including non-Madji colleagues and friends) to support them – one for all *and* all for one. Madji are strongly motivated to outdo the performance of rival groups. This intense rivalry can occasionally spill over into violent conflict but this is the exception rather than the rule. Madji would rather build than destroy.

Technology: Madji technology has always emphasized satisfying the practical needs of the race. The Madji are pre-eminent in the arenas of advanced agriculture and food engineering. Planetology, physics, and shield technology are also highly advanced among the Madji as a natural consequence of their unusual home world. Although they can now shield their settlements from harmful radiation by technological means, Madji still prefer to build underground.

Lifespan: Madji can live for 140 years.

Culture: Madji societies are normally Cosmopolitan or Frontier cultures. The principal language is Madji'aon.

Special Abilities:

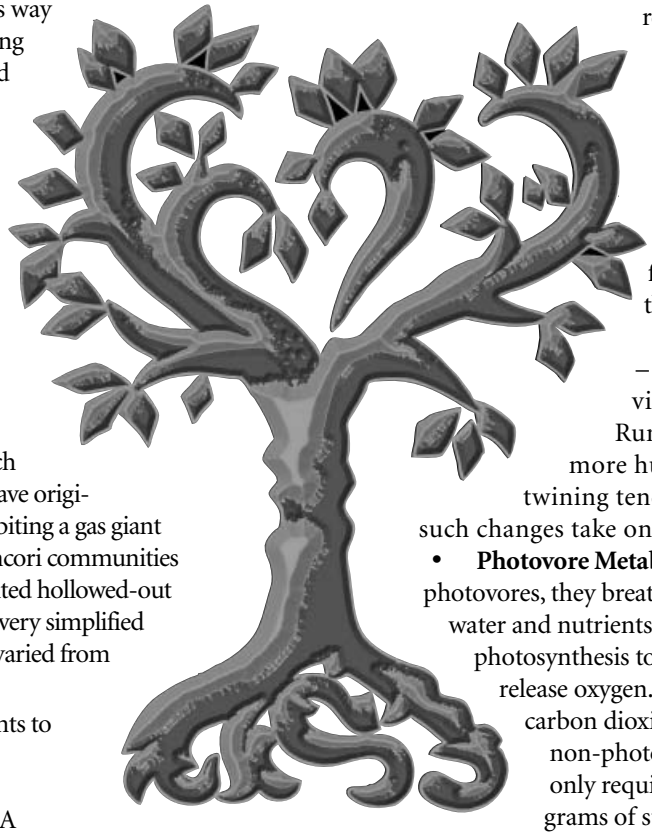
- **Extra Limb** – A Madji's prehensile tail can function **either** as an extra "leg", improving their balance and granting them a +10 DB bonus versus Martial Arts Sweeps and Unbalancing attacks, **or** as an extra "arm", which does not provide any extra attacks, but can allow a Madji to do things that others would find impossible (e.g. make an attack with a two-handed weapon while holding something with its tail.) A Madji cannot use the tail as both an arm and a leg in the same round.
- **Motion Sensing** – Madji have an acute ability to register even slight movements within his normal visible range, and receive a +20 bonus to Perception maneuvers against moving objects or people.
- **Radiation Resistance** (minor) – Madji are abnormally resistant to radiation damage of all forms (including ultraviolet rays). All Radiation criticals against a Madji are reduced by one size (e.g. Medium become Small, Tiny are ignored). This is cumulative with anti-radiation medicines.

Species Limitations: None

DP Cost: None

Runcori

Appearance: The Runcori are natural shapeshifters; all descriptions of the species are couched in generalities. The Runcori are intelligent, motile plant-like beings. An "adult" Runcori is about two meters tall from its crown to its walking tendrils. The central tree-like column is 50 cm in diameter and contains the equivalent of a brain. Dozens of walking tendrils, some up to a meter long, emerge from the base of the column. The tendrils serve a second purpose in that the Runcori can extract nutrients and water from soil by temporarily planting itself in suitable ground (or sourcing food from hydroponic tanks). From higher up on the column, dozens of larger thick green "leafy" vines up to half a meter in length spread out to shield and conceal the column in all directions in a mobile network of creepers. These vines photosynthesize light and absorb carbon dioxide, releasing oxygen. Photoreceptors and chemoreceptors on the leaves provide the Runcori with its distributed senses of sight and smell. By reconfiguring the vines into groups, the Runcori can create temporary manipulator arms for itself. At the crown of the column, the hard "bark" gives way to flexible membranes enabling the Runcori to perceive sound and a set of pipelike organs give it a flute-like voice.



Biology: The Runcori are probably plants, but not as encountered on most worlds. Runcori have claimed that they are an engineered rather than evolved species. Runcori have both male and female flower organs. Saplings require forty years from germination to reach adulthood. Runcori claim to have originated on a terrestrial moon orbiting a gas giant which no longer exists. All Runcori communities encountered so far have inhabited hollowed-out asteroidal bubble-worlds with very simplified ecologies. Internal gravity has varied from 0.8g to 1.2g.

Demeanor: When a Runcori wants to be, it can be sophisticated, intelligent, and curious. They are also inveterate pranksters. A Runcori will use a tendril or a vine to trip someone up for a pratfall; if the Runcori likes the butt of its humor, it will catch the person before they fall. Runcori will hold (imaginary) conversations with salad vegetables or potted plants. Runcori have perpetrated elaborate scientific hoaxes. Shortly after their arrival on Earth, "ancient" artifacts were discovered that seemed to indicate humanity were the product of Runcori genetic engineering. They did admit their fraud when it became clear that too many humans believed. Their sense of humor is perhaps their way of coping when every herbivore wants to nibble on their foliage and other animals use them as comfort stations and territorial markers. Even xenodiplomats can become exasperated with the "Weeds".

Technology: The Runcori are brilliant scientists and superb technologists. Runcori technology is always in flux as their specialists reconfigure and optimize their equipment, starships, and habitats.

Lifespan: Runcori can easily live for 200 years.

Culture: Runcori societies embrace Belter and Scientific cultures. Their principal languages are Kuncari and Tankevi.

Special Abilities:

- **Distributed Senses** – With the exception of their auditory sense, Runcori do not have their senses concentrated into specific small areas of their body. Their visual and olfactory capability is distributed among thousands of receptors. A Runcori can choose to "see" and "smell" in all directions simultaneously (attackers do not get flank or rear bonuses to attacking a Runcori when it is in this mode) but the Runcori takes a –20 penalty to all Perception maneuvers. A Runcori can concentrate in a particular direction (no penalty to Perception), but then any flanking or rear attacks receive the normal bonuses.
- **Limited Shapeshifting** – Runcori can rearrange their vines and tendrils at will. A Runcori could choose to take a more humanoid form by intertwining tendrils into arms and legs. All such changes take one hour to complete.
- **Photovore Metabolism** – Runcori are photovores, they breathe in carbon dioxide, extract water and nutrients from the soil, and use photosynthesis to produce carbohydrates and release oxygen. (A Runcori can recycle the carbon dioxide produced by half a dozen non-photovore characters.) A Runcori only requires one liter of water and 100 grams of suitable nutrients per day (this can be obtained by "rooting" in suitable soil for one hour, or dipping the tendrils in a special hydroponics tank for ten minutes). Runcori prefer natural light but a suitably powerful flashlight or internal illumination will suffice.

Species Limitations: None

DP Cost: None

Silth

Appearance: The Silth are a bipedal race with both males and females averaging 170 cm in height. In build, they are usually slim or slender. They have a tough leathery hide, consisting of a multitude of tiny colored scales, which are various hues of green on their arms, legs, tail, and back, but shift towards red shades on their chest and head. Silth have no hair. The tail is slender and relatively flexible, extending from the base of their spine down to ankle height, and helps the Silth's balance. Silth hands and feet have five digits, however the outer two digits on the hands serve as opposable thumbs. The other fingers sport retractable claws, which can be used to inject a nerve toxin into their foes. Like most sophonts, the Silth's brain is located in the head, protected by a bony skull. The Silth have two relatively small ears, one on each side of the head, and a pair of large eyes for binocular vision. Instead of a nose, they have a vertical slit in the centre of their face for breathing. Below the breathing slit is a large mouth, filled with two rows (top and bottom) of sharp incisors. Silth evolution has combined the senses of taste and smell on their tongue – thus a Silth whose mouth is open is tasting the air for strange scents.

Biology: Silth are carnivorous, diurnal oxygen-breathers. They are a cold-blooded reptilian race who become sluggish, even dormant in the absence of natural or artificial warmth (e.g. at night). Successful matings between members of the two Silth sexes produce a single egg, which hatches after twenty days. Both male and female parents take turns in protecting and raising the young before and after hatching. Silth younglings require fifteen years to reach full adulthood. Saroulsiss, the Silth homeworld, is a 1.1g hot and arid world with a thick oxygen-nitrogen atmosphere.

Demeanor: The cornerstone of Silth society is the extended family with its hallowed traditions and its responsibilities to protect the young at any cost. For countless millennia, the Silth were not the foremost predator on their world – eventually their intelligence and tools raised them to the peak of the food chain but the conditioning to view all other species as either prey or threat remains. Starfaring Silth are expansionist and xenophobic, believing that they are the rightful rulers of the galaxy.

Technology: The Silth are most interested in practical technologies, particularly those with military potential. Their natural dormancy in cold conditions and their warlike temperament has spurred medical developments. The Silth have long mastered controlled cryogenics and regeneration technologies.

Lifespan: With reasonable medical care, average Silth lifespans routinely exceed 90 years.

Culture: The Silth normally hail from Aristocratic and Militaristic cultures. Highspeech and Warspeech are the principal languages.

Special Abilities:

- **Heat Resistance** (minor) – As a result of their origins on a hot world, Silth have a significant tolerance to natural heat. In game terms, this is equivalent to raising the temperatures at which Stamina RRs must be made by 20 degrees Celsius (i.e. to 52, 63, and 74 degrees Celsius).
- **Natural Weapon** - The Silth can use their retractable claws as a natural weapon. They can learn to use their claws as a Martial Arts skill.
- **Poison Sac** (Nerve) (Lesser) – The Silth generate a nerve toxin in an organ within their body. This poison is then circulated to reservoirs close to their retractable claws and can be injected into any wound made by the claws. The victim must make a Stamina RR using the Poison Bonus method (bonus of +0) or be paralyzed for d10 rounds.
- **Tough Hide** (Lesser) – Silth receive a +10 bonus to DB from their tough leathery skin.

Species Limitations:

- **Cold Susceptibility** – As a cold-blooded species, the Silth are much more vulnerable to natural cold. A –40 modifier is applied to any Stamina CRRs or RRs against natural cold.

DP Cost: None

Tintamar Knowledge Base: The Silth

The Silth are an aggressive, militaristic, xenophobic race who believe it is their evolutionary destiny to conquer the galaxy. In the final analysis, the Silth believe that all other sentient species must submit to the Silth empire or be destroyed. The Silth are a dangerous enemy who pose a very real threat to other civilized races, even when the Silth are not actually fighting them in open warfare. To humans especially, the Silth are a dark mirror image of what mankind could have been and might yet become. Both humans and Silth favor the same planetary real estate, both species are expansionist, and both can understand the motivations of the other. Warm-blooded mammals versus cold-blooded reptilians. Descendants of survivors of the asteroid impact that killed the dinosaurs versus a race that could call tyrannosaurs and velociraptors cousins. One war between humanity and Silth has already been fought, further conflict is inevitable, and the consequences may decide the future of the galaxy.

Most SysOps running campaigns in the Tintamar setting should not allow Silth player-characters. SysOps using other settings may permit Silth PCs but should consider toning down the xenophobia of the Silth.

Subspecies and Genetic Adaptation

When a sentient species leaves its homeworld to found new settlements on other worlds, their colonists have two choices – adapt their environment to suit their needs or adapt themselves to suit the environment, effectively creating new subspecies of the parent race. Some societies also experiment with genetic engineering, either covertly to create supersoldiers, superspies, and the like or openly in an attempt to shortcut the evolutionary process. Many players will therefore want to customize their characters through genetic modification.

In game terms, there are two routes to represent genetic adaptation. Both involve the expenditure of Development Points and players may choose one or both.

The first route is for the player to purchase the Genetic Adaptation Talent at 1st level for five Development Points. This allows the character to swap out one of the character's species abilities and replace it with one of the Genetic Talents (see Table below). If the player purchases the Genetic Adaptation Talent twice, two of the character's species abilities may be replaced. Certain Genetic Talents appear in multiple levels of ability, e.g. Heat Resistance (minor) and Heat Resistance (major). Unless a character's species already has the lesser-powered version, the player may not select the more powerful version using the Genetic Adaptation Talent route.

Example: *Humans do not have Heat Resistance as one of their species abilities. Thus genetically engineered human settlers on the desert world of Khayyam with the Genetic Adaptation Talent may replace one of Profession Adaptability/Skill Flexibility, Bonus Skill Ranks, or Skill Specialization with Heat Resistance (Minor) but not Heat Resistance (Major). The Silth do have Heat Resistance (Minor) so a Silth character with the Genetic Adaptation Talent could replace Heat Resistance (Minor) with Heat Resistance (Major).*

The second route does not require the character to sacrifice any of the species abilities. Instead the player simply expends the Development Points to purchase the desired Genetic Talent. As this purchase is made at first level, the normal financial cost and recovery time for genetic modification are waived. There are no restrictions (other than available Development Points limits) on which Genetic Talents may be chosen.

Example: *On the water-world of Poseidon, many of the human colonists have received extensive genetic engineering to enable them to live underwater. Characters from Poseidon will normally take Genetic Adaptation Talent twice to swap in the Gills and Water Vision Talent, expending 10 DPs and losing two species abilities to acquire two Talents worth 30 DPs in total. Some players pay 10 DPs for High Pressure Tolerance (minor) – players whose characters belong to deepsea families may consider spending 30 DPs for High Pressure Tolerance (major).*

Some "Genetic" Talents do arise naturally without the intervention of genetic engineers – these are marked with an asterisk in the table below

SysOps may allow Genetic Talents to be acquired at second and higher levels using advanced medical techniques, similar in intent but orders of magnitude more sophisticated than gene therapy cures. See Chapter 7, for the relevant game mechanics.

5.2 Genetic Modfications Table			
Cost	**Genetic Talent**	**Cost**	**Genetic Talent**
varies	Biosculpted Body	10	Low Gravity (minor)
15	Blazing Speed *	15	Low Gravity (major)
10	Cold Resistance (Minor)	10	Low Pressure Tolerance
20	Cold Resistance (Major)	10	Lung Capacity
30	Dark Vision (Greater)	10	Magnetic Sense
15	Dark Vision (Lesser)	10	Motion Sensing
25	Dense Musculature *	20	Multiple Eyes
15	Electrical Sense	20	Natural Camouflage
30	Enhanced Scent *	10	Natural Weapon
10	Enhanced Senses *	15	Neutral Odor
varies	Extra Limbs	25	Night Vision
20	Flight	10,15,20,25	Poison Sac (Nerve)
10	Genetic Health	10	Portage Skills
25	Giantism	20	Radiation Resistance (minor)
10	Gills	40	Radiation Resistance (major)
10	Heat Resistance (Minor)	15	Reduced Sleep Requirement *
20	Heat Resistance (Major)	15, 30, 45	Regeneration
15	Heat Sense	40	Space Adaptation
25	Heat Vision	20	Telescopic Eyes
20	High Gravity (Minor)	15	Tough Hide (Lesser)
40	High Gravity (Major)	30	Tough Hide (Minor)
5	High Gravity Training	60	Tough Hide (Major)
10	High Pressure Tolerance (Minor)	90	Tough Hide (Greater)
30	High Pressure Tolerance (Major)	20	Ultrasound Echolocation
10	Infrasound Hearing (air)	40	Vacuum Adaptation
15	Infrasound Hearing (water)	20	Water Vision
10	Lightning Reflexes *	25	Zero Gravity
* = May occur naturally.			

SysOp's Note: Genetic Talents Game Balance

Genetic Talents have the potential to be abused by over-enthusiastic players. As with all Talents, SysOps should consider all Genetic Talents carefully for inclusion or exclusion before the start of a campaign. SysOps may find it helpful to determine in advance which colony worlds have practiced genetic engineering and to what degree, creating a set of backgrounds and genetic packages for augmented characters, rather than allowing a free-for-all. SysOps may also wish to consider how "normal" individuals and society in general treat augmented characters.

Tintamar Knowledge Base: Genetic Engineering and Augmentation

Genetic engineering, including re-engineering of adults, is feasible and relatively commonplace. Colonists hailing from marginal or extreme worlds and explorers are the recipients of the more substantial modifications. Cosmopolitan citizens normally limit themselves to cosmetic alterations to achieve the latest ideal of beauty.

In the Terran Federation, all genetic modifications must be registered – this has led to a thriving black market for performing genetech on criminals, secret agents, mercenaries and the like who need an edge or a new appearance. Extreme genetic engineering is frowned upon by most human religions, and heavily augmented individuals can expect a certain degree of intolerance from "normal" humans even in secular societies.

Additional Character Info

Once a character's stats have been generated and a Species has been selected, the player should determine other details about the character, such as height, weight, and Base Movement Rate.

Height & Mass

The following table details the base (or average) Height and Mass for each species. Individual members of almost all species can be taller or shorter than the average, and this in turn can modify a character's mass. Players should feel free to adjust both height and mass to their liking. The following guidelines are presented purely as an aid to those players who would like some randomness in these character aspects.

Simple adjustments may be made by rolling 1d10 twice. For determining random Height adjustments, subtract if the first roll is odd, and add if the roll is even. Multiply the result of the second die roll by the Height Modifier (in centimeters) and add or subtract this (as per the first roll) to or from the base Height.

Simple adjustments may also be made for beginning mass values. Follow the same rules above, but multiply the second die roll's result by the Mass Modifier (in kg) found on the table below to determine the final adjustment.

Table 5.3 Species Height & Weight

Race	Base Height	Height Modifier	Base Mass	Mass Modifier
Ceran, Male	240	2	130	3
Ceran, Female	225	2	120	3
Gorsiva, Male/Female	100	1	30	1
Human, Male	185	2	80	2
Human, Female	170	2	60	1.5
Krakur, Male	200	3	70	2
Krakur, Female	200	3	75	2
Madji, Male/Female	125	2	60	2
Madji, Neuter	120	2	60	2
Runcori,	200	2	50	1
Silth, Male/Female	170	2	70	2

Record your character's Height and Mass on your character sheet.

Starting Age

Each sentient species ages at a different rate. The following table indicates the age at which members of a given species are considered to have reached adulthood and act as free agents.

Table 5.4 Starting Ages

Species	Adulthood	Lifespan	Increment
Ceran	30	150	3
Gorsiva	20	120	2
Human	20	100	2
Krakur	25	150	3
Madji	25	140	3
Runcori	40	200	4
Silth	15	90	2

Species – This is the character's species.

- **Adulthood** – This is the age that characters of a given species are considered to have reached adulthood. It is also generally the starting age for a 1st level character.
- **Lifespan** – This is the average lifespan for a character of this species.
- **Increment** – Should a character ever begin the game above first level, this value represents the recommended number of years to be added to the starting age of the character for each level he has obtained beyond the first.

Base Movement Rate

The next step in the character creation process is to record your character's Base Movement Rate on your character sheet. A character's Base Movement Rate determines how far he or she can move in a two-second round. This rate represents a character's normal speed (usually for walking, but occasionally for swimming and more unusual modes of locomotion), and is based on a character's Height. Quickness can either add to, or penalize, a character's stride. None of the modifications found on the table below may reduce a character's BMR below 0.5m per round.

To determine a character's Base Movement Rate, locate their Height and paired BMR on the table below. Add or subtract any modifiers due to their Quickness stat.

Example: *Avaseho, a Gorsivan Pilot, is 114cm tall, giving her a BMR of 1.6m per round. Her Quickness stat value is a 96, adding an additional 0.9m per round to her BMR. Avaseho's final Base Movement Rate is 2.5m (1.6 + 0.9) per round. When gliding, Avaseho can move 5m per round.*

Table 5.5 Base Movement Rates			
Character Height	BMR	Quickness	BMR Modifier
241-250cm	4.2m	102+	+2.1m
231-240cm	4m	101	+1.8m
221-230cm	3.8m	100	+1.5m
211-220cm	3.6m	98-99	+1.2m
201-210cm	3.4m	95-97	+0.9m
191-200cm	3.2m	90-94	+0.6m
181-190cm	3.0m	75-89	+0.3m
171-180cm	2.8m	25-74	+0m
161-170cm	2.6m	10-24	-0.3m
151-160cm	2.4m	5-9	-0.6m
141-150cm	2.2m	3-4	-0.9m
131-140cm	2.0m	2	-1.2m
121-130cm	1.8m	1	-1.5m
111-120cm	1.6m		
101-110cm	1.4m		
91-100cm	1.2m		
81-90cm	1.0m		
71-80cm	0.8m		
61-70cm	0.6m		

The Base Movement Rate represents a character's normal stride. If moving at a faster pace, his Base Movement Rate is modified according to the table below. The table also lists any resulting maneuver difficulties associated with actions performed while progressing at the given pace. (After all, the faster you move, the trickier it is doing things.)

The Pace Multiplier values are only suggestions, and SysOps should note other difficulties brought about by surrounding terrain or environmental factors, which can raise the level of the difficulty modifier. Unobstructed or routine movement under ordinary conditions should never require a Maneuver Roll.

Pace	Pace Multiplier	Normal Maneuver Difficulty
Walk	x1	Medium
Run	x2	Hard
Fast Run	x3	Very Hard
Sprint	x4	Extremely Hard
Dash	x5	Sheer Folly

Characters are limited in how long they may continue moving at any given Pace. The following table provides some guidelines as to how long a character can keep moving without rest.

Once a character stops moving, he must rest for a given amount of time based upon how many full time increments he spent moving, ignoring any partial time increments. For each full time increment spent moving, the character must rest a number of rounds equal to ((20 – Con Bonus; minimum of 1) x Pace Multiplier). If the character begins moving again before becoming fully rested, then all actions performed while moving are increased one level in difficulty.

5.6 Pace vs. Time		
	Time Increment	
Pace	(for zero/negative Con bonus)	(for positive Co bonus)
Walk	30 minutes	1 hour per point of Co bonus
Run	2 minutes	5 minutes per point of Co bonus
Fast Run	15 rounds	1 minute per point of Co bonus
Sprint	5 rounds	10 rounds per point of Co bonus
Dash	1 round	1 round per point of Co bonus

Cultures

Players should choose a Culture that best suits their character's background. While each race has details regarding their preferred Culture(s), a player may elect to hail from a different Culture, unless their SysOp objects. Selecting a Culture is a one-time choice and cannot be altered. The chosen Culture determines a character's Adolescent Skill ranks, starting languages, attitudes, common motivations, and outlook on life.

This section describes each of the available Cultures, followed by the Adolescent Skill ranks gained by electing to be a member of that community.

In the descriptions below, the starting languages are given using the following notation: Anglic (S 5/W 5), indicating 5 skill ranks in Speaking the language, and 5 ranks in Writing the language. This should be noted in the proper section of the character sheet. The reference "Racial Tongue" refers to the most commonly used language of the specific species, i.e. Highspeech for Silth, Anglic for Humans, etc.

Aristocratic

Aristocratic cultures, where one hereditary caste exercises much greater political and economic power than other segments of the community, exist on human colony worlds and among alien races where familial kinship remains the foundation of organization and government. Some aristocratic cultures ensure their continued success by co-opting exceptional members of other social classes into the nobility through marriage, adoption, or ennoblement. Others prohibit upward social mobility - their ruling classes ignore their responsibilities and spend their lives in the pursuit of pleasure. (Note: the aristocrats in this culture use the Noble skill set; everyone else uses the Commoner skill set.)

Preferred Locations: This type of society is normally found on colony worlds where a select few have had the opportunity to transform themselves into a self-perpetuating elite. On human worlds, the nobility are normally descendants of the founding families (or the colony ship's crew).

Clothing & Decoration: The aristocracy sometimes affect clothing, decorations, or hairstyles that are odd, even bizarre, so that their status is clear to all. Retainers of the nobility normally wear attire with heraldic symbols to denote their loyalty to a specific family. Non-noble members of these communities wear clothing appropriate to their financial circumstances and employment.

Demeanor: Aristocratic individuals are usually very self-confident and accustomed to being obeyed – many are insufferably arrogant. Their retainers can be extraordinarily steadfast and loyal. In stagnant aristocracies, commoners may be rebels against the status quo, in thought if not in deed.

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Belter

Belters (sometimes called Spacers) belong to technologically advanced cultures who have chosen to make their homes on airless moons and asteroids. The archetypal Belter is a spacefaring prospector who mines metals and other resources from asteroids and comets for months at a time, and then spends his gains in a drunken debauch lasting days on one of the major asteroids. Space is both the Belters' home and their implacable enemy. Habitation domes can be breached by meteor strikes, air recyclers can break down threatening death by suffocation, radiation from solar storms can bring slow doom to insufficiently shielded habitats, and so on. Belter communities rely on their technology and are extremely safety conscious. When an accident can endanger the lives of everyone, Belters are intolerant of ignorance and harsh with anyone who commits malicious damage.

Preferred Locations: Belter societies are found on orbital habitats and on (and beneath) the surfaces of moons and asteroids.

Clothing & Decoration: Belter clothing favors hard-wearing synthetic materials and functionality over aesthetics. Many Belters wear skintight "semisuits" at all times. In an emergency, the Belter can grab the nearest oxygen helmet and join it with the suit's neck seal, giving him a temporary spacesuit. A full-blown spacesuit is the most valued possession of any true Belter – indeed for some, it is their only real home.

Demeanor: Belters are rugged individualists, yet have a genuine respect for the welfare of their communities. They are cautiously bold – they assess the risks, weigh up the potential gains, and then act decisively. Belters can be contemptuous of the citizens of normal planets, believing them to be "soft" and a danger to everyone around them in space. As the rock rats say, "Groundhogs should stick to the ground".

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Corporate

Money underpins and permeates every aspect of life on the worlds of the Corporate cultures. From factory workers and office clerks through the managers and entrepreneurs to the unimaginably rich Board Directors, status, wealth and influence depends upon membership and position within the industrial and mercantile conglomerates. Those who are neither employees nor shareholders are marginalized from society and may suffer extreme hardship. Competition is fierce among the corporations and many executives will justify any means to maximize profits (and their personal bonuses). (Note: the wealthiest shareholders use the Shareholder skill set; everyone else uses the Employee skill set.)

Preferred Locations: Corporate cultures thrive in heavily industrialized worlds, but intensively farmed agricultural and mining worlds are just as ripe for exploitation. On asteroids, airless moons, and other closed habitats governed by Corporate cultures, the company can be an absolute tyranny with its "employees" little better than slaves – the employees are paid for their labor but in turn must buy air, water, food, and shelter from the company. Few will ever earn enough to escape off-world.

Clothing & Decoration: Managers and above dress in the racial equivalent of sharp business suits when at work, and in elegant casual attire outside working hours. Ordinary employees wear neat clean company uniforms at work. Conformity with the accepted fashion is the norm.

Demeanor: Individuals from a Corporate culture are usually highly competitive. Greed is a frequent failing. Jealousy of others' successes may spur the Corporate citizen to greater efforts to eclipse their rivals.

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Cosmopolitan

Cosmopolitan societies blend the best (and/or worst) of racial prespaceflight and galactic cultures into a giant melting pot. The diversity of previous cultures coalesces into a single gestalt where divergent traditions become simply local color, which pass in and out of fashion. Global communications and transportation are efficient and readily available. The average citizen of a Cosmopolitan culture has a very high standard of living and enjoys all the benefits of high technology. Many spend more time in leisure pursuits of every kind than in employment. Anything and everything is possible and available on their worlds. Cosmopolitan societies are self-confident and stable, usually peaceful, and sometimes decadent.

Preferred Locations: The Cosmopolitan cultures are normally found on the original home worlds and oldest colonies of a particular species.

Clothing & Decoration: Cosmopolitan attire varies immensely as each wave of fashion sweeps the world. Frequently antique clothing styles are resurrected with modern "improvements" that would have baffled or appalled the original wearers.

Demeanor: Cosmopolitan citizens seek out novelty to satiate their jaded appetites. Some crave excitement and danger in their lives; others have become so cocooned in their safe comfortable lives that they cannot cope with real peril. Members of other cultures can find Cosmopolitans overly uninhibited in their behavior and be morally outraged.

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Exotic

Few in number, Exotic cultures are undoubtedly the most mysterious in the galaxy. Exotic communities devote themselves to artistic and philosophical pursuits. They usually isolate themselves from the mainstream of galactic affairs, eschewing distractions in favor of their search for truth. Exotics use technology judiciously and unobtrusively to maintain the balance on their worlds and ensure a comfortable standard of living for all. Some Exotic worlds follow particular religions – these faiths emphasis enlightenment through contemplation and do not proselytize. With their focus on the mind, psionic powers are not uncommon among the Exotics.

Preferred Locations: The Exotics are found on virgin planets, untouched by heavy industry. Their spacious towns and cities blend into their natural surroundings, enabling the Exotics to be one with the natural world. Exotics can be equally at home on idyllic garden paradises as in untamed wildernesses.

Clothing & Decoration: Exotics dress simply without ostentation, normally favoring one or two subdued tones rather than a riot of bright colors.

Demeanor: Exotics are calm and measured in word and deed. Although knowledgeable on many subjects, Exotics are frequently detached from worldly matters. Their seeming passivity can madden more active individuals who mistake control for indifference. A penchant for enigmatic utterances and gnomic parables can be likewise infuriating.

Starting Languages: Other racial language (S 6/W 6), Racial Tongue (S 4/W 3)

Frontier

For most starfaring races, exploration of new worlds is followed by colonization of the most promising planets. Whether motivated by a sense of "manifest destiny", a desire to build a new life, or to preserve ethnic traditions, colonists emigrate to the new worlds, build homesteads, raise families, and make a new home for themselves under alien skies. Natural disasters, inimical alien ecologies, difficulties experienced in adapting vital foodstuffs to a wholly new environment, among other problems, make a colonist's life a daily challenge of survival. Understanding and taming the new world may take generations as the Frontier culture gradually expands from its first outposts and defensible farmsteads into thriving settlements. Frontier cultures mix high technology, usually extremely durable equipment brought by the first colonists, and easily replaceable low technology such as domesticated riding beasts. As a Frontier culture becomes better established and the planet's unique resources are determined, it will use these to trade for the goods that cannot be manufactured by its own people.

Preferred Locations: Frontier societies are found on habitable planets and moons throughout the galaxy. Dependent on the starfaring species' sphere of influence, tolerance to new environments, and need for colonies, Frontier worlds may range from marginal to perfect matches in terms of suitability. Frontier cultures that seek to preserve a regional subculture of the homeworld will favor planets with similar physical environments.

Clothing & Decoration: Early Frontier cultures will favor high-quality durable synthetic materials. As they master their new world, available natural materials will become the norm, varying in style according to the climate. Clothes may be hand-crafted rather than mass-produced.

Demeanor: Life on the Frontier breeds survivors. Determination and independence can be seen as stubbornness. They are proud of themselves, of their traditions, and of their culture, and will not take lightly any aspersions cast on such matters by ignorant off-worlders.

Starting Languages: Other racial language (S 6/W 6), Racial Tongue (S 4/W 3)

Militaristic

The potential for conflict always exists in the galaxy. When force must be used, a society needs warriors. Among some species, Militaristic cultures have developed on relatively impoverished colonies where the virtues of the warrior are celebrated. These societies are not military dictatorships, rather tradition, courage and honor are the foundation and hallmark of the people. The Militaristic culture trades the services of its people as elite mercenaries in return for off-world items and services.

A few species are so dominated by their (corrupted) Militaristic culture, that combat has become a way of life and the soldiers rule. The victors deserve the spoils of war, and it is the true warriors who will conquer the universe.

Preferred Locations: Militaristic cultures are normally found on colony worlds where the environment has forced some evolutionary adaptation upon the settlers, giving them an advantage over normal members of their species in combat situations.

Clothing & Decoration: Civilian clothing and decoration on Militaristic worlds runs the entire gamut of styles from the simple homespun fabrics of the frontier to local analogues of the latest galactic fashion. Observers will note the high percentage of citizens wearing military uniform in population centers.

Demeanor: Courage in battle, protection of the innocent, a belief in personal honor and steadfast loyalty to one's comrades and cause are found in most individuals of this culture.

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Religious

Perceived (or real) persecutions and abhorrence of the values of the secular cultures have driven the more zealous adherents of religions and sects to found new communities among the stars. Even sects fanatically opposed to scientific progress have used starships on their exodus to new worlds, renouncing the technology upon their arrival for a more primitive lifestyle. Religious cultures seem to thrive despite or because of adversity as their faith makes them strong. Heretics and unbelievers are ostracized or worse. Zealously sure of their righteousness, Religious cultures are highly isolationist, desiring no contamination from off-world. Even where the planetary government is not a theocracy, preachers and the like will be the greatest influence on the citizenry.

Preferred Locations: Typically, Religious cultures are established on worlds that are only marginally habitable by members of the colonizing species. Enduring the inevitable hardships is considered essential in ensuring that the believers remain true to their faith.

Clothing & Decoration: Clothing on Religious worlds varies according to the climate and available native resources, but is almost always handmade and conforms to any dress rules laid down by the religion. Decoration, especially jewelry, is rare, with the exception of symbols of the faith.

Demeanor: Individuals from Religious cultures divide in two categories: the true believers and the "lapsed". The former are steadfast in their faith, adhering to all its teachings, scorning temptation, and stern with the godless and the morally lax. The latter have renounced some or all of their faith, preferring the pleasures of modern galactic life. Denounced as sinners by the zealots, the prodigals pursue a hedonistic existence in (self-imposed) exile from their home world.

Starting Languages: Other racial language (S 6/W 6), Racial Tongue (S 4/W 3)

Scientific

The pursuit of truth through science and ever-increasing progress through technological achievements dominate the thinking of the Scientific cultures of the galaxy. Some Scientific cultures specialize in particular fields such as cybernetics or genetic engineering; more populous worlds may strive for preeminence in multiple areas. Logic, rationality, and the scientific method are prized above all else. Experimentation may not be constrained by ethical judgments on some worlds.

The Scientific cultures possess the most advanced technology (in their specialties) in the galaxy, with the latest inventions from the laboratories quickly finding their way into everyday life.

Preferred Locations: Scientific cultures sometimes appear on colony worlds where advanced terraforming has been necessary to render them habitable or where long-term research bases (either on a planetary surface or in space) have been established to study a planetary biosphere, an astronomical phenomenon, etc.

Clothing & Decoration: Clothing tends toward function rather than aesthetics with fashions changing slowly. Devices integrated into the clothing and the latest miniature gadgets are commonplace, however.

Demeanor: Unquenchable curiosity and a desire for knowledge are the defining characteristics of the stereotypical Scientific citizen. Some have an affected (or real) disdain for art, philosophy, religion, and superstition.

Starting Languages: Racial Tongue (S 6/W 6), other racial language (S 4/W 3)

Adolescent Skill Ranks

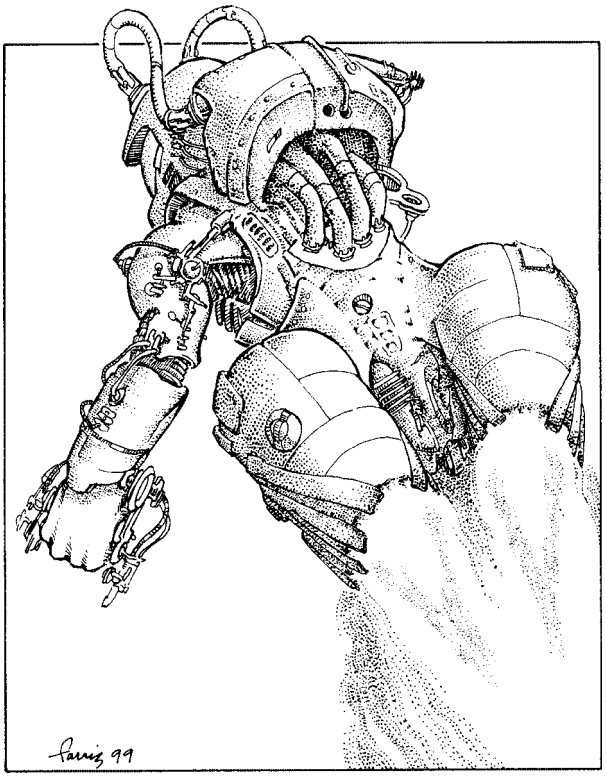
The following table lists any skills obtained during a character's youth, having grown up within a particular culture. Record the number of skill ranks gained in the appropriate column of the skills section on the character sheet. Totaling a character's skill bonuses is covered in Chapter 6.

Table 5.7 Adolescent Skill Ranks

Skill	Aristo: Noble	Aristo: Comm	Belter	Corp: Share.	Corp: Employee	Cosmo-politan	Exotic	Frontier	Militar.	Religious	Scientific
Appraisal	0	0	1	1	2	1	0	0	0	0	1
Armor	1	0	2	1	0	0	0	1	2	0	0
Artistic Skills	2	0	0	1	0	2	3	0	0	1	0
Climbing	0	1	1	0	0	0	1	1	1	1	0
Computer Operation	1	1	2	2	2	2	1	0	1	0	3
Crafts	0	1	0	0	0	0	0	3	0	2	0
Driving	2	1	0	2	1	1	0	1	1	0	1
Endurance	1	2	1	1	1	1	1	2	2	2	1
First Aid	0	0	1	0	0	0	0	1	1	1	0
Influence Skills	2	0	0	3	3	2	2	0	0	3	0
Jumping	0	0	0	0	0	0	0	1	1	1	0
Mental Focus	0	0	0	0	0	0	3	0	0	1	0
Mundane Lore: Own Culture	1	2	1	1	1	1	2	1	1	2	1
Mundane Lore: Cosmography	2	1	1	2	1	2	1	0	1	0	2
Mundane Lore: Geography	1	1	0	1	1	1	1	1	1	1	1
Outdoor Skills	0	1	0	0	0	0	1	3	1	2	0
Perception	1	1	1	1	1	1	2	2	1	2	2
Scientific Skills	1	1	2	1	1	1	1	0	0	0	3
Sports	2	1	0	1	1	1	0	0	1	0	0
Stalking & Hiding	0	1	0	0	0	0	0	1	1	0	0
Streetwise	0	1	0	0	2	1	0	0	0	0	0
Swimming	1	1	0	0	0	0	1	1	1	1	0
Technical Skills	0	0	2	0	0	1	0	0	0	0	3
Vocation	0	2	1	1	3	2	0	0	0	0	2
Weapon Skills	2	1	1	1	0	0	0	1	3	0	0
Zero-G Maneuvering	0	0	3	0	0	0	0	0	0	0	0

Note: If the chosen Culture offers multiple skill ranks in Artistic Skills, Crafts, Sports, or Vocation, the player should allocate the skill ranks to a single Artistic skill, Craft skill, Sports skill or Vocation skill. Skill ranks in other categories may be applied to a single skill within the category or spread out among several, as the player sees fit.

Skills



Your character's skills define much of what your character can do, but they by no means encompass all of your character's abilities. Skills are a reflection of your character's interests, education, and training. Unless you're creating a truly unusual character, HARP assumes that all characters come with certain basic skills i.e. walking, talking, hopping on one foot, ordering a meal in a spaceport bar, buying clothes in a shop—in other words the basics a character would need to function in society.

Characters use skills to perform maneuvers and actions. Characters use their Development Points to purchase ranks in the various skills. Each rank grants a bonus that applies when using the skill. These bonuses, combined with the bonuses for the two stats that are important for using the skill plus any other modifiers from talents, items, or other sources all add up to give the character his total skill bonus for a given skill.

To use a skill, the player rolls open-ended percentile dice and adds his total bonus and any situational modifiers to get a total skill roll. This total is then compared against the column of the Maneuver Table for the resolution method being used to see if the attempted action was successful or not. See Chapter 9 for more information on the Maneuver Table and skill resolution methods.

Maneuvers in **HARP SF** are always assigned a difficulty level; these levels determine the negative modifier that is applied to the skill roll.

Mundane–No roll is necessary.

Routine–(+60) Anyone could complete a maneuver of this type, given time and a bit of luck.

Easy–(+40) A trainee can complete the maneuver with little difficulty.

Light– (+20) Given enough time, a trainee could complete the maneuver.

Medium–(+0) The average difficulty inherent in any situation.

Hard–(-20) This difficulty level requires a character with expertise to accomplish this maneuver.

Very Hard–(40) Even an expert needs time to successfully complete these types of maneuvers.

Extremely Hard–(-60) Only an expert of unparalleled skill, or someone with incredible luck would be able to accomplish maneuvers of this difficulty.

Sheer Folly–(-80) Maneuvers at this level teeter on the very edge of natural human capability.

Absurd–(-100) These maneuvers are a step above the normal possibilities of most humans.

SysOp's Choice: Drunkard's Rule

In order to cut down on the amount of possible math to be used during the game, a SysOp may decide to always round various numbers (skill bonuses, rolls, results, etc.) to the nearest 5 before adding or subtracting them.

Purchasing Skills

Each time a character goes up a level, he gains a number of Development Points based upon his stats. One of the uses for these Development Points is the purchasing of skill ranks. Skills in a profession's favored categories cost 2 points to buy an increase and skills in non-favored categories cost 4 points to buy an increase.

If a character has two or more professions, then his costs for purchasing skill ranks are based on the profession that he is actually advancing that level.

In addition to purchasing skills individually, characters may also purchase Training Packages, a collection of related skills purchased at a discount. See Chapter 7 for more details on Training Packages.

Skill Rank Limitations

Characters are limited in how many ranks they may have in a skill at any given level. This limit is based upon the level of the character and can be determined by using the following formula:

Maximum Skill Ranks = (3 x Level) + 3

When purchasing skill ranks, the character may purchase as many ranks as desired as long as the maximum number allowed per level is not exceeded.

The following table shows how many ranks are allowed in a given skill according to the character's overall level.

Table 6.1 Maximum Number of Ranks per Level

Level	#Ranks	Level	#Ranks	Level	#Ranks
1	6	11	36	21	66
2	9	12	39	22	69
3	12	13	42	23	72
4	15	14	45	24	75
5	18	15	48	25	78
6	21	16	51	26	81
7	24	17	54	27	84
8	27	18	57	28	87
9	30	19	60	29	90
10	33	20	63	30	93

Skill Rank Progression

A "skill rank" represents an incremental increase in a skill and a bonus for using a particular skill.

This bonus per rank decreases as the number of ranks in the skill increases. The standard skill rank bonus progression is:

-25•5•2•1

-25 for Zero Ranks – This modification represents the subtraction a character receives for trying to use a skill in which he or she has no skill ranks. Stat bonuses and any other bonuses apply normally when attempting such skills. A character cannot attempt to use a Psionic Discipline in which he or she has no ranks. While characters can attempt to use most skills they have no ranks in, psionic powers are the exception to this rule.

+5 for 1-10 Ranks – For each of the first ten ranks that a character has, he receives a +5 per rank to his skill bonus.

+2 for 11-20 Ranks – For each of the ranks between 11 and 20, the character receives a +2 per rank to his skill bonus.

+1 for 21+ Ranks – For each of the ranks numbering 21 or above, the character receives a +1 per rank to his skill bonus.

Table 6.2 Skill Rank Progression/ Skill Rank Bonus Table

Ranks	Bonus	Ranks	Bonus	Ranks	Bonus
0	-25	11	52	22	72
1	5	12	54	23	73
2	10	13	56	24	74
3	15	14	58	25	75
4	20	15	60	26	76
5	25	16	62	27	77
6	30	17	64	28	78
7	35	18	66	29	79
8	40	19	68	30	80
9	45	20	70	31	81
10	50	21	71	+1 rank	+1 bonus

Learning Just a Sub-Skill

There are times when a character may want to learn just a sub-skill and not the parent skill associated with it (for example, a space pilot might only be interested in the Astrogation sub-skill, but not the Navigation parent skill.) In such cases, the SysOp may allow the sub-skill and the parent skill to be swapped, so that the sub-skill is now the parent skill, and what was the parent skill may now be used with the modifier that the previous sub-skill used to have. See Skill Descriptions.

Mandatory Subskills

Some skills encompass distinct sets of expertise within a common framework. For instance, driving a wheeled vehicle is both similar and different to driving a tracked vehicle or a hovercraft. Rather than having multiple skills with overlapping knowledge, these skills are presented as singular skills with multiple subskills. When a character learns one of these skills, the character chooses one of the subskills to be the primary subskill, e.g. Karl learns Driving and chooses Wheeled as his primary subskill. The primary subskill may be used without any subskill penalties; all other subskills must be used with the listed modifier. Karl has a Driving skill of 24 – he may drive any wheeled vehicle with his full skill bonus of 24. If he is required to drive a tracked vehicle such as a twenty-first century tank, the –20 subskill modifier associated with tracked vehicles is applied to his Driving skill, giving him an effective skill bonus of 4 (24 –20). The Multiple Subskill Proficiency Talent may be used to reduce or eliminate subskill penalties.
This rule applies to the Air Pilot, Animal Handling, Beastmastery, Driving, Foraging/ Survival, Machine Operation, Marine Pilot, Riding, Signaling, and Space Pilot skills.

Note that in HARP Fantasy, Animal Handling, Beastmastery, Foraging/Survival, Riding, and Signaling must be learned multiple times for each distinct specialization. SysOps should choose whether to apply the rules in this book or those in HARP Fantasy when running science-fantasy and other crossover campaigns.

Totaling Skill Bonuses

Your character's Total Skill Bonus is the sum of:

- **Skill Rank Bonus –** This is the total bonus from the number of ranks the character has in a skill.
- **Stat Bonus –** You add the stat bonus from both stats listed to the Total Skill Bonus. Some skills use only a single stat, so add it twice.
- **MQ (Magical/Quality) –** This is anything from a high quality item, or (in settings blending magic and science) a magical item that gives a bonus to this skill. You may add bonuses from both quality items and magical items.
- **Special** – This is any bonus received that does not fall within one of the other bonus categories.

Example: *Emilia has 4 ranks in First Aid, giving her a bonus of +20. She also has a stat bonus of +7 in her Insight stat, and a +8 in Reasoning and a high quality (+10 non-magical) medical kit. This gives Emilia a total bonus of 45 (20 + 7 + 8 + 10).*

The Master Skill List

The table to the right gives a master list of all the skills available, sorted by category. Each skill also lists the stat bonuses that apply to the skill and the most commonly used skill resolution method.

In the column for stats, some entries list one stat and an asterisk. In such cases, the second stat to use will be listed in the description of the sub-skills for that particular skill.

Table 6.3 Master Skill List

Category/Skills	Stats	Resolution
Artistic		
Acting	Pr/In	All-or-nothing
Audiovisual Recording	In/Re	All-or-nothing
Dancing	Ag/Pr	All-or-nothing
Mimicry	Pr/SD	All-or-nothing
Painting	In/In	All-or-nothing
Play Instrument†	Pr/Ag	All-or-nothing
Sculpting	In/Ag	All-or-nothing
Singing	Pr/In	All-or-nothing
Storytelling	Pr/In	All-or-nothing
Writing	In/Re	All-or-nothing
Athletic		
Acrobatics	Ag/SD	All-or-nothing
Climbing	Ag/St	All-or-nothing
Contortions	Ag/SD	All-or-nothing
Flying / Gliding	Ag/SD	Special
Sports†	Ag/Co	All-or-nothing
Combat		
Brawling	St/Ag	Combat
Combat Styles†	Varies	Varies
Demolitions	Ag/SD	All-or-nothing
Gunnery†	Qu/In	Combat
Martial Arts Strikes	St/Ag	Combat
Martial Arts Sweeps	St/Ag	Combat
Weapon Skills†	St/Ag	Combat
Concentration		
Cyber Control†	SD/Re	Special
Frenzy	SD/Co	Special
Mental Focus	SD/SD	Bonus
Psi Discipline†	SD/Pr	Special
Psi Energy Development	SD/Pr	Special
General		
Appraisal†	Re/In	All-or-nothing
Computer Operation	Re/In	All-or-nothing
Crafts†	Re/Ag	All-or-nothing
First Aid	Re/In	All-or-nothing
Linguistics†	Re/In	Special
Machine Operation†	Re/Ag	All-or-nothing
Mundane Lore†	Re/Re	All-or-nothing
Perception	In/SD	Percentage
Resistance†	*/*	Special
Rope Mastery	Re/Ag	All-or-nothing
Signaling	Re/In	All-or-nothing
Vocation†	In/Re	All-or-nothing
Influence		
Duping	Pr/In	RR
Interrogation	Pr/In	RR
Public Speaking	Pr/In	All-or-nothing
Trading	Pr/In	Percentage
Outdoors		
Animal Handling	Pr/In	All-or-nothing
Beastmastery	In/Pr	All-or-nothing
Foraging/Survival	In/Re	All-or-nothing
Horticulture	Re/In	All-or-nothing
Navigation	Re/In	All-or-nothing
Riding	Ag/SD	All-or-nothing
Sailing	Ag/Re	All-or-nothing
Tracking	SD/In	All-or-nothing
Physical		
Armor	St/Ag	Special
Endurance	Co/SD	Special
Jumping	St/Ag	All-or-nothing
Swimming	St/Ag	All-or-nothing
Zero-G Maneuvering	Ag/SD	Special
Scientific		
Archaeology	Re/In	All-or-nothing
Astronomy	Re/In	All-or-nothing
Biology	Re/In	All-or-nothing
Chemistry	Re/In	All-or-nothing
Mathematics	Re/In	All-or-nothing
Medical Practice	Re/Ag	All-or-nothing
Medical Science	Re/In	All-or-nothing
Physics	Re/In	All-or-nothing
Planetology	Re/In	All-or-nothing
Psychology	Re/In	All-or-nothing
Xenology	Re/In	All-or-nothing
Subterfuge		
Ambush	SD/Ag	All-or-nothing
Camouflage	In/Ag	All-or-nothing
Computer Hacking	Re/In	All-or-nothing
Dirty Fighting	Ag/In	All-or-nothing
Disguise	Pr/SD	All-or-nothing
Electronic Bypass	In/Re	All-or-nothing
Forensics	SD/In	Percentage
Locks & Traps	In/Ag	All-or-nothing
Pick Pockets	Ag/Qu	All-or-nothing
Poisoning	In/SD	All-or-nothing
Sniping	SD/Ag	All-or-nothing
Stalking & Hiding	SD/Ag	All-or-nothing
Streetwise	Pr/In	All-or-nothing
Trickery	Pr/SD	RR
Technical		
Computer Programming	Re/In	All-or-nothing
Engineering†	Re/In	All-or-nothing
Vehicular		
Air Pilot	Ag/In	All-or-nothing
Driving	Ag/In	All-or-nothing
Marine Pilot	Ag/In	All-or-nothing
Space Pilot	Ag/In	All-or-nothing

† = A skill that may be learned multiple times for a different specialization each time it is learned.

Player's Tip: Must-Have Skills

Although there are many fun skills to choose from, there are several that you will really want to get as they affect important aspects of your character. They are as follows:

Endurance – This determines your concussion hits.

Perception – This determines what you notice and find. The better you are at this skill, the better your chances of avoiding danger and trouble, as well as finding those hidden things.

Resistance – You want to be able to resist stun results (a frequent injury received in combat), diseases, poisons, psionic powers, electromagnetic hazards (if you are a cyborg, robot or AI) and (in some settings) spells. You will want to take at least a bare minimum of one rank in all the versions of this skill that are applicable to your character.

Weapon Skills – You want to be able to defend yourself. You should learn one ranged weapon group (such as lasers, firearms, etc.) and one hand-to-hand weapon group.

Some other useful skills that you may want to gain ranks in, depending upon your profession and the campaign are:

Armor, Climbing, Computer Operation (to err is human, to really foul up you need a computer), Driving, Engineering (Magneto-gravitic) (to fine-tune shields), First Aid (to deal with injuries when there isn't a doctor within a light-year!), Jumping, Machine Operation (scanners), Mundane Lore Cosmography (knowing who claims which star system can prevent embarrassment), Mundane Lore Xeno Lore (you don't need to be a scientist to be able to identify alien species), Signaling (for electronic warfare and shipboard sensors), Stalking & Hiding, Swimming, and Zero-G Maneuvering (because you don't want to feel ill in a spacesuit).

Other Skills

The skills presented in this book are intended for use in modern-day and futuristic settings. However, this book does not cover skills that would be appropriate to settings that include magic. SysOps who want to run modern occult horror or science-fantasy should consult **High Adventure Role Playing** for the core rules on magic and spells, as well as the details of the magical skills of the Mystical Arts category.

More cinematic martial arts can also be found in **High Adventure Role Playing** – the four Chi skills are replaced in this work by similar Psi Disciplines.

In the General category, the fantasy skill of Healing (which covers all degrees of medicine) is replaced by First Aid, representing emergency medical treatment, which non-professionals can perform with training and equipment, and the Medical Practice (Scientific category) skill, which represents highly specialized medical training. The fantasy skill of Herbcraft, which enables its possessors to locate, identify, and harvest herbs, is most useful in settings where magical herbs exist. Knowledge of mundane plant properties can be variously found in the Scientific skills of Biology and Medical Science; harvesting can be accomplished using Horticulture or Foraging. Hence Herbcraft is excluded from this book.

The Combat Style & Maneuver: Aerial Combat has been folded into Flying/Gliding in this work.

Skill Descriptions

This section gives you detailed descriptions of each of the skills. Each skill contains a basic description. Some skills also contain sub-skill descriptions. Sub-skills are often more difficult versions or specializations of the parent skill. Each sub-skill is listed under its parent skill and comes with a base modifier to the total skill bonus when a character attempts to use that sub-skill. Each skill description is followed by its category, stat modifiers and resolution method in bold face.

Acrobatics/Tumbling

When a character needs to show off, to swing from the chandeliers or dive off a roof before the guards catch him, he needs Acrobatics. This is a character's bonus for horizontal dives, rolling, vaulting maneuvers, swinging on stationary objects, or for in-air maneuvers (i.e. flying or levitation). It is also used to decrease the damage from a fall. A character could fall safely up to 1m per 3 skill ranks (round down) with no roll required. By making a Very Hard maneuver, the character may safely fall a distance equal to 1m per skill rank, so long as the character is within 3m of a wall or other surface during the fall. In either case, the safe falling distance is removed from longer falls.

Acrobatics represents a character's training and talent at difficult movements. It comes in handy in many ways.

A medium Acrobatics maneuver can also be used to dodge attacks by using the Bonus resolution method. The result is added to the character's Defensive Bonus (DB) for that one round. The character may also move up to his Base Movement Rate with a bonus to his DB using this method. In other words, a character with a decent Acrobatics skill can dodge and dive and roll, and get out of the way of oncoming sharp objects, bullets, and energy blasts. In the case of bullets and bolts, the character's movements are proactive dodging to present a rapidly moving target rather than reactive responses. When using the Bonus resolution, you only add positive results. Negative results can be ignored. The character doesn't

fumble; he just doesn't manage to make his maneuver.

Acrobatics can also allow a character to more easily disengage and withdrawal from melee. This skill allows your character to dodge attacks and move up to Base Movement Rate (BMR) at the same time as a Medium maneuver. Used in this manner, it will allow a character to move away from his foe, or even past his foe, in such a way that his opponent cannot attack him. By increasing the difficulty of this maneuver one step for each increase in the Pace, the character can increase the distance moved while dodging his foe. Thus, a Hard maneuver would allow the character to move 2 x his BMR, and a Very Hard maneuver would allow him to move 3 x his BMR, etc.

(Athletic – Ag/SD – All-or-nothing)

Acting

When a character needs to pretend to be someone else, he requires Acting. This is a character's bonus for simulating the actions or reactions of others. This is normally used in dramatic or theatrical performances, devising new identities, impersonating known individuals (this will not make you look or sound like an individual, only move and react like him), etc. Those with a high score in this skill are master actors (or master spies). Failure when using this skill results in the character's performance not being believed. Failure can also mean being booed off the stage, harsh reviews from entertainment critics, and impaired future career prospects.

(Artistic – Pr/In – All-or-nothing)

Air Pilot

This skill is used in the piloting of atmospheric craft, such as helicopters and airplanes, or multimodal vehicles in flight. It must also be used when piloting other vessels such as shuttles and spacecraft in atmosphere. When first developed, a character must choose one of the following vehicle classes as the primary subskill:

Airplane (-40): conventional planes

Gravitic (-40): gravplanes, aircars (in gravplane mode), spacecraft in atmosphere

Helicopter (-40): conventional helicopters

(Vehicular – Ag/In – All-or-nothing)

Ambush

Ambush is the measure of a character's prowess at sneaking up on, killing and escaping from a foe, stealthily. To use this skill, the character must approach his foe undetected, and be able to strike before the foe can react. If the character makes a successful Maneuver Roll for Ambush, he attacks his foe and gains surprise and any additional positional modifiers. If the attack is successful, the character gets to add a number equal to his number of ranks in this skill to the *Adjusted Attack Roll* when determining how much damage was done. See Chapter 10, Combat for more details on making an attack. This is an all or nothing adjustment, meaning that the character must use the entire Ambush modifier (i.e. a number equal to his skill ranks in Ambush) or none of it. If the roll fails, the enemy becomes aware of the character; he's waiting for trouble now and cannot be ambushed again. Successful use of this skill also negates all damage caps for the attack that it is used with.

(Subterfuge – SD/Ag – All-or-nothing)

Animal Handling

This skill provides a bonus for the care and feeding of animals, including bedding, hobbling, etc. When first developed, the character must choose which type of animal (e.g. horses, hunting birds, dogs, alien riding beasts, etc.) will be considered as the primary subskill for this subskill. Other animal types should be considered as distinct subskills with a –20 modifier. This skill is normally used on one animal at a time.

Note: All uses of this skill suffer a –20 penalty if employed on alien animals (from the perspective of the character.)

Animal Healing (-20): This is a character's bonus for administering medical aid to injured animals. It allows a character to stabilize or treat light wounds and mild illnesses with a medium maneuver. More serious injuries or illnesses would require more difficult Maneuver Rolls.

Animal Training (-30): This is a character's bonus for training an animal to perform certain actions on command. The process of training an animal normally ends up taming it.

(Outdoor – Pr/In – All-or-nothing)

Appraisal

You raid a supposedly secure bank, liberate the contents of the safety deposit boxes, and make your getaway. But was it worth the risk? Appraisal is a character's bonus for estimating the value of objects or goods. The character may take this as a general skill, or he may specialize in specific types of items or objects, such as alien artifacts, antiques, equipment such as weapons or computers, gemstones, metals, animals, etc.

If the character specializes, then a successful Maneuver Roll will allow him to determine the value of the item to within 5% to 10% of its actual value. If taken as a generalized skill, then a successful maneuver will allow the character to determine the value to within 15% to 25% of its actual value.

Different items will have different values within different cultures. This, along with the general fluctuations associated with the buying and selling of items, is what causes this skill to produce such nebulous results. Failure when using this skill most often results in the character being unable to determine a value or determining an incorrect value.

(General – Re/In – Percentage)

Archaeology

Archaeology is the study of the past, through the discovery and analysis of the surviving traces of past cultures and civilizations. From painstaking surveys of ruined buildings, fragments of tools and possessions, and the discarded detritus of everyday life, scholarly Archaeologists can piece together the reality of past ages. Others seek fame and fortune by locating precious valuables forgotten by time or uncovering mysterious alien artifacts in the hopes of unlocking new technologies.

(Scientific – Re/In – All-or-nothing)

Armor

Armor is heavy, and fighting with it on, no matter how light, is tricky. So you need to practice. Hence this skill. This skill is used to offset the penalties accrued from the wearing of armor and bulky protective clothing (such as spacesuits, "hazmat" gear, and environment suits). Each piece or suit of armor supplies a maneuver penalty to all Agility and Quickness-based skills and abilities. This skill will allow the character to negate some or all of those penalties. However, it cannot reduce a penalty below its minimum. This skill automatically reduces the penalties – no Maneuver Roll is required.

(Physical – St/Ag – Special)

Astronomy

Astronomy is the scientific study of space, stars and galaxies. Astronomers are trained in the location and observation of stellar and planetary bodies using telescopes (employing visible light, radio waves, etc.) and other instrumentation. Given sufficient data, astronomers can infer the presence of celestial bodies and calculate their orbits, determining current and future positions.

(Scientific – Re/In – All-or-nothing)

Audiovisual Recording

A picture can be worth a thousand words. Experts in Audiovisual Recording can capture the poignancy of a moment in a still photograph, video events as they happen, or create cinematographic masterpieces. This skill encompasses all aspects of visual and sound recording, and where appropriate, other sensory stimuli (such as smell, taste, or touch) as well.

(Artistic – In/Re – All-or-nothing)

Beastmastery

Beastmastery is the lost art of animal communication; the knack of understanding creatures so well that you know their moods and their personalities. This is the skill used when breaking in a wild animal or husbanding the herds. When this skill is mastered, an animal will obey all simple and reasonable commands of the character, so long as the command does not put the animal in danger. The Special Modifiers table contains a number of cumulative modifiers for this skill based upon the animal that the character is attempting to master.

When first developed, the character must choose which type or group of animal (e.g. birds, canines, equines, simians, Thalassan waveriders, the forest decapods of Xanadu, etc.) are to be considered the primary subskill for thei skill. All other types are considered distinct subskills with a –20 modifier. The animals controlled by the use of this skill do not have to be tame or trained. An animal will remain tame for a number of minutes equal to the character's ranks in this skill. At the end of that time, the character must start again, and make another roll. This secondary roll gains a +20 bonus for this particular animal. Failure on the initial roll often means that the particular animal cannot be mastered or that it turns overtly hostile to the character depending upon the amount of the failure.

Special Modifiers

-20 Animal belongs to a different biosphere than character
-30 Carnivore
+0 Omnivore
+30 Herbivore
-20 Wild/untamed
+30 Befriended since birth
-20 Low intelligence (small birds, small reptiles, snakes, etc.)
+0 Moderate intelligence, e.g, horses, rodents, many mammals
+50 High intelligence (e.g. apes, gorillas, monkeys, dolphins, etc.)
-10 Solitary or stubborn animals (e.g. domestic cats)
+10 Pack animals (e.g. dogs, wolves, etc.)

(Outdoor – In/Pr – All-or-nothing)

Biology

Biology is the scientific study of living organisms. It includes anatomy (the physical structure of plants and animals), biochemistry (the basic chemistry of living creatures), botany (the study of individual plants and flora), ecology (the study of how living organisms interact with each other and their environment), genetics (the study of how life evolves) and zoology (the branch of biology focusing on animals and fauna).

(Scientific – Re/In – All-or-nothing)

Brawling

Brawling is no-holds-barred hand-to-hand fighting and untrained street fighting. Brawling can use improvised weapons such as chair legs and broken bottles. The use of mainstream weapons such as firearms are forbidden in a brawl (to pull a gun in a brawl is a major breach of street etiquette), though small knives and blackjacks are usually permitted. Standard brawling moves include: kicking, biting, punching, eye-poking, throwing people and objects, and other sundry bad habits your parents worked so hard to break you out of. Brawling attacks normally use a Tiny or Small attack size, with the critical type being determined by the actual attack used (see the critical tables in Chapter 11). Untrained Boxing will do Tiny Martial

Arts Strikes Criticals; untrained Wrestling will do Tiny Grapple Criticals. Failure indicates a miss while a fumble is rolled on the appropriate Fumble Table. Brawling attacks have a Fumble Range of 01-02. This skill is ill suited to the battlefield – but it has certain uses.

(Combat – St/Ag – Combat)

Camouflage

This is a character's skill for concealing an item or another person using the properties of the surrounding environment, such as hiding them in ditches or hollows in the ground, covering them with fallen foliage, daubing them with suitably colored paints in natural patterns, and so forth.

(Subterfuge – In/Ag – All-or-nothing)

Chemistry

Chemistry is the science concerned with the properties of substances and their combinations and reactions. It can be divided into inorganic chemistry dealing with nonliving substances, organic chemistry dealing with substances derived from or potentially forming constituents of life, and metallurgy focusing on metals and alloys. This skill can also be used in the identification and analysis of these substances, and where appropriate, in the refinement, creation and production of materials and synthetic substitutes.

(Scientific – Re/In – All-or-nothing)

Climbing

The climbing skill is used for anything from climbing ladders to scaling the sheer face of a cliff. The normal rate of movement for climbing up a wall with adequate handholds is one half (rounded up) of the character's Base Movement Rate per round. Characters using this skill should make one Maneuver Roll for every 15m climbed where adequate handholds are present. Less ideal (in other words, slippery or even just awkward) surfaces will increase both the difficulty and the frequency of the required rolls. For each difficulty level above medium, subtract 3m from the distance where a Maneuver Roll is required (to a minimum of 3m). The following list provides some sample difficulty ratings for climbing different surfaces.

Routine: Climbing stairs in combat
Easy: Climbing a ladder or knotted rope
Light: Climbing a rope
Medium: Climbing a tree with low hanging branches
Hard: Climbing a stone wall (with frequent hand-holds)
Very Hard: Climbing a rough wall (like a cliff face) or tree trunk
Ext. Hard: Climbing a smooth wall (designed with few hand-holds)
Sheer Folly: Climbing a surface with greater than a 90 degree angle
Absurd: Climbing upside down on a stone surface

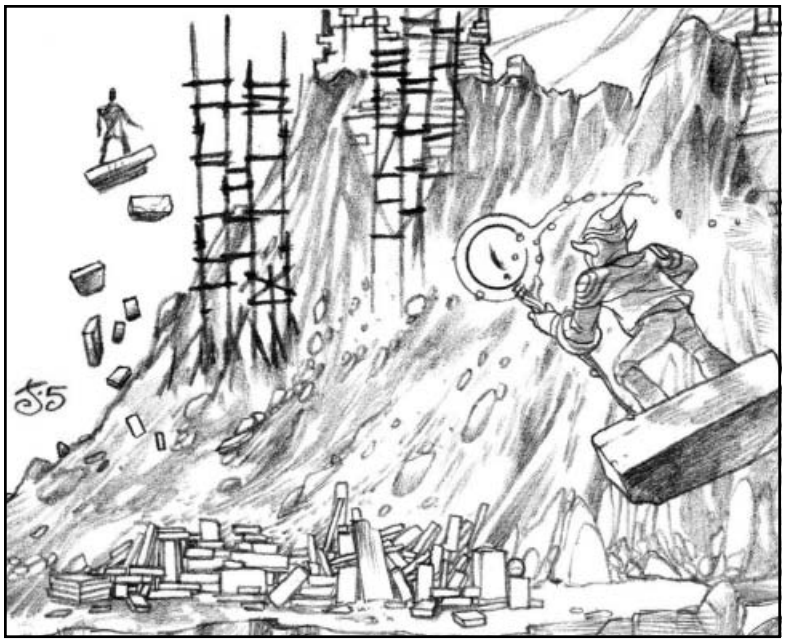
(Athletic – Ag/St – All-or-nothing)

Combat Styles & Maneuvers

Sometimes combat is simply a matter of getting under cover and blazing away at an enemy with your favorite weapon. Sometimes life is more complicated – perhaps you want to drive a car at high speeds while the local hoodlums are laying down a hail of bullets, shoot a weapon out of a foe's hands, or blaze away with a sidearm in each hand. Such things must be learned as skills.

The skill represents a character's bonus for attacking using a special style of combat or maneuver, such as Two Gun Combo or Disarm Foe. Each style/maneuver provides its own special options or bonuses to combat and must be learned separately. A character may decide to use a specific style only at the beginning of his turn during the round, and that style may not be changed until the beginning of the character's turn in the next round, or in any subsequent round. (In other words, having decided that this round you are wearing the "white hat" and want to disarm the enemy trooper, you cannot change your mind half way through and blast him down with both laser pistols, just because you've now realized that the trooper's weapon is a cybernetic extension of his arm.)

When using a style or maneuver, the character must use the lesser of either his style's skill bonus, or his weapon bonus as his Offensive Bonus (OB) for all attacks using the style, unless otherwise stated. Any other uses of the style will use only the style's total bonus.



Blindfighting - When a character cannot see, he receives a -100 to all actions. By using Blindfighting, this modifier is reduced by his bonus with this style automatically without a Maneuver Roll. (i.e. a total skill bonus of 80 means that the -100 modifier is reduced to -20 (-100 +80)). This skill can only reduce the -100 penalty for being blind to zero. The SysOp may determine that conditions are not optimum for use of this skill and require that a difficulty modifier be applied against the skill. (E.g. a lot of confusing noises in the area may make Blindfighting a Very Hard task, so the SysOp assigns the Very Hard modifier (-40) to the use of this skill. This means that this skill bonus has the -40 applied to it prior to the skill bonus being applied to the -100 for being blind.)

(Combat—In/Re – Special)

Combat Driving/Piloting – This is the ability to keep one's head while driving or piloting a vehicle in the heat of combat. It must be learned separately for land, marine, air and space vehicles. Attempting to drive or pilot a vehicle in combat normally incurs a penalty of -50. By using **Combat Driving/Piloting** training, this modifier is reduced by the character's bonus with this style automatically without a Maneuver Roll; (i.e. a total skill bonus of 50 means that the -50 modifier is reduced to -0).

It is possible to increase your Combat Driving/Piloting skill beyond what is necessary to reduce the penalty and receive a bonus for vehicle maneuvers in combat. If the penalty has been reduced to zero, than one-half the skill bonus beyond that may be used as a bonus to offensive piloting, defensive piloting or flying while shooting. For example, if a character's Combat Driving/Piloting skill bonus is 76, they would receive a +13 bonus on their maneuver ((76 – 50) / 2 = 13).

(Combat – In/Ag – Special)

Disarm Foe - In order to attempt to disarm a foe, the character must make a Maneuver Roll in place of his attack, using this skill bonus as a modifier to his roll, and reading the result on the RR column of the Maneuver Table. His target must then roll higher than that number using his OB. If the foe fails, he loses his weapon as it goes flying up to three meters in any direction desired by the character performing the disarm. (Note: this may be used in place of one of the attacks gained through Two Weapon Combo). If this maneuver fails, treat it as a miss or fumble for a normal attack as appropriate. This maneuver must be learned separately for each weapon group. This version of the skill is only used with melee weapons, not thrown, missile or ranged weapons.

Example: *Marc is trying to disarm a knife-wielding gangster using his trusty vibroknife. His skill bonus with disarm foe is 50, and his player rolls a 71, for a total of 121 on the Maneuver Table. This means that the gangster must make a roll adding in her OB, and that the total must be equal to or higher than 105 or else she has been disarmed.*

(Combat—St/Ag – RR)

Mounted Combat - The ability to attack from horseback (or other mounts) must be learned separately for each different type of mount and weapon category. Attempting to attack while on a mount normally incurs a penalty of -80. By using Mounted Combat training, this modifier is reduced by the character's bonus with this style automatically without a Maneuver Roll; (i.e. a total skill bonus of 80 means that the -80 modifier is reduced to -0). Flying mounts incur double this base penalty.

It is possible to increase your Mounted Combat skill beyond what is necessary to reduce the penalty and receive a bonus for attacking from a mount. If the penalty has been reduced to zero, than one-half the skill bonus (rounded down) beyond that may be used as an OB bonus. For example, if a character's Mounted Combat skill bonus is 94, they would receive a +7 OB bonus on their attack ((94 – 80) / 2 = 7).

(Combat - St/Ag – Special)

Ranged Disarm – Using this skill, a character can attempt to shoot a weapon out of a foe's hand. The character must make a Maneuver Roll in place of her attack, using this skill bonus as a modifier to her roll, applying a –40 modifier (because of the intrinsic difficulty of the maneuver) and reading the result on the RR column of the Maneuver Table. Her target must then roll higher than that number using his OB. If the foe fails, he loses his weapon as it goes flying up to three meters in any direction desired by the character performing the disarm. (Note: this maneuver may **not** be used in place of one of the attacks gained through Two Gun Combo). The SysOp may require a malfunction roll for the weapon. If this maneuver fails, treat it as a miss or fumble for a normal attack as appropriate. This maneuver must be learned separately for each weapon category. This version of the skill is only used with modern ranged weapons (1-handed and 2-handed projectile and energy), not melee, thrown, or archaic missile weapons.

Example: *Marc is now trying to disarm a shotgun-toting colonial using his pistol. His skill bonus with ranged disarm is 60, the penalty is –40 and his player rolls a 63, for a total of 83 on the Maneuver Table. This means that the colonist must make a roll adding in his OB, and that the total must be equal to or higher than 100 or the colonist can whistle as his shotgun goes flying.*

(Combat—Qu/Ag – RR)

Two Gun Combo - This style allows a character to use two different weapons in conjunction with each other for ranged attacks. The weapons must be one-handed projectile or energy weapons (see Chapter 10 for definitions), not thrown or archaic missile weapons. The character's OB for both attacks is equal to the skill bonus in the Two Gun combo skill, plus stat bonuses, special bonuses and weapon bonuses. The character can make two separate attacks, one with each weapon, each round. If the character decides to use Dodging Fire (See Chapter 10 for details on Dodging Fire), his OB for both attacks is reduced by the amount that he wishes to transfer to DB (on the 2-for-1 ratio), as this represents the defensive maneuvering he is performing. The weapon in the character's off-hand receives a –20 modifier. This style must be learned separately for every weapon combination. The character also receives +5 for determining his initiative when using this style. The character may not however use the Well-aimed Shot Combat Action in combination with this combat style, but may use both Aimed and Spread Burst Combat Actions. The character must have a number of skill ranks in each weapon equal to or greater than the number of ranks in Two Gun Combo. Each weapon must also be the primary weapon for its group (see Weapon Skills, this chapter).

Example: *Sergeant Latham has the Two Gun Combo (TGC) style with a bonus of 75. Her base OB for using TGC would be 75 with her main weapon (a laser pistol) and 55 with the weapon in her off hand (a flame pistol). If she decided to use Dodging Fire, and add 20 to her DB (costing 40 points of OB), then her OBs would be 35 with her laser pistol and 15 with the flame pistol in her off hand.*

(Combat - St/Ag –Special)

Two Weapon Combo - This style allows a character to use two different weapons in conjunction with each other for melee attacks. The character's OB for both attacks is equal to the skill bonus in the Two Weapon combo skill, plus stat bonuses, special bonuses and weapon bonuses. The character can make two separate attacks, one with each weapon, each round. If the character decides to Parry (See Chapter 10 for details on Parrying), his OB for both attacks is reduced by the amount that he wishes to parry with, as this represents the defensive stance he has taken. The weapon in the character's off-hand receives a –20 modifier. This style must be learned separately for every weapon combination. The character also receives +5 for determining his initiative when using this style. The character must have a number of skill ranks in each weapon equal to or greater than the number of ranks in Two Weapon Combo. Each weapon must also be the primary weapon for its group (see Weapon Skills, this chapter).

Example: *Jorg has the Two Weapon Combo (TWC) style with a bonus of 70. His base OB for using TWC would be 70 with his main melee weapon and 50 with the melee weapon in his off hand. If he decided to parry, and add 30 to his DB, then his OBs would be 40 main weapon and 20 with the weapon in his off hand.*

(Combat - St/Ag –Special)

Computer Hacking

This is the ability to covertly observe computer communications and to infiltrate computer systems undetected. Successful uses of this skill can allow its practitioners to monitor, insert, delete, or modify information in computer systems.

(Subterfuge – Re/In – All-or-nothing)

Computer Operation

This skill covers all aspects of *using* a computer from switching it on to running software applications to switching the computer off. This skill encompasses the ability to organize and store information by computer, and more importantly, how to retrieve specific information.

(General – Re/In – Bonus)

Computer Programming

This skill is used in the analysis, design, implementation and maintenance of software, whether it is a humble word processor, a complex mathematical simulation of hyperdrive engines, or the latest artificial intelligence construct.

(Technical – Re/In – All-or-nothing)

Contortions

When your character is tied up or has to squeeze through prison bars, Contortions can be very helpful. Characters with the Contortions skill can manipulate their bodies to move through small openings or to aid in escaping bonds of various types.

(Athletic – Ag/SD – All-or-nothing)

Crafts

This skill represents a character's ability to work a craft. This skill must be learned separately for each craft. Each Craft skill contains all the knowledge and manual skill required for the character to perform that craft. The following list contains a sampling of possible crafts, and should by no means be considered complete. Crafts are normally low technology skills, most commonly associated with colony worlds and primitive cultures, but occasionally with professionals providing handcrafted and/or replica items.

Armorer: Making of archaic iron or steel armor.

Blacksmith: Making of small iron wares; such as horseshoes, nails, etc.

Bowyer: Making bows and crossbows.

Fisherman: Capture of fish by means of hook and line, spear or net.

Fletcher: The making of arrows and bolts.

Goldsmith: Working of gold into ornamental and functional items.

Jeweler: Cutting and setting of stones and gems.

Stonecutter: Cutting and shaping large stones from a quarry.

Weapon Smith: Making of archaic iron or steel weapons.

(General – Re/Ag – All-or-nothing)

Cyber Control

This skill represents training in the effective use of cybernetic implants. A separate skill must be learned for each class of cybernetic implants (i.e. cybersenses, cyberarms, cyberlegs, etc.). The character must develop a specific number of skill ranks in order to use an implant with extra skill ranks needed for additional functionality.

(Concentration – SD/Re – Special)

Dancing

This skill provides a bonus when trying to perform a previously witnessed dance or while trying to create a new dance.

(Artistic – Ag/Pr – All-or-nothing)

Demolitions

This skill is used when trying to set explosives.

The default difficulty degree for setting explosives is Medium. However, characters may wish to devise bombs and explosives that are much harder to defuse safely. The player must decide upon the difficulty degree for the disarming process and *his* character must succeed at an All-or-Nothing Demolitions maneuver at that difficulty degree in order to set the explosive or bomb. If the maneuver is unsuccessful, the explosive will only partially detonate, fail to detonate, or explode later than expected or in response to different stimuli (SysOp's choice). If the maneuver is fumbled, the explosive blows up in the character's face.

Example: Hamilton needs to rig up a dead man's switch on a captured pirate vessel. He decides that he'll obfuscate the detonation system for his explosives in order to prevent anyone else disabling his insurance policy. His player decides that a Very Hard difficulty degree should suffice and Hamilton fortunately makes a Very Hard Demolitions maneuver. If any of the pirates want to disarm the bombs, they'll now need to succeed at a Very Hard Disarm Demolitions maneuver.

Disarm Demolitions (-20): This subskill covers the even trickier business of disarming explosives. The difficulty degree for disarming explosives is determined by the complexity of the bomb as described above. It will usually be at least Medium. Note that the disarm maneuver **also** incurs the –20 subskill penalty. Fumbling a Disarm Demolitions maneuver when attempting to disarm a bomb will usually detonate it. Failing a Demolitions maneuver may cause a partial or complete explosion (SysOp's choice).

Try not to fumble when using this skill – the consequences will be unpleasant for your character.

(Combat – Ag/SD – All-or-nothing)

Dirty Fighting

Experienced fighters and brawlers know all sorts of dirty tricks to catch their opponent off-guard. Sometimes the one who knows the most tricks wins. This skill is used in conjunction with Brawling and melee combat of all sorts. It can be performed during a combat with the foe being aware of you. However, once this skill has been used against a foe, it may be impossible to catch him off-guard again during that particular fight.

If the character makes a successful maneuver roll for Dirty Fighting, he attacks his foe normally and on a successful hit, the character gets to add a number equal to his number of ranks in this skill to the *Adjusted Attack Roll* when determining how much damage was done. This is an all or nothing adjustment, meaning that the character must use the entire Dirty Fighting modifier (i.e. a number equal to his skill ranks in Dirty Fighting) or none of it. Attacks made using the Dirty Fighting style ignore the damage caps.

(Subterfuge – Ag/In – All-or-nothing)

Disguise

Deception is sometimes necessary during an adventurer's career. When your photograph is on "Most Wanted" posters across a city, it's time to change how you look with a good disguise. Disguise lets your character alter his or her appearance, but not his or her actual physical size or weight, by the application of cosmetics and/or other props. More permanent and substantial alterations require surgery. The disguised person cannot imitate the mannerisms of a specific person, nor sound like him.

(Subterfuge – Pr/SD – All-or-nothing)

Driving

This skill is used in the driving of ground vehicles, such as motorcycles, cars, tanks, armored fighting vehicles, personnel carriers, etc., or multimodal vehicles on land. When first developed, one of the classes below must be chosen as the primary subskill.

Conventional (-20): groundcar, motorbike, truck, van, aircar (in wheeled mode)

Gravitic (-20): gravcarrier, gravtank, gravitic bike, gravitic car, gravitic chair, gravitic truck, gravitic van, aircar (in gravcar mode), gravwalker (in grav mode), seacar (in gravcar mode)

Ground Effect (-20): GEM car, GEM van

Tracked (-20): tank, armored personnel carriers

Walker (-40): gravwalker (in walker mode)

(Vehicular – Ag/In – All-or-nothing)

Duping

Some prefer to call this skill the gentle art of persuasion, or verbal sleight of hand. Then again, the more truthful members of society call it lying. There are times when your character will need to convince a Non-Player-Character to do something that he or she might not ordinarily do, and the use of force is out of the question. By speaking quickly, convincingly, and confusingly, adventurers have been known to dupe hapless victims into doing them "favors". Likewise ambassadors and merchants can use Duping for diplomatic negotiations (Culture Lore, Psychology, Xenology or Xeno Lore may be used to boost the chances of a successful Duping). The Duping skill may be used on a number of individuals equal to the character's number of ranks in this skill divided by five and rounded down. The targets of this skill receive a Will-based Resistance Roll with a +20 modifier.

(Influence – Pr/In – RR)

Electronic Bypass

Whereas the Locks & Traps skill provides its practitioners with the ability to pick mechanical locks and disarm mechanical traps, Electronic Bypass concentrates on the disabling of electrical devices such as alarms, motion, sound and thermal sensors, surveillance equipment, and security cameras as well as cracking safes. Electronic Bypass can also be used to jam electronic communications.

Cracking a safe or bypassing an electrical or electronic device takes at least one round per difficulty level of the device. Thus a Routine safe would take 1 round to open while a Medium difficulty sensor would take 4 rounds to disable and an Absurd difficulty alarm would take 9 rounds at minimum.

Option: If the result of the maneuver to bypass the device was within 20 points of succeeding, the SysOp may determine that the character is having a little difficulty and requires a little more time for the character to open it. In such cases, the character makes a second roll and if successful, the use of the skill takes only one round longer than normal. Failure results in the character being unable to work the device, and he may not attempt that particular device again until he has increased this skill.

(Subterfuge – In/Re – All-or-nothing)

Endurance

A character's Endurance skill bonus is, simply put, his Concussion Hits, a measure of how much damage he can take before passing out. This skill's total is comprised of the skill rank bonus, the stat bonuses listed for this skill, and the Racial Endurance Bonus listed on the Racial Characteristics Table.

Example: Emilia, a human, with a Endurance bonus of +30 has 12 ranks in Endurance, a Self Discipline of 86 which gives her a bonus of +8 and a Constitution of 92 which gives her a bonus of +9. Emilia has a Concussion Hit total of 101 ((10 ranks * 5 = 50) + (2 ranks * 2 = 4) + (Co bonus 9 + SD bonus 8 = 17) + (30 Racial Endurance Bonus) = 101). This means that Emilia can take 101 hits of damage prior to falling unconscious.

(Physical – Co/SD - Special)

Engineering

Technology is the bedrock of civilization in the worlds of the future. Engineering is the skill necessary to maintain existing technology and develop new inventions. Engineering is used in the design, construction, and repair of devices from humble calculators to faster-than-light starships. Characters can use Engineering to discern how an unknown device should be operated. Each branch of Engineering must be learned as a separate skill, and the SysOp is the final arbiter as to which engineering specialties are available in the setting. Some devices will require knowledge of multiple Engineering skills to design and build them. The Engineering skills (in the Tintamar setting) are as follows (SysOps may add others at their discretion):

Civil/Habitat – This is used for the construction of public works such as bridges, buildings, canals, power plants, railways, roads, etc., as well as environmental control and life support systems (for buildings, spaceships, underwater cities, lunar bases).

Computers/Cybernetics – This skill concentrates on the development of computer hardware and the creation of robots, androids, and cybernetic enhancements for implantation into living beings.

Electrical/Commuications – This encompasses communication devices, sensors, electrical devices and electronics of all varieties (except cybernetics).

Magnetogravitic – Covers all aspects of technology relating to the application of magneto-gravitational theory, including the Lagrange Drive and the Shield.

Mechanical – Covers the design and manufacture of devices with mechanical parts.

Power – Covers all aspects of power generation and distribution.

Transport – Development of all forms of vehicles and associated propulsion systems (except magneto-gravitics).

Weapons – Covers all forms of weaponry (personal or otherwise) and defensive measures (including armor)

(Technical – Re/In – All-or-nothing)

First Aid

This is a character's skill in performing emergency medical treatment and using appropriate rapid-acting medications. First Aid can be used to stop bleeding, relieve pain, set broken bones, and stabilize patients who have suffered fatal injuries.

A character with First Aid, and the proper tools, such as bandages, may reduce the number of Hits per round that he himself or somebody else is bleeding per round with a Medium maneuver. Failure in using First Aid means that the character was unable to stop any of the bleeding, while a fumble could mean that the would-be paramedic has actually increased the damage to the patient.

Bleeding Severity	Maneuver Difficulty
Light (1 – 3 Hits)	Medium
Moderate (4 – 6 Hits)	Hard
Severe (7 – 9 Hits)	Very Hard
Dire (10+ Hits)	Extremely Hard

Note that the success level of the roll determines how much bleeding has been reduced.

Example: *After a particularly fierce gun battle, Pieter attempts to perform emergency first aid upon Emilia, who is bleeding at a total of 8 Hits per round. Pieter's player makes a First Aid maneuver, achieving 104 total. This is barely enough for a Medium maneuver, so Pieter has staunched 3 points of bleeding, reducing Emilia's bleeding loss from 8 to 5 points per round. The following round, Pieter's player can only manage 60. Through gritted teeth, Emilia orders Pieter to hand over the medical kit fast – she does not have time for well-meaning amateurs.*

First Aid can also stabilize a patient who has received a wound or wounds that will kill him in a specific number of rounds. Doing so is considered an Extremely Hard maneuver at the very least, and may be even more difficult depending upon how severe the damage actually is. Successful First Aid will not heal any of that damage, but will prevent the character from sliding over into death until the damage can be healed using other methods such as Medical Practice.

First Aid can also be used to set bones (by placing the limb in a crude splint or brace) and treat other injuries such as burns, frostbite, shock, etc. In game terms, this is resolved as a First Aid maneuver where the success level of the roll determines by how much the associated maneuver penalty is reduced. The injury must still heal so the splint, cast, bandage, etc., must remain in place (to reduce the penalty) until that happens.

Maneuver Success Difficulty	Penalty Reduction
Medium	Reduce penalty by 5
Hard	Reduce penalty by 10
Very Hard	Reduce penalty by 15
Extremely Hard	Reduce penalty by 20
Sheer Folly	Reduce penalty by 25
Absurd	Reduce penalty by 30

Note that high-tech medical equipment such as Instantsplints and Catalysis Bandages is much easier to use and effective than primitive or improvised gear.

(General – Re/In – All-or-nothing)

Flying/Gliding

This skill provides the basic knowledge for the use of natural or artificial wings (e.g. feathered wings, parachutes, hang gliders, etc.) and individual antigravity belts (which do not exist in the Tintamar universe), etc. All types of non-combat maneuvers performed while flying/gliding suffer a natural -75 penalty. Attempting to fight while flying or gliding incurs a natural –80 penalty. This skill is used to offset this penalty and automatically reduces the penalty (no roll required).

It is possible to increase the Flying/Gliding skill beyond what is necessary to reduce the penalty and receive a bonus to maneuvers or attacks. If the penalty has been reduced to zero, then half the skill bonus (rounded down) beyond that may be used as a maneuver bonus. For example, if a character's Flying/Gliding skill bonus is 96, they would receive a +10 bonus on non-combat flying maneuvers ((96 –75) / 2 = 10).

(Athletic – Ag/SD – Special)

Foraging/Survival

Exploring strange new worlds is a dangerous business. It requires explorers to endure privations, to give up warm beds in air-conditioned cabins for tents in all weathers, and to swap gourmet meals for basic survival rations. Sometimes the tents are lost, sometimes the rations run out. Then explorers must hunt native animals for their lunch (without becoming a meal for the local predators), and forage for berries, roots, wild vegetables and other plants that will provide nutrition to the desperate. This is a character's bonus for finding water, food, shelter, fire starting (under less than optimal conditions), and other basic survival tasks required when living in the wilderness.

Some environments are so different from an explorer's native habitat that "foraging" is impossible and even survival may be limited to living in an environment suit and ensuring that no damage occurs to that suit, e.g. the aquatic environment for humans who've not been genetically adapted to breathe underwater.

When first developed, one of the environments subskills below should be chosen as the primary subskill. (SysOps may add more environments at their discretion):

Terrestrial:

Arctic (-20): including tundra, glaciers, snowfields, alpine mountains, etc.

Desert (-20): including sandy deserts, rocky deserts, arid plains, badlands, etc.

Forest (-20): including cool and temperate woodlands and rainforests, etc.

Grassland (-20): including plains, prairies, savannahs, steppes, and marshlands, etc.

Jungle (-20): including subtropical and tropical rainforests, jungles, mangrove swamps, etc.

Extreme:

Aquatic (-20): including seas and oceans, specifically underwater habitats

Gasworld (-20): surviving in the atmosphere of a gas giant such as Jupiter or Saturn

Hellworld (-20): worlds where temperatures exceed 100 degrees Celsius, such as Venus prior to terraforming

Iceworld (-20): worlds where temperatures are routinely colder than –150 degrees Celsius, such as Titan

Space (-20): airless worlds and the vacuum of space itself

Subterranean (-20): underground habitats, extended cave systems, etc.

(Outdoor – In/Re – All-or-nothing)

Forensics

This skill is used to collect evidence (such as fingerprints, body fragments such as blood or hairs that might yield DNA, spent ammunition, and so forth) from the scene of a crime. This skill can also be used to remove and dispose of such evidence in order to conceal a crime or obscure the methods and identity of the perpetrator.

(Subterfuge – SD/In – Percentage)

Frenzy

The character may attempt to work himself into a killing frenzy. While the character is working himself into a frenzy, no other actions are allowed. The character focuses on a single target while attempting to frenzy, and once frenzied, killing this target is the only goal of the character.

Each round the character attempts to go into frenzy, he makes a maneuver roll on the Percentage column of the Maneuver Table. This result is recorded each round and added to the previous results. This is done until the frenzy total reaches 200% or above. At this point the character has succeeded in working himself into the frenzy. Beginning on the following round, he gains a number of benefits from this mighty rage.

- The character's mind is reduced to be little more than that of an animal. He will have no thoughts other than attacking the nearest target, and is unable to tell friend from foe.
- Mind influencing psionic disciplines and spells (Psi Disciplines and Attack spells requiring a Will RR) automatically fail when targeted or cast on the berserk character.
- Character cannot use Psi Disciplines, cast spells or activate magic items. Magic items that are persistent (i.e. weapon bonuses, ring of regeneration, etc.) are still in effect.
- Characters cannot parry or use any combat skills or talents except weapon or brawling skills. No custom combat styles may be used.
- Characters using ranged weapons may use the Aimed Burst, Spread Burst, Suppression Fire, and Well Aimed Shot combat actions. They may not use Careful Aim, Dodging Fire, Escape Blast, Minimize Exposure, or Sudden Dive combat actions.
- If using melee weapons, the character will move in the most direct path to his target and fight that target until they are dead If using ranged weapons, the character will move such that he has a clear line of sight to the target and start shooting. The character is cognizant enough to go around obstacles. NPCs, fellow player-characters, and other living things are not obstacles, they are foes, and they will be attacked by the character if they do not get out of his way.
- After killing their target, the character (if armed with a melee weapon) will move to the next closest target in a direct manner and attack it. If armed with ranged weapons, the character will start shooting at the next closest target.
- The character receives a +10 to his initiative roll.
- The character receives a +10 bonus to all attack rolls.
- The character receives a +10 bonus to his Adjusted Attack Roll (added to weapon size modifier).
- The character ignores all Damage Caps.
- The character receives a bonus of +20 against all Stuns while frenzied.
- The only DB bonus the character receives is for armor, shield and magical items (if they exist) (i.e. no Qu modifier, no skill modifier, etc.) Characters will not deliberately use cover (but may benefit from it if there is cover available.)
- The character is not unconscious once he reaches 0 Hits. He will continue to fight on until he is dead.
- The character will ignore all damage until the frenzy is over.
- The character will stay in a berserker rage for a number of rounds equal to his Constitution modifier. During that time, frenzied characters will attack anything in front of them, friend or foe. Once this time is up, the character will collapse in a state of total exhaustion and be unable to move for a number of rounds equal to the amount of time spent in the frenzy. They are then at -20 to all actions for another hour until they have regained their strength.

Breaking the Frenzy: Once the character has entered frenzy, there is only one way to get him to come out of it early. That is by stunning him. Should the character receive a critical that indicates that he receives one or more rounds of stun, and fails his RR against that stun, he immediately drops out of the frenzy. Frenzied characters with Stunblocker neuralware options can be unstoppable.

[Concentration – SD/Co – Special]

Example: *Silth guards have attacked Corporal Maximilian's comrades. Maximilian rages with anger and begins to work himself into a berserker frenzy. On the first round he makes a Frenzy percentage results maneuver roll which results in a 75 (Roll of 35 plus skill of 40). This shows a 70% completion, which is recorded in the berserk pool. On round two, he rolls again and gets a result of 90%, which is added to the pool giving a running total of 160%. On round three, the result is a 80% which brings the grand total to 240%. Maximilian is now berserk for round four. The chief Silth guard will never know what hit him. Hopefully his comrades will be able to drop to the ground and roll out of his way, before Maximilian turns on them in his uncontrollable fury. Maximilian will remain in this frenzied state for 9 rounds due to his constitution modifier of +9.*

Gunnery

Gunnery covers the use of weapon systems such as cannon (archaic and laser), mortars, missiles, and all varieties of vehicle-mounted weaponry. (Weapon Skills encompass personal melee and ranged combat.) Each weapon system type must be learned separately and a list of suggested specializations follows:

Archaic Ballistae: ballistae, bolt throwers, and other mechanical direct-fire weapons, etc.

Archaic Catapults: catapults and other mechanical indirect-fire weapons, etc.

Blackpowder Cannons: antique cannons, (demi-)culverins, carronades, and other gunpowder direct-fire weapons, etc.

Blackpowder Mortars: bombards, primitive mortars, and other gunpowder indirect-fire weapons, etc.

Modern Direct-fire Systems: autocannon, laser cannon, modern cannon, particle beam cannon, plasma cannon, etc.

Modern Indirect-fire Systems: howitzers, mortars, etc.

Modern Missiles: space missiles, standard missiles, surface-to-air missiles, dropping bombs from aircraft, etc.

(Combat – Qu/In – Combat)

Horticulture

"The Sergeant always said that when the war was over, he was going home to Freiland and live out his days on his own farm. So during the False Peace, home he went. Shortly after, the Silth struck Freiland hard. Never heard again from the Sergeant, but I reckon the Silth would not have taken his farm without a real fight."

This skill provides a bonus for the identification and care of plants. It allows knowledge of farming and other plant-raising techniques.

(Outdoor – Re/In – All-or-nothing)

Interrogation

This skill is used to obtain information from an intelligent creature, with or (more usually) without its cooperation. Interrogation can involve word and mind games to catch the victim in an unguarded admission, the use of drugs to reduce inhibitions, sensory deprivation, and threatening or inflicting induced or actual pain. Skilful interrogators are adept at focusing the ramblings of drugged victims into fruitful answers and sifting truth from lies and omissions. Fanatic inquisitors won't stop until the unfortunate prisoner admits what they want to hear, true or not.

(Influence – Pr/In – RR)

Jumping

This skill defines a character's ability to leap over, through, above, or past obstacles. The jump can be from a running or standing start. See the table below to calculate how hard the jump will be in standard Earth gravity – divide the distances by number of "gees" for alternate gravities, see also *Jumping and Gravity*, Adventuring.

Pole Vaulting (-10) - This skill provides a bonus for using a pole to increase your jumping distance. You must have a running start for doing this.

(Physical – St/Ag – All-or-nothing)

Table 6.4 Jumping

	Broad Jump		Pole Vaulting
Difficulty	Running	Standing	High x Wide
Routine	B.L. x 1.0	B.L. x 0.5	1m x 1m
Easy	B.L. x 1.5	B.L. x 0.7	2m x 2m
Light	B.L. x 2.0	B.L. x 0.9	2.5m x 2.5m
Medium	B.L. x 2.5	B.L. x 1.1	3m x 3m
Hard	B.L. x 3.0	B.L. x 1.5	4.5m x 4.5m
Very Hard	B.L. x 3.5	B.L. x 2.0	6m x 6m
Ext. Hard	B.L. x 4.0	B.L. x 2.5	9m x 9m
Sheer Folly	B.L. x 4.5	B.L. x 3.0	12m x 12m
Absurd	B.L. x 5.0	B.L. x 3.5	15m x 15m

B.L. = Body Length is the height of the individual making the jump.

Linguistics

This is a character's skill in using languages. You must learn each language separately, and also learn how to read/write the language separately from how to speak it. Each rank in either Spoken or Written for a language gives you a better ability in that language; ranging from total incomprehension to a complete understanding of the local idiom and inferences, as well as understanding archaic and unusual dialects of the language. Refer to the Chapter 12 Language Table for more detail on the level of understanding given by each rank. You may, with SysOp approval, be able to understand related languages at one half of your skill rank for a language that you already know, although this may require you to make a Maneuver Roll for this skill.

(General – Re/In - Special)

Locks & Traps

Difficult locks and traps are the bane of many adventurers and burglars. This skill enables a character to identify and disable mechanical traps, and open locks and similar devices. This does not provide any bonuses to finding traps. Opening a lock or disarming a trap takes one round per difficulty level of the device. Thus a Routine lock would take 1 round to open while a Medium difficulty lock would take 4 rounds and an Absurd difficulty lock would take 9 rounds at minimum.

Option: If the result of the maneuver to open a lock or disarm a trap was within 20 points of succeeding, the SysOp may determine that the character is having a little difficulty and requires a little more time for the character to open it. In such cases, the character makes a second roll and if successful, the use of the skill takes only one round longer than normal. Failure results in the character being unable to work the device, and he may not attempt that particular device again until he has increased this skill.

(Subterfuge – In/Ag – All-or-nothing)

Machine Operation

This skill is used to safely and successfully operate high-technology tools and complex pieces of machinery, such as laser cutters/drills, semi- automated factory equipment, handheld scanners and scientific instruments (such as electron microscopes). This can be used to give a bonus to operating machinery. Here is a selection of possible specializations – characters should choose one of these as the primary subskill:

Communications (-20) – headset communicators, personal communicators, radio communicators, etc.

Instruments (-20) – mini-microscopes, etc.

Multimedia (-20) – holoprojectors, sensable projectors, etc.

Scanners (-20) – bioscanners, chemanalyzers, DNA scanners, poison sniffers, etc., but not medical scanners

Tools (-20) – laser torch, etc.

(General – Re/Ag – All-or-nothing)

Marine Pilot

This skill is used in the piloting of powered marine and submarine craft, such as boats, ships, and submarines, or multimodal vehicles above or below water (or other liquids). When first developed, one of the following vehicle classes should be chosen as the primary subskill:

Hydrofoil (-20): hydrofoils, seacar (in hydrofoil mode), etc.

Surface (-20): speedboats, etc.

Underwater (-30): submarines, seacar (in submersible mode), etc

(Vehicular – Ag/In – All-or-nothing)

Martial Arts Strikes

This is a character's skill at making unarmed attacks using various martial arts attacks using kicks and punches. Attacks made using this skill are Small attacks on the Martial Arts Strikes Attack Chart. Trained Boxing is treated as a form of Martial Arts Strikes. Martial Arts Strikes has a Fumble Range of 01-02.

(Combat – St/Ag – Combat)

Martial Arts Sweeps

This skill provides a bonus to various unarmed Martial Arts attacks using soft attacks made by grappling, sweeping and/or throwing an opponent. Attacks made using this skill are treated as a Small attack on the Martial Arts Sweeps Attack Table. Trained Wrestling can be treated as an alternate form of Martial Arts Sweeps; wrestling attacks are resolved as Small attacks on the Grapple Attack Table. Martial Arts Sweeps has a Fumble Range of 01-03.

(Combat – St/Ag – Combat)

Mathematics

Mathematics is the science of number, of quantity, of shape and space. It is the language of science, engineering, and technology. **HARP SF** assumes a character is proficient at counting and performing the major mathematical functions (addition, subtraction, multiplication, division, etc.) Mathematics gives its user proficiency in geometry, algebra, calculus, differential equations, statistics, probability, tensors, combinatorics, relativity, etc.

(Scientific – Re/In – All-or-nothing)

Medical Practice

Medical Practice is the diagnosis, study, and treatment of illnesses, injuries, poisons and diseases. It includes the ability to accurately prescribe suitable medications in proper doses to treat physical and psychological conditions – failures in drug therapies can lead to addiction, harmful side-effects, or even death in some extreme circumstances.

Medical Practice also covers surgical procedures, both therapeutic and elective (e.g. cosmetic). A successful use of this skill in these cases can reduce the healing time required for recovering from such procedures by allowing the patient to add the Bonus result of this maneuver to his roll to determine his recovery time.

(Scientific – Re/Ag – All-or-nothing)

Medical Science

Medical Science is the skill used to undertake research into new treatments and therapies for illnesses, diseases, and injuries. This includes pharmaceuticals to develop new drugs, gene therapy, and epidemiology to study diseases themselves.

(Scientific – Re/In – All-or-nothing)

Mental Focus

This skill enhances a character's concentration to aid in a mental effort, be it remembering something specific or to aid in the activation of a Psi Discipline, defusing a bomb, operating temperamental machinery, etc. Successful maneuvers using this skill allow the Bonus result to be added to any mental effort.

(Concentration – SD/SD – Bonus)

Mimicry

This is a character's skill in imitating various sounds, up to and including voices.

Simple sounds (one note/tone)	+20
Multi-tone sounds (birds trilling, etc…)	-10
Very complex (comprehensive words)	-20
Imitate another's vocal patterns	-30
Multisided conversations	-40

(Artistic – Pr/SD – All-or-nothing)

Mundane Lore

"Lore" is what you know about. The better the score, the more you actually know. Each lore skill is learned as a separate skill, which may be as broad or as specific as the character desires, subject to SysOp approval. The broader the lore skill, the less specific the information obtained when the skill is used. Broad lore knowledge will never reveal any specific information except in extraordinary circumstances. The following list gives you a sample of some of the possibilities for the different specialties that could be learned using this skill. Certain Lore skills, at SysOp's discretion, may be attempted using the Bonus resolution method when a successful result can be used to aid another skill; (i.e. Lock Lore could be used to help with the skill, Locks & Traps).

Celebrity Lore – knowledge about famous present-day individuals (and their lives as exposed through the gossip columns)

Cosmography – knowledge about the political and physical stellar geography (e.g. who has colonies where) of the major known starfaring species

Culture Lore – knowledge about the local customs and practices of a specific society

Fauna Lore – knowledge about animals in a given region

Flora Lore – knowledge of plants in a given region

Geography – knowledge about the physical features, climate, and political boundaries of a given planet

Lock Lore – knowledge of various types of locks

History – general knowledge of local history of a specific species, planet, or region

Heraldry – knowledge of different coats of arms and their significance

Religion – knowledge of a given religion and its practices

Sports – knowledge of the rules, famous games, sportsmen, and incidents associated with a particular sport

Tactics – knowledge about appropriate and effective military strategies for particular situations, e.g. Air (for air combat), Battlefield (for archaic artillery, infantry and cavalry operations), Guerilla (for sabotage and small unit operations), Land (for modern ground warfare), Naval (for marine warfare) and Space.

Xeno Lore – general knowledge about the appearance, habits, customs, and outlook of a particular species

(General – Re/Re – All-or-nothing)

Navigation

This skill provides a bonus for determining direction and/or distance when used in conjunction with various aids such as maps, landmarks, a compass, satellite navigation systems, or the stars. This skill includes the concept of orienteering and is applicable on land, water, and air.

Astrogation (-20): This subskill enables a character to plot courses in three-dimensional space for interplanetary and interstellar travel.

(Outdoor – Re/In – All-or-nothing)

Painting

This skill is used in the creation and design of visual art and graphics. It includes pen and pencil sketches and actual painting in watercolors and oil pigments, as well as computer graphics and holographic images.

(Artistic – In/In – All-or-nothing)

Perception

Perception determines how much information and how many clues a character may gain through observation. Unlike the normal method of skill resolution, the SysOp should use the Percentage results of any maneuver to determine how much information a character would notice. A SysOp may not always reveal every modifier being applied to this maneuver, as doing so may actually reveal more to the players than they could find out through the results of the maneuver.

In situations where the character is looking for something specific, the character gains a bonus of +20 to locating the object of his search, but he also suffers a -20 towards spotting other things while searching for that specific object. Some samples of the specific things that a character might be looking for include secret doors, traps, hidden compartments, ambushes, etc.

This skill covers all of a character's senses, but it is important to note that certain conditions or situations may indicate only a single sense be used (e.g. sight, hearing, smell, etc.), and there are certain talents which will also give a bonus to only one sense.

(General – In/SD – Percentage)

Physics

Physics is the science of energy, of matter, and of forces. It has many branches ranging from Astrophysics (the study of the processes of the formation, life and death of stars and galaxies) at one extreme to Particle Physics and Quantum Physics at the submicroscopic level.

(Scientific – Re/In – All-or-nothing)

Pick Pockets

This is your character's skill in relieving others of their valuables without their knowledge. Or, in other words, swiping stuff out of their pockets and not getting caught. Upon a character performing this maneuver, the target is allowed to make a Perception roll, modified by the character's skill bonus to determine if they notice the attempt or not. If the target fails this perception roll, then the attempt was unnoticed.

(Subterfuge – Ag/Qu – All-or-nothing)

Planetology

Planetology is the study of planets, moons, and other natural worlds. It has three principal branches – geology (the science of the planetary crust, rocks, etc.), meteorology (the study of atmospheres, climate and weather), and oceanography (the study of hydrodynamics, seas, and oceans).

(Scientific – Re/In – All-or-nothing)

Play Instrument

This is your character's skill at playing an instrument. Each instrument must be learned separately. You may use the same skill bonus at the discretion of the SysOp, with a modifier of -10 to the skill, for similar instruments. The better the overall roll, the better the performance. The better the performance, the greater the rewards in fame and fortune.

(Artistic – Pr/Ag – All-or-nothing)

Poisoning

Need to solve the small problem of someone's existence? Prevented by circumstances from simply blowing your foe away in a hail of bullets? You need some training in the uses and abuses of poisons! This is a character's bonus for preparing, storing, and removing poisons safely and effectively. It encompasses the character's knowledge of poisons as well as his ability to work with them safely. Hint: Never use a poison you don't have an antidote for! If using a poisoned weapon in combat, keep that antidote handy. Why? Don't worry. You'll figure it out. If you survive.

(Subterfuge – Re/SD – All-or-nothing)

Psi Discipline

Each Psi Discipline is learned as a separate skill. A character cannot activate a Psi Discipline in which he or she has no skill ranks. Further, characters may only learn Psi Disciplines that lie within the character's active Psionic Fields. The more ranks a character has in a Psi Discipline, the easier it will be to activate that Discipline or to achieve more potent effects.

See chapter 12 for full rules relating to psionics.

(Concentration – SD/Pr – Special)

Psi Energy Development

Psi Energy Points (PEPs) represent how much mental energy your character has available to activate psi abilities. The more Psi Energy Points, the greater the energy reserves. The total skill bonus is the number of Psi Energy Points that a character has available. Your Psi Energy Points equals your total skill bonus, which is comprised of your skill rank bonus, your stat bonuses, and your Psi Energy Bonus from the Racial Characteristics Table.

Example: *Humans have a PEP bonus of 10, so if a Human has a Self Discipline stat of 90, a Presence stat of 90 and +2 racial stat bonuses in each stat, then with a single rank of Psi Energy Development, he would have 35 Psi Energy Points (5 [rank bonus] + 10[SD stat bonus] + 10 [Pr stat bonus] + 10 [racial bonus] = 35), since Psi Energy Development uses SD/Pr for its stats.*

Psi Energy Points are expended in the process of activating Psi Disciplines, covered in Chapter 11. When psionic characters expend their Psi Energy Points they will need to recover them as detailed below.

Psi Energy Point Recovery – Characters will regain expended Psi Energy Points over the course of time. A character will regain one quarter of his Psi Energy Points for every two hours of complete rest. Complete rest can consist of sleep, meditation, or unconsciousness.

(Concentration – SD/Pr – Special)

Psychology

Psychology is the science of the mind, whether human or alien. It can be used to study individual and group behavior, providing the possibility of predicting future behavior. Psychology can be employed to diagnose and treat (without drugs) mental disorders and illnesses.

(Scientific – Re/In – All-or-nothing)

Public Speaking

Need to embarrass your best friend at his wedding? Need to convince a skeptical crowd that your policies will protect the world from the fearsome Silth? To do this, you need some practice at public speaking. This is a character's skill in impressing, entertaining, and manipulating large groups or crowds of people. Use of this skill cannot make a group do something that they do not want to do, but it can get them to do something that the group has wanted to do. For example, a character could use Public Speaking to turn an angry group into a lynch mob, or to entertain a group using nothing more than snappy patter and banter.

How well the group responds to the manipulations of the character depends on the general disposition of the crowd to begin with, as well as the goal of the character using this skill. Failure can result in this skill having the opposite effect the character wanted.

The SysOp may allow a Culture Lore, Psychology, Xenology or Xeno Lore maneuver roll (resolved using the Bonus method) to support a Public Speaking maneuver.

(Influence – Pr/In – All-or-nothing)

Resistance

This skill must be learned separately for the four different types of Resistance Rolls; Electronic, Stamina, Will, & Magic. Each version of this skill has a different set of stats that are used. Resistance: Electronic (which protects AIs, virtual persons, robots, and cyborgs from electromagnetic pulses and radiation) uses Co/Pr, Resistance: Stamina (which protects your character from poisons and diseases as well as from being stunned in combat) uses Co/Co, Resistance: Will (which protects your character against psionics) uses SD/SD, and Resistance: Magic uses In/In. Your total bonus for this skill includes your skill rank bonus, your stats, and the appropriate RR Bonus from the Racial Characteristics Table. The total skill bonus is then used as the modifier for any Resistance Rolls that the character has to make. Hint: Every character should have at least one rank in Resistance: Will. Biological characters should have at least one rank in Resistance: Stamina in order to have any chance of resisting stun injuries. In campaigns where magic is real, get a rank in Resistance: Magic. AIs, virtual persons, and robots may develop Resistance: Electronic; cyborgs who have the correct neuralware implant option (EMP Biofeedback) may also develop this skill (see Chapter 11).

(General – varies/varies – Special)

Riding

"First time I got on a horse, damn thing bucked and I landed on my ass. Second time I got on a horse, damn thing bit me first, then bucked and I landed on my ass and I was bruised for weeks. Third time I decided to listen to what the trainer fellow had to say."

"Riding" represents a character's skill at riding and controlling a mount. For obvious reasons, a character must choose one general type of mount (Riding Dogs, Horses, Camels, etc.) as the primary subskill. All other mount types are considered distinct subskills with –20 modifiers. A single rank in this skill is enough to keep a character from falling off the mount being ridden while more ranks gift him with greater control of the mount. The more ranks a character has, the higher the skill bonus, and the better chance he has of retaining control of the mount when it is startled, scared, or hostile. It also helps the character assert mastery and gain control of a mount that he is unfamiliar with.

Note: All uses of this skill suffer a –20 penalty if employed on alien animals (from the perspective of the character.)

(Outdoor – Ag/SD – All-or-nothing)

Rope Mastery

The Rope Mastery skill encompasses knot recognition, knot-tying, braiding, and splicing ropes, or throwing a rope or other flexible line (throwing a lasso). This skill may also be used for performing maneuvers not covered by other skills (acrobatics/tumbling, climbing, etc.) when suspended from a rope or similar flexible line.

(General – Re/Ag – All-or-nothing)

Sailing

The Sailing skill covers the handling of all oar-powered and sail-powered boats and ships. It includes the skills required to control and guide these crafts as well as perform routine maintenance. Powered marine and submarine craft are covered by the Marine Pilot skill.

(Outdoor – Ag/Re – All-or-nothing)

Sculpting

This skill is used in forming (by carving, etching, molding etc.) three-dimensional figures and shapes in relief (projections from the surface) or in solid materials. This skill does not give its possessor the ability to work materials without appropriate tools.

(Artistic – In/Ag – All-or-nothing)

Signaling

Signaling is the skill for sending and receiving information between two parties, using some form of non-verbal communication. It covers receiving information (e.g. through detecting power emanations, intercepting radio signals, etc.) using passive and active sensors that was not intended for the character and sending deliberately confusing information (i.e. electronic countermeasures) to interfere with someone else's passive and active sensors. Characters attempting to communicate with each other must know the same form of signaling being used in order for complete messages to be passed without error. Signaling can be divided into the following speciality subskills – one of which must be chosen as the primary subskill:

Mathematical Encoding (-40): RSA public-key cryptography, DES cryptography, one-time pads, etc.

Physical Encodings (-40): includes sign language and lip reading, etc.

Sensors & Countermeasures (-40): use of passive and active sensors for detection and electronic warfare

Substitution Encoding (-40): includes Morse code, use of flags such as semaphore, substitution ciphers, etc.

(General – Re/In – All-or-nothing)

Singing

The art of Singing covers a character's skill in vocally reproducing musical tones and/or words. Note that although a character may perform a song in a language that they do not know, it does not allow them to gain any understanding of the language used in the song.
(Artistic – Pr/In – All-or-nothing)

Sniping

"Sniping" is the ability to make very precise attacks using thrown or missile weapons, including primitive weapons such as bows and slings as well as certain types of modern ranged weapons (i.e. only the 1-Handed Energy, 1-Handed Projectile, 2-Handed Energy and 2-Handed Projectile weapon groups). To use this skill, the character must approach his foe undetected, and be able to strike before the foe can react. The character may not be more than two Range Increments from his target in order to use this skill. (This range limit is raised for characters with the Telescopic Eyes Talent, scopes fitted to their weapon, or Telescopic Focusing cyberware or cybertech.) If the character makes a successful Maneuver Roll for Sniping, he attacks his foe and gains surprise and any additional positional modifiers. If the attack itself is successful, the character gets to add a number equal to his number of ranks in Sniping to the *Adjusted Attack Roll* when determining how much damage was done. See Chapter 10, Combat for more details on making an attack. This is an all or nothing adjustment, meaning that the character must use the entire Sniping bonus (i.e. a number equal to his skill ranks in Sniping) or none of it. He is not allowed to use only a portion of this modifier; he must use the whole thing. Failure results in the foe knowing that the character is there, removing any further opportunity of the use of this skill at this time. Successful use of this skill also negates all damage caps for the attack that it is used with.
(Subterfuge – SD/Ag – All-or-nothing)

Space Pilot

This skill is used in the piloting of spacecraft, from escape pods and shuttles to starships of any size, when in space or hyperspace (but not in atmosphere). Air Pilot must be learned for atmospheric travel. When first developed, one of the following vehicle classes must be chosen as the primary subskill:

Pod (-20): escape pods, maintenance pods, eva suits

Starfighter (-40): single and 2-person starfighters, etc.

Starship (-40): corvettes, cruisers, destroyers, frigates, freighters, scoutships, shuttles, etc.

(Vehicular – Ag/In – All-or-nothing)

Sports

This skill encompasses individual and team games, such as tennis, golf, soccer, baseball, competitive running, skiing, etc. Each sport must be developed as a separate skill and includes knowledge of the rules and techniques.
(Athletic – Ag/Co – All-or-nothing)

Stalking & Hiding

This is a character's skill for using silence, camouflage, and shadows to conceal his presence. Stalking is the ability to do this while moving at no more than one half a character's Base Movement Rate, and Hiding is the same skill used when stationary.
(Subterfuge – SD/Ag – All-or-nothing)

Story Telling

"So there I was…, stop me if you have heard this one before…" This skill provides a bonus for telling interesting and exciting stories and tales. It encompasses knowledge on pacing the story and on how to build suspense on the part of the listener or reader.
(Artistic – Pr/In – All-or-nothing)

Streetwise

This skill represents a character's awareness of events in the underworld society of your location. It also includes the ability to make contacts with those who run and live in the underworld society.
(Subterfuge – Pr/In – All-or-nothing)

Swimming

This skill provides a bonus for staying afloat and moving while in water. A minimum of one rank will keep a character from drowning in water over his head. Further ranks will aid him in making headway against currents, to stay afloat for longer periods of time without touching ground, to swim longer distances, to move faster in the water, and to perform other maneuvers while swimming. With a successful Maneuver Roll, a character can move up to one half of his Base Movement Rate each round when swimming.

Wearing armor while swimming is very difficult. If the character is wearing archaic armor, then increase the difficulty of the maneuver by 1 step for each base type of armor worn (soft leather=+1 difficulty severity increase, rigid leather=+2, chain=+3, plate/chain=+4, plate=+5). If the character has Armor by the Piece, then use the nearest equivalent to the above types before making difficulty severity modifications. If the character is wearing modern or futuristic armor, then apply a –10 penalty for every 20 points of Maximum Maneuver Penalty (round up) allocated to the armor (e.g. Mature Light Body Armor has a Maximum Maneuver Penalty of –45, yielding a –30 penalty to the maneuver.)

All swimming maneuvers are also modified by triple the maneuver penalties of the armor (after the Armor skill is applied) worn by the character.

(Physical – St/Ag – All-or-nothing)

Tracking

This skill provides a bonus for identifying, and following tracks and trails. A trail can consist of footprints, broken branches, crushed grass, hanging pieces of cloth, etc. Detailed information can be obtained through a successful Maneuver Roll, such as the type of creatures who left the trail, the number of them, the weight of the creature, how fast it is moving, etc., depending on the nature of the tracks. Such things as the age of the trails, terrain, and weather conditions between the time the trail was made and the time the character is attempting to follow it can make a trail more difficult to follow. When tracking a person or creature, the SysOp should require periodic Maneuver Rolls to see whether or not the character has lost the trail or gone astray, or gained even more information from the trail.

(Outdoor – SD/In – All-or-nothing)

Trading

This skill provides a bonus for any maneuvers involving bargained transactions that include an exchange of information, money, goods and/or services. This skill is just as applicable to corporate and government trade negotiations as it is to haggling with a dealer in starship spare parts. The better the Maneuver Roll, the better the deal the character gets. This skill uses the trading skill of the other person as a negative modifier for the skill of the character. Subtract 100 from the percentage result to determine how much of a discount the character received, or how much extra he paid (if the adjusted result is negative) for his trade items.

The SysOp may allow a Culture Lore, Psychology, Xenology or Xeno Lore maneuver roll (resolved using the Bonus method) to support the Trading maneuver.

(Influence – Pr/In - Percentage)

Trickery

This skill provides a bonus for performing confusing sight tricks, mind games, chicanery and sleight-of-hand in order to distract a person or persons from what you are actually doing. The target of this skill is allowed to make a Resistance Roll (RR) versus the use of this skill, using his Perception skill as a bonus to the Resistance Roll.

(Subterfuge – Pr/SD - RR)

Vocation

This set of skills encompasses the training and specialist knowledge gained by people through study and

on-the-job experience in everyday occupations. Each Vocation is a separate skill – a number of possible Vocations are described below:

Administration – This covers record-keeping and bureaucratic procedures

Crewmember – This covers the workings of a spacecraft (military or civilian), particularly safety regulations, damage control procedures, basic maintenance, and shipboard etiquette.

Soldiering – This covers knowledge relating to military organization and military etiquette.

(General – In/Re – All-or-nothing)

Weapon Skills

This skill provides a bonus for wielding weapons in combat. Weapon Skills are divided into seven weapon classes (1 Handed Concussion, 1 Handed Edged, Missile, Modern Ranged, Pole Arms, Thrown, Two Handed). Each of those weapon classes is further divided into a number of individual weapon groups. Those groups, in turn, are broken into the list of individual weapons. SysOps will find a much more complete list of archaic weapons (i.e. from the 1 Handed Concussion, 1 Handed Edged, Missile, Pole Arms, Thrown, and Two Handed classes) in HARP – the list presented here is only a representative sample.

Learning Weapon Skills: Weapon skills are learned in weapon groups (Short Blades, 1-Handed Energy, 2-Handed Energy, Spread Weapons, etc.). When your character learns a particular weapon group, your character selects one weapon from that group to be the default weapon. Your character receives his or her full bonus when using this weapon. All other weapons in the group are used with a -10 modifier.

Example: *Dack learns the 1-Handed Energy weapon group and chooses Laser Pistol to be his default weapon. His skill in the 1-Handed Energy weapon group is +29, so +29 is his skill with the laser pistol. He can also use other weapons from the 1-Handed Energy weapon group, i.e. Blaster Pistols, Electrostunners, Laser Dazzlers, Miniblasters, Minilasers, and Sonic Stunners with a skill of +19 (29 – 10).*

To change the default weapon, the character must spend one week training with the weapon that he wishes to become the new default weapon for the group. Once that week is up, only the new default weapon may be used at the full bonus.

The 1-Handed Edged, 1-Handed Concussion and Modern Ranged weapon classes are special in that the weapon groups which comprise them have many similarities in how the specific weapons are used/operated. Firing a laser pistol (1-Handed Energy) is very much like firing a firearm such as a revolver (1-Handed Projectile), for instance. Consequently having some skill in one of the weapon groups in these weapon classes translates into a lesser degree of skill with the other weapon groups in the same weapon class. Specifically, other weapon groups within the same class may be used with one quarter of your character's skill bonus for any known group within that class.

Example: *Dack's skill with 1-Handed Energy weapons is 29, 15 from skill rank bonus (a whole three ranks!) and +14 from stats. One-quarter of his skill bonus is +7 (29 / 4 rounded down), which serves as his skill bonus with any weapon in the other weapon groups of the Modern Ranged weapon class. If Dack is forced to resort to using a revolver or a hunting rifle, he can claim +7 as his skill.*

Note: For the other classes (Missile, Pole Arms, Thrown and Two Handed), no bonus is given to other groups within the same class, but the modifier for different weapons within a given group still applies.

Note: Pole Arms are unique in that they may be used equally well either one-handed or two-handed. If used one-handed, they do a maximum of a Medium critical. If used two-handed, they do a maximum of a Large critical.

Note: Two weapons are listed that may be used either one handed or two handed, namely the Katana and Nunchaku. If a character has skill in using either of these weapons one-handed, he may use it two-handed with a – 20 modifier (and vice versa), without having to learn the other weapon group separately.

Example: *If a character wields a Katana one handed using his Long Blades skill bonus of +50, he may use the Katana two handed with a bonus of +30 (50 – 20 = 30) without having to have the Great Blades skill. If he happens to have the Great Blades skill, then the character has the choice of using either the Great Blades skill bonus, or the Long Blades skill bonus with a -20 modifier.*

The following list contains the different weapon skill groups and categories, and the weapons that can be used within each of the individual categories. The equipment lists (See Chapter 8 Equipment Lists) contain the attack size and type for each individual weapon.

(Combat – St/Ag - Combat)

Table 6.5 Weapon Groups		
Weapon Class	**Fumble**	**Individual Weapons**
1 Handed Concussion		
Chains Plus	01-05	Neurowhip, Nunchaku (1H)
Clubs	01-02	Club (1H), Stunclub
1 Handed Edged		
Axes	01-02	Hand axe
Long Blades	01-03	Broadsword, Katana (1H), Saber, Scimitar, Vibrosword
Short Blades	01-02	Dagger, Knife, Vibroknife
Thrusting Blades	01-03	Rapier, Foil
Missile		
Bows	01-03	Composite Bow, Long Bow, Short Bow
Crossbows	01-02	Heavy Crossbow, Light Crossbow
Slings	01-04	Sling
Pole Arms		
Pole Arms	01-04	Harpoon, Javelin, Spear
Thrown		
Grenades	01-05	Grenades (all types)
Pole Arms Thrown	01-04	Harpoon, Javelin, Spear
Thrown Blades	01-03	Dagger, Dart, Hand Axe, Knife, Shuriken
Thrown Projectiles	01-06	Improvised weapons
Two Handed		
Great Blades	01-04	Battle Axe, Katana (2H)
Great Chains	01-06	Nunchaku (2H)
Long Spikes	01-03	Pick
Staves	01-04	Club (2H), Quarterstaff, Spear
Modern Ranged		
1-Handed Energy	01-02	Blaster Pistol, Electrostunner, Laser Dazzler, Laser Pistol, Miniblaster, Minilaser, Sonic Stunner
1-Handed Projectile	01-03	Holdout Gun, Needle Pistol, Pistol, Revolver
2-Handed Energy	01-02	Assault Blaster, Electrorifle, Hunting Laser, Assault Laser, Sonic Stunrifle
2-Handed Projectile	01-03	Assault Rifle, Hunting Rifle, Needle Rifle, Submachine Gun
Handheld Launchers	01-04	Grenade Launcher, Grenade Launcher Attachment
Large Launchers	01-05	SAM Launcher, Tankbuster Launcher
Spread Weapons	01-04	Autoshotgun, Flame Pistol, Flame Repeater, Flame Rifle, Pacifier Pistol, Shotgun
Support Energy	01-04	Light Support Blaster, Medium Support Blaster, Heavy Support Blaster, Light Support Laser, Medium Support Laser, Heavy Support Laser
Support Projectile	01-05	Light Machine Gun, Medium Machine Gun, Heavy Machine Gun

SysOp's Choice: Energy Weapons

Some SysOps may consider Strength an inappropriate stat for 1-Handed Energy and 2-Handed Energy Weapons, owing to their lack of recoil and relative mass. For added realism, SysOps may choose to use Ag/Ag for these weapon groups.

Writing

This skill is used by any character who wishes to compose poetry, short stories, novels, or other works of fiction. Writing also covers journalistic writing where the emphasis is on accurate and concise reporting of factual information.

(Artistic – In/Re – All-or-nothing)

Xenology

Xenology is the study of the societies, customs, habits, outlook, and trends (cultural, linguistic, technological, etc.) in intelligent species and their cultures. It can include aspects of how biology, evolution, and environment shape the behavior and development of a species.

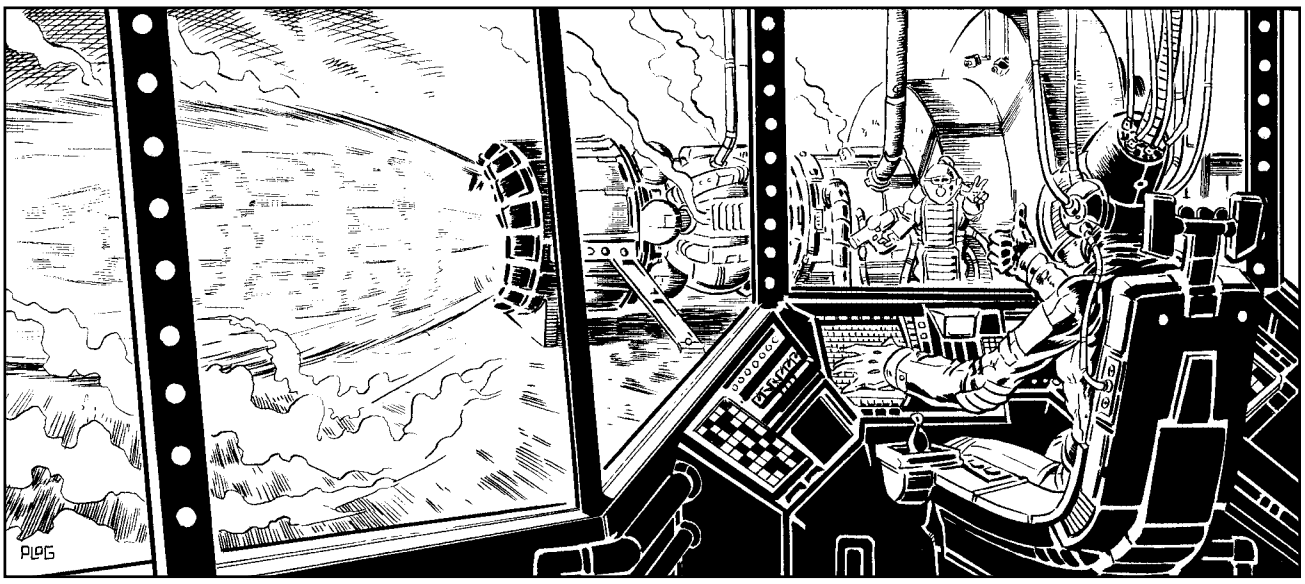
(Scientific – Re/In – All-or-nothing)

Zero-G Maneuvering

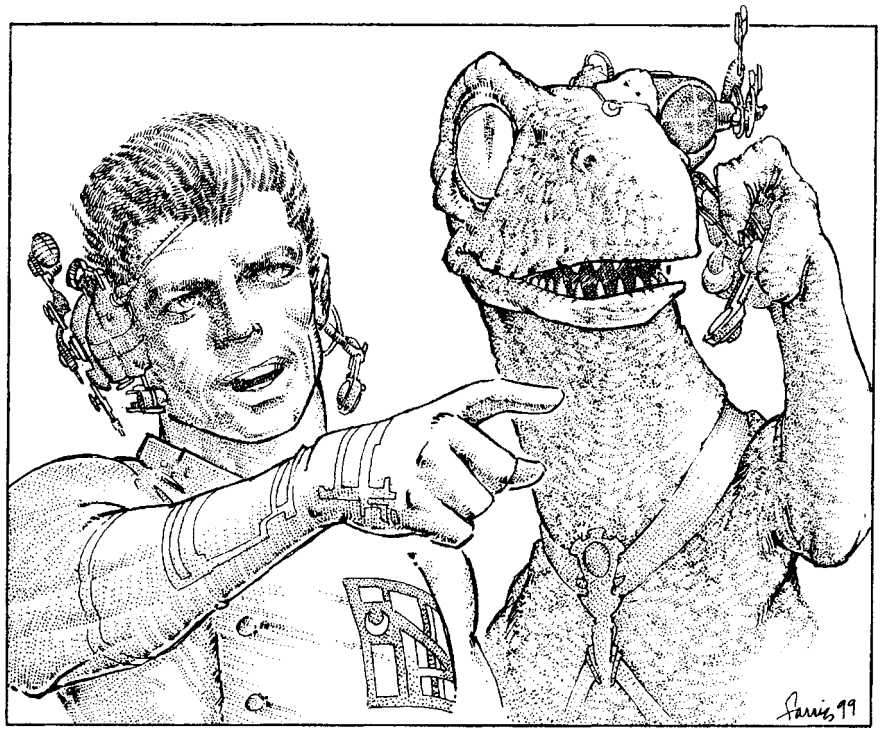
In zero-gravity and micro-gravity conditions in space, in orbital habitats and on comets, moonlets, and many asteroids, astronauts experience "weightlessness". Objects no longer fall to the floor but float or drift in the air. A misjudged leap can catapult an explorer into orbit around a tiny worldlet, and all movement is in slow motion. Reactions, which rely on the equivalence of weight and mass/inertia, betray their possessor. All physical maneuvers and actions (except melee, missile and ranged projectile combat) attempted in zero-gravity and micro-gravity conditions suffer a natural –75 penalty. Melee, archaic missile, and modern ranged combat using projectile weapons suffer a natural –100 penalty. To combat this problem, spacers can resort to artificial gravity or learn this skill. The Zero-G Maneuvering skill is used to offset these penalties and automatically reduces the penalties (no roll required).

It is possible to increase the Zero-G Maneuvering skill beyond what is necessary to reduce the penalty and receive a bonus to maneuvers. If the penalty has been reduced to zero, then half the skill bonus (rounded down) beyond that may be used as a maneuver bonus. For example, if a character's Zero-G Maneuvering skill bonus is 88, they would receive a +5 bonus on non-combat zero-g and micro-gravity maneuvers ((86 –75) / 2 = 5).

(Physical – Ag/SD – Special)



Talents and Other Options



Heroes (and Villains Too!) often have extraordinary abilities, exotic genetic heritages, or secret, special knowledge. Collectively, these are referred to as Talents. Talents are purchased with Development Points.

Certain Talents may only be purchased during character creation, like the Latent Psionic Talents, but most may be learned any time a character goes up a level. Players are urged to provide the System Operator (SysOp) with plausible reasons for allowing a character to purchase the selected Talent. To simplify this process, most of the Talent entries only contain descriptions of the effects of the Talents. The player should work with the SysOp to find a way of describing how the talent works so that it fits within the SysOp's setting.

While a player is not limited in the number of talents he may purchase, he should always check with his SysOp for approval of a Talent as certain Talents may be inappropriate for the SysOp's setting or may be too powerful for the SysOp's intended campaign power level.

Unless otherwise stated in the description of the talent, a character may normally acquire a talent only once. In particular, when a character already possesses a Talent as an evolutionary adaptation peculiar to his species, e.g. Lightning Reflexes or Enhanced Senses, the character may not take that Talent as a professional ability. Instead, the player should choose another Talent from the set available for the chosen profession.

Additionally, there are a couple of talents that have different costs for differing levels of ability. The character may gain the lower level, or the higher level without purchasing the lower powered version, but if he has the lower powered version and decides to later acquire the higher powered version, he must still pay the full cost for the higher powered version.

Example: *Alison decides to purchase the Talent, Regeneration, for her character. She does not have enough DPs to gain the Major version, so only purchases the Minor version. She later wants to increase that to the Major version, therefore she must pay the full cost of Regeneration (Major) to increase the ability from healing one concussion hit per minute to healing two concussion hits per minute. Her character does not gain the ability to regenerate at 3 concussion hits per minute.*

Player's Note: When purchasing talents after the start of play, the Player may have to wait until the SysOp can work into the game the background story provided by the player. To speed things up, the player should try to create a background story for the talent that can happen during the time they spend training.

SysOp's Note: When working in the background stories for talents, the SysOp should do this as soon as is appropriate, and well before the characters gain enough experience to go up another level. Sometimes acquiring a new Talent may require a short adventure of its own.

Example: *Alison's character has gone up a level and now has the Development Points necessary to purchase the Regeneration (Major) Talent. Alison's character does not want the authorities to know that she is about to be augmented, so this means calling in underworld favors in order to find a discreet medical facility and physicians who won't ask questions. The SysOp likes the idea as it provides him with an opportunity to introduce the whole party to the crime bosses of El Dorado. Some of the other players are now also interested in bio-augmentation of their characters. The rest of the session is spent contacting and negotiating with the crime gangs, before all the characters are prepared for enhancement. The other characters who are not involved in such substantial augmentation have some time off to train and catch up with personal matters. Meanwhile the extended downtime allows the SysOp to advance the timeline for the latest Silth threat, so that the Silth will be ready when the characters are.*

SysOp's Choice: Genetic Augmentation of Adult Characters

One principal technique of gene therapy is that a tailored virus is deliberately injected into the cells of a patient. The virus then infects the cells replacing damaged or missing DNA (or RNA) with healthy DNA (or RNA). This option takes gene therapy a stage further – tailored viruses alter the DNA of the recipients genetically reengineering an adult individual while medical nanites and cloned stem cells (with the new DNA) construct the new portions of the patient's body.

Characters who wish to be genetically augmented in adulthood (i.e. at second level or higher) must be admitted to a suitable medical facility and be approved for augmentation. (Characters with criminal leanings or who wish to avoid their new details being registered with governments should find more discreet hospitals and physicians.)

Augmentation is an expensive process in terms of time and money. Reengineering the body, recovering fitness and health, and adjusting to the altered body can take weeks of time. Some of this time is spent in a suitable regeneration tank in an induced coma, but even during the later convalescence phases of the treatment, characters may be effectively out of action.

The exact amount of time for augmentation is given by the following formulae:

- 1 week per Development Point of the Genetic Talent for Early augmentation technology;
- 3 days per Development Point of the Genetic Talent for Mature augmentation technology;
- 1 day per Development Point of the Genetic Talent for Advanced augmentation technology.

Some characters will be unwilling to endure enforced bedrest. After the first quarter (round up) of the augmentation period is complete, patients can be up and about, albeit at a penalty to all maneuvers equal to the DP cost of the Genetic Talent. Patients can receive additional medical treatment to reduce this penalty to zero – this requires a successful All-or-Nothing Medical Practice with a negative modifier equal to the Talent's DP cost and must be made each day to eliminate the penalties until the full augmentation period is over. (Note: Some SysOps may choose to reduce the penalty gradually).

The financial cost (including regeneration tank time, medical supervision, convalescence supervision and retraining) is as follows:

- 20,000 credits per Development Point of the Genetic Talent for Early augmentation technology;
- 10,000 credits per Development Point of the Genetic Talent for Mature augmentation technology;
- 5,000 credits per Development Point of the Genetic Talent for Advanced augmentation technology.

The player must also expend the requisite Development Points as normal for the character to actually gain the Talent.

Example: *Marc has volunteered to join an expedition to explore the frozen world of Poliahu. To increase his chances of survival, he has consented to genetic augmentation in order to acquire the Cold Resistance (Major) Talent. This Talent costs 20 DPs. The procedure will take 60 days (20 DPs x 3 days) to complete and cost 200,000 credits (20 DPs x 10,000) at a Mature technology stage. Fortunately for Marc, Translight Survey megacorporation is footing the medical bill. After 15 days, Marc is out of the regen tanks and can leave the hospital wing. He will be at a penalty of –20 to all maneuvers for the next 45 days. On any day when his physician succeeds at an All-or-Nothing Medical Practice maneuver (with –20 penalty), Marc's penalty is reduced to zero for that day.*

In the unlikely event that a character wants a genetic augmentation reversed, the time taken and financial cost to remove it are identical to the time and cost to make the original change. However, the character does not need to expend Development Points to return to normal – but the Development Points spent on the former Genetic Talent are forfeited.

Enterprising player-characters with medical training, access to at least one regeneration tank, and the appropriate DNA encodings for Genetic Talents (doubtless acquired illegally from a medical database) might want to save or make some credits by performing augmentation procedures themselves. If so, halve the financial cost of the augmentation. DP cost and time taken remain the same.

In addition, the PC physician must make an Extremely Hard (-60) Medical Practice maneuver for each full week taken by the procedure. Any failed maneuvers will add two extra weeks to the procedure. Any fumble will mean the process must be restarted from scratch.

Master Talent List

SysOp's Note: The SysOp should examine the list of talents closely to determine if any talents are unsuitable for his or her campaign setting.

Talents

Academic Specialization

The character has concentrated his efforts in a particular area of academic study, and gains a +20 bonus in one chosen Mundane Lore. This Talent may be taken multiple times, but must be for a different Mundane Lore each time.

Cost: 10

Accelerated Healing

The character heals extremely fast. For him, all natural recovery times are halved. The amount of time required by psionic or magical healing (if any) is not halved.

Cost: 10

Active Psionic Field

The character has unlocked his potential to use Psi Disciplines from a chosen Psionic Field with Tier 1 effects. The character must have already purchased the corresponding Latent Psionic Field for that Field and must still develop the necessary Psi Discipline skills. Players who wish their characters to create higher Tier effects must purchase Active Psionic Field multiple times. Each Tier for the same Field has a different cost: Tier 1 costs 10 DPs, Tier 2 15 DPs, Tier 3 20 DPs, Tier 4 25 DPs and Tier 5 30 DPs. Each distinct Psionic Field must be developed separately.

Cost: 10, 15, 20, 25 or 30

Additional Profession

A character must be at least second level to choose this Talent. This Talent allows a character to add one additional profession to those that he already has, each time this Talent is purchased. The character gains the Favored Categories of the new profession, replacing those of his old profession. The character may select and gain one professional ability from his new profession. This is the only professional ability that he gains from adding the new profession.

Upon gaining a new level, the character must decide which profession he wishes to advance.

Example: *Stephen has decided that his Researcher is going to pick up a level of Soldier and has purchased the Additional Profession talent. Now he must select which professional ability he wants for his character. His choices are: Lightning Reflexes, Martial Arts Training, Speed Loader, or the +10 bonus to a Combat skill of his choice.*

Note: This talent must be purchased first, before anything else, if it is purchased during the level that it is gained.

Cost: 20

Agile Defense

This Talent allows a character to add 2 x his Agility Bonus to his DB in addition to the bonus gained from Quickness. However, the character only gains this bonus if he is not wearing any armor heavier than Reinforced Ballistic Armor or Soft Leather, not carrying a shield larger than a Buckler and not wielding a 2 handed weapon.

Cost: 25

Alien Affinity

The character does not suffer the normal –20 modifier when using Animal Handling, Beastmastery, or Riding skills on alien creatures.

Cost: 10

Table 7.1 Master Talent List

Cost	Talent	Cost	Talent	Cost	Talent
10	Academic Specialization	15	Heat Sense	30	Nullmind
10	Accelerated Healing	25	Heat Vision	20	Outdoorsman
varies	Active Psionic Field	20	High Gravity (Minor)	15	People Person
20	Additional Profession	40	High Gravity (Major)	10	Physician
25	Agile Defense	5	High Gravity Training	10, 15, 20, 25	Poison Sac (Nerve)
10	Alien Affinity	10	High Pressure Tolerance (Minor)	10	Portage Skills
20	Ambidexterity	30	High Pressure Tolerance (Major)	20	Psionic Reach
10	Artistic	20	Hotshot Pilot	10	Quick Calculator
10	Artistic Training	10	Improvisation	10	Quiet Mind
15	Athletic	10	Infrasound Hearing (air)	20	Quiet Stride
25	Bane	15	Infrasound Hearing (water)	20	Radiation Resistance (minor)
varies	Biosculpted Body	30	Instinctive Defense	40	Radiation Resistance (major)
15	Blazing Speed	20	Instinctive Evasion	15	Reduced Sleep Requirement
10	Calming Voice	20	Intuition	15, 30, 45	Regeneration
10	Cold Resistance (Minor)	10	Judge of Value	10	Scientific Specialization
20	Cold Resistance (Major)	varies	Latent Psionic Field	10	Scholar
20	Combat Awareness	20	Lesser Resistance (Stamina)	10	Shield Training
10	Computer Wizard	20	Lesser Resistance (Will)	10	Skill Specialization
5, 10	Cyber Compatibility	10	Lightning Reflexes	40	Space Adaptation
30	Dark Vision (Greater)	20	Logical Mind	15	Spatial Boost (Radius)
15	Dark Vision (Lesser)	10	Low Gravity (minor)	25	Spatial Boost (Targets)
25	Dense Musculature	15	Low Gravity (major)	10	Speed Loader
20	Download Form	10	Low Pressure Tolerance	10	Speed Reader
15	Electrical Sense	10	Lung Capacity	20	Split Concentration
30	Enhanced Scent	15	Machine Affinity	10	Subconscious Discipline
10	Enhanced Senses	10	Magnetic Sense	20	Subtle
varies	Extra Limbs	10	Manual Dexterity	25	Sureshot
10	Extremely Nimble	10	Martial Arts Training	20	Telescopic Eyes
10	Fast Fixer	15	Master Craftsman	20	Temporal Boost
20	Flight	20	Mental Resolve	15	Toughness
15	Gadgeteer	10	Motion Sensing	15	Tough Hide (Lesser)
5	Genetic Adaptation	20	Multiple Eyes	30	Tough Hide (Minor)
10	Genetic Health	5	Multiple Subskill Proficiency	60	Tough Hide (Major)
25	Giantism	5	Multiple Weapon Proficiency	90	Tough Hide (Greater)
10	Gills	10	Natural Astronaut	20	Ultrasound Echolocation
10	Good Memory	20	Natural Camouflage	40	Vacuum Adaptation
30	Great Arm	10	Natural Gunner	20	Virtuality
40	Greater Resistance (Stamina)	10	Natural Linguist	20	Water Vision
40	Greater Resistance (Will)	10	Natural Weapon	10	Xenophile
10	Heat Resistance (Minor)	15	Neutral Odor	25	Zero Gravity
20	Heat Resistance (Major)	25	Night Vision		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Ambidexterity

The character may use either hand equally well, and receives no penalty for using a weapon in the off hand.

Cost: 20

Artistic

The character gains +10 to all artistic skills.

Cost: 10

Artistic Training

The character has received specialist training in a particular art form, and gains five skill ranks in one chosen Artistic skill. This Talent may not increase the character's skill ranks above the normal maximum for his level.

Cost: 10

Athletic

The character gains +10 to all athletic skills.

Cost: 15

Bane

The character may select one type of creature (or race) against which he gets a bonus of +20 when determining damage. This bonus is used only in determining damage (i.e. the critical) and does not apply to determining whether or not the character actually hits. The full bonus must always be used. This allows the attack to ignore damage caps.

Cost: 25

Biosculpted Body

This Talent represents a cosmetic alteration to the character's body shape, size, hair color, skin color, etc., using genetic augmentation techniques to achieve the change at the DNA level. As this can include altering retinal patterns and fingerprints (in addition to the modified DNA), this procedure is normally Restricted. The Development Point cost is 2 DPs for small-scale changes (facial alterations, hand modifications, etc.) and 5 DPs for full body transformations.

Cost: 2 or 5

Blazing Speed

The character's Base Movement Rate is increased by 2m.

Cost: 15

Calming Voice

The character gains +10 to all Influence skills when used to calm down one or more individuals.

Cost: 10

Cold Resistance (minor)

The character has a significant tolerance to natural cold. In game terms, this is equivalent to lowering the temperatures at which Stamina RRs must be made by 20 degrees Celsius (i.e. to –16 and –38).

Cost: 10

Cold Resistance (major)

The character has a substantial tolerance to natural cold. In game terms, this is equivalent to lowering the temperatures at which Stamina RRs must be made by 50 degrees Celsius (i.e. to –46 and –68).

Cost: 20

Combat Awareness

Characters with this talent are extremely aware of their surroundings during a battle. Normally, a character may make a Perception maneuver as a free action with a modifier of –50; this is called Combat Perception. Using this talent, they may still do the same, but the modifier is only a -30.

Cost: 20

Computer Wizard

The character gains +10 to all computer-related skills, i.e. Computer Operation, Computer Hacking, and Computer Programming.

Cost: 10

Cyber Compatibility (Greater)

The character's body does not reject cyber implants, so the character may be augmented using any available cybernetic technology. Cyber Compatibility is covered in more detail in HARP SF Xtreme.

Cost: 10

Cyber Compatibility (Lesser)

The character's body does not reject cyber implants, so the character may be augmented using cybernetic technology. The range of implants is limited to cosmetic modification, datajacks, and neuralware.

Cost: 5

Dark Vision (Greater)

The character is able to see up to 6m in total darkness. With at least some illumination (candle, torch, lantern, etc.), he is able to see up to twice as far as the illumination provides.

Cost: 30

Dark Vision (Lesser)

The character is able to see up to 3m in total darkness. With at least some illumination (candle, torch, lantern, etc.), he is able to see up to twice as far as the illumination provides.

Cost: 15

Dense Musculature

The character's body is denser and heavier than normal. As a result, the character adds 9 to his or her racial weight modifier when determining their weight. The character gains a special +5 to both his OB and DB. However, due to this increased density, the character suffers a -25 to all swimming maneuvers.

Example: *A human with a base weight of 80 kg taking this talent would weigh 94 kg, 80 + (5 weight modifier + 9= 14) = 94.*

Cost: 25

Download Form

This Talent represents the mental adjustments and physical proficiencies that must be learned by a Virtual persona or Pure AI character in shifting from a cyberspace existence into a physical body such as a vehicle or a biological construct. This Talent must be purchased separately for each different physical form. It must be taken prior to downloading or immediately after the download is complete. This Talent is not required when downloading into a robot body. Download Form is covered in more detail in HARP SF Xtreme.

Cost: 20

Electrical Sense

The character can perceive electricity, whether it is the electrical fields generated by equipment or the electrical impulses in living creatures, and can "see" the patterns of the fields and impulses. Characters with this ability receive a +10 bonus to any maneuvers where direct observation of the electrical field would be useful (e.g. Engineering to repair electrical devices, Electronic Bypass, Demolitions for spotting the live wires, etc.) and may make Perception maneuvers to locate hidden individuals or objects by spotting their electrical fields. Range is normally limited to 5m.

Cost: 15

Enhanced Scent

The character has an extremely sensitive sense of smell. He can smell odors up to 30m upwind, 600m downwind, and up to 150m in still air, depending upon the strength of the odor. If he can pick up the scent of a specific target, he can gain a +50 bonus to his tracking attempt.

Cost: 30

Enhanced Senses

The character has very acute senses, and gains a special bonus of +10 to all Perception rolls.

Cost: 10

Extra Limbs

The character has one or more extra limbs (arms or legs). If legs, these do not increase Base Movement Rate, but do provide a +10 bonus per limb to DB against Martial Arts Sweeps or Unbalancing attacks. If arms, they do not provide any extra attacks, but may allow the character to do things that others would find impossible (e.g. make an attack with a two-handed weapon while holding something in the third hand.)

Cost: 5 per limb

Extremely Nimble

The character is very nimble and light on his feet. He gains a special bonus of +10 to any Stalking and Acrobatic/Tumbling maneuvers.

Cost: 10

Fast Fixer

The character can make repairs in half the normal time required, i.e. the base time for all repairs is halved for this character.

Cost: 10

Flight

Anyone with suitable wings and this ability can fly (or glide). Their Base Flight Rate (BFR) is twice their Base Movement Rate and Pace Modifiers Apply normally. Flight is extremely tiring, so characters may only stay aloft a maximum number of hours equal to their total Constitution bonus. For each encumbrance level above Light, their BFR is reduced by half, and so is the amount of time they may stay aloft (i.e. Medium encumbrance = _ normal BFR and time aloft. Heavy encumbrance = _ BFR and time aloft). Characters with this Talent gain a bonus of +50 to the Flying/Gliding skill. Note that flight will be limited by the environment's gravity.

Cost: 20

Gadgeteer

The character gains +10 to all Engineering skills.

Cost: 15

Genetic Adaptation

The character has been genetically engineered to survive in a particular environment. One of the character's racial abilities may be swapped for an appropriate Talent from the Genetic Modifications Table , subject to SysOp approval. This Talent may be taken twice, allowing two racial abilities to be swapped out, but may only be purchased at first level.

Cost: 5

Genetic Health

The character has been genetically engineered to eliminate all known genetic diseases from his DNA. Humans with this Talent are born without an appendix.

Cost: 10

Giantism

The character is 50% taller and weighs twice as much as the normal height and weight for somebody of his race. He gains a special +5 bonus to his strength bonus.

Cost: 25

Gills

The character can breathe underwater.

Cost: 10

Good Memory

The character can accurately recall any conversations heard and describe any places, items, or individuals seen within 24 hours. Thereafter, his memory fades normally.

Cost: 10

Great Arm

The character is extremely skilled and powerful when it comes to thrown weapons. He has double the normal Range Increment for all thrown weapons.

Cost: 30

Greater Resistance (Stamina)

The character has a special +20 bonus to all Stamina-based Resistance Rolls. This does not stack with the Lesser Resistance (Stamina) Talent.

Cost: 40

Greater Resistance (Will)

The character has a special +20 bonus to all Will-based Resistance Rolls. This does not stack with the Lesser Resistance (Will) Talent.

Cost: 40

Heat Resistance (minor)

The character has a significant tolerance to natural heat. In game terms, this is equivalent to raising the temperatures at which Stamina RRs must be made by 20 degrees Celsius (i.e. to 52, 63, and 74 degrees Celsius).

Cost: 10

Heat Resistance (major)

The character has a substantial tolerance to natural heat. In game terms, this is equivalent to raising the temperatures at which Stamina RRs must be made by 50 degrees Celsius (i.e. to 82, 93, and 104 degrees Celsius).

Cost: 20

Heat Sense

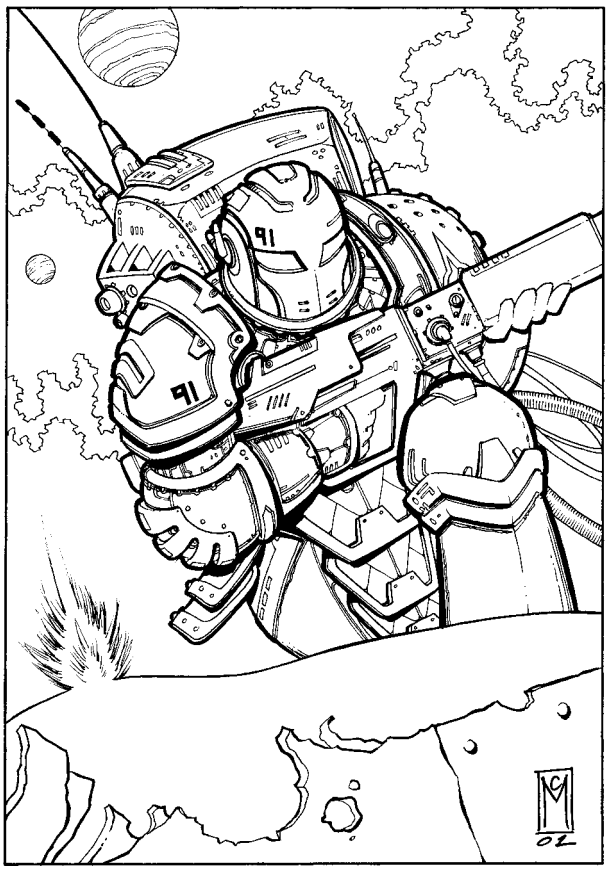
The character can detect the presence of creatures and objects, which have temperatures higher or lower than the surroundings. Range is limited to up to 10m.

Cost: 15

Heat Vision

The character can see the world as a mosaic of hot and cold regions, identifying anything that is even a fraction of a degree above or below ambient temperature.

Cost: 25



High Gravity (minor)

The character is adapted to a high-gravity environment (from 1.25g to 2g). Character receives a +4 stat bonus to Strength, +4 stat bonus to Quickness, and a +4 stat bonus to Constitution from increased muscle and bone strength and heightened reflexes, but suffers a –2 stat bonus modifier to Agility and a –2 stat bonus modifier to Presence from increased bone density and squat body shape. This Talent cannot be taken in addition to Low Gravity (Minor or Major) or Zero-Gravity Adaptation.

Cost: 20

High Gravity (major)

The character is adapted to a high-gravity environment (from 2.01g to 3g). Character receives a +8 stat bonus to Strength, +8 stat bonus to Quickness, and a +8 stat bonus to Constitution from increased muscle and bone strength and heightened reflexes, but suffers a –4 stat bonus modifier to Agility and a –4 stat bonus modifier to Presence from increased bone density and squat body shape. This Talent cannot be taken in addition to Low Gravity (Minor or Major) or Zero-Gravity Adaptation.

Cost: 40

High Gravity Training

The character has acclimatized to perfoming actions in higher gravities than his native gravity. This Talent reduces the penalties from high-gravity by 5. It cannot reduce the penalties below zero. This Talent can be taken up to five times, allowing up to –25 points of gravity penalties to be eliminated.

Cost: 5

High Pressure Tolerance (minor)

The character's body (particularly lungs and surrounding skeleton) is adapted to withstanding high atmospheric pressure environments (up to 10x Earth's atmospheric pressure).

Cost: 10

High Pressure Tolerance (major)

The character's body (particularly lungs and surrounding skeleton) is adapted to withstanding high atmospheric pressure environments (up to 100x Earth's atmospheric pressure).

Cost: 30

Hotshot Pilot

The character gains +10 to all Vehicular skills.

Cost: 20

Improvisation

The character can jury-rig equipment and the equipment will function normally without any increase in its malfunction chance.

Cost: 10

Infrasound Hearing (air)

Character can perceive the different sounds caused by air movement over the land and sea, and can convert this information into auditory "maps" of the terrain, granting them a +20 bonus to Navigation.

Cost: 10

Infrasound Hearing (water)

Character can send and hear infrasound frequencies enabling them to communicate over hundreds of kilometers underwater.

Cost: 15

Instinctive Defense

The character gains a special bonus of +20 to his DB for all attacks he is aware of. If he is unaware of an incoming attack, he still receives a special bonus of +10 to his DB.

Cost: 30

Instinctive Evasion

The character gains a special bonus of +20 to the DB of the vehicle he is driving, piloting, etc. for all attacks he is aware of. If he is unaware of an incoming attack, the vehicle still receives a special bonus of +10 to its DB.

Cost: 20

Intuition

The character is extremely sensitive to his environment. He may make a Combat Perception maneuver (a free action, with a -50 modifier to the maneuver) at any time (not just in combat) to notice that something is wrong. This ability will only allow him to detect things that are noticeable with a normal perception roll. The Talent, Combat Awareness, will affect the rolls allowed by this Talent as well. Some characters think of Intuition as their "danger sense".

Cost: 20

Judge of Value

The character gains +10 to all Appraisal skills.

Cost: 10

Latent Psionic Field

The character has the latent ability to use Psi Disciplines from one chosen Psionic Field. This Talent may only be purchased at first level during character creation. This Talent may be purchased multiple times, for a different Psionic Field each time. The cost of this Talent increases for each additional Field, starting at 5 DPs for the 1st Field, 15 DPs for the 2nd Field, 30 DPs for the 3rd Field, 50 DPs for the 4th Field, and 75 DPs for the 5th Field.

Cost: 5, 15, 30, 50 or 75.

Lesser Resistance (Stamina)

The character has a special +10 bonus to all Stamina-based Resistance Rolls. This does not stack with the Greater Resistance (Stamina) Talent.

Cost: 20

Lesser Resistance (Will)

The character has a special +10 bonus to all Will-based Resistance Rolls. This does not stack with the Greater Resistance (Will) Talent.

Cost: 20

Lightning Reflexes

The character has extremely fast reflexes. This grants him a +5 bonus to his initiative roll.

Cost: 10

Logical Mind

The character gains +10 to all Scientific skills.

Cost: 20

Low Gravity (minor)

The character is adapted to a low-gravity environment (from 0.31g to 0.75g). Character receives a +4 stat bonus to Agility, but suffers a –1 stat bonus modifier to Strength and a –1 stat bonus modifier to Constitution. This Talent cannot be taken in addition to High Gravity (Minor or Major) or Zero-Gravity Talents.

Cost: 10

Low Gravity (major)

The character is adapted to a low-gravity environment (from 0.06g to 0.3g). Character receives a +8 stat bonus to Agility, but suffers a –2 stat bonus modifier to Strength and a –2 stat bonus modifier to Constitution. This Talent cannot be taken in addition to High Gravity (Minor or Major) or Zero-Gravity Talents.

Cost: 15

Low Pressure Tolerance

The character's body is adapted to surviving in low atmospheric pressure environments. The character receives a +50 bonus to all Stamina RRs and CRRs against low pressure effects.

Cost: 10

Lung Capacity

The character's lungs have much greater capacity than normal, enabling him to hold his breath for a number of rounds equal to ten times the sum of his Constitution stat and Constitution bonus. In combat, the character can hold his breath for 15 rounds per positive Constitution modifier point.

Cost: 10

Machine Affinity

The character gains +10 to all Machine Operation skills.

Cost: 15

Magnetic Sense

The character can detect magnetic fields. Magnetic Sense gives a +20 bonus to Navigation on worlds with a magnetic field.

Cost: 10

Manual Dexterity

The character gains +10 to Locks & Traps, Pick Pockets and Trickery.

Cost: 10

Martial Arts Training

Any Martial Arts attacks made by the character are Medium rather than Small attacks.

Cost: 10

Master Craftsman

The character has a gift for making and building things, and receives a +10 bonus to all Crafts skills.

Cost: 15

Mental Resolve

The character has an unusual single-mindedness of will and mental focus, and receives a +10 bonus on all his Concentration skills.

Cost: 20

Motion Sensing

The character has an acute ability to register even slight movements within his normal visible range, and receives a +20 bonus to Perception maneuvers against moving objects or people.

Cost: 10

Multiple Eyes

The character literally has "eyes in the back of his head" (or appropriate body part!). Character does not suffer penalties from being attacked from the flank or rear.

Cost: 20

Multiple Subskill Proficiency

This talent reduces the subskill penalty for a specific subskill by 10 for skills with mandatory subskills (Air Pilot, Animal Handling, Beastmastery, Driving, Foraging/ Survival, Marine Pilot, Riding, Signaling and Space Pilot). It may be taken multiple times for the same subskill but cannot reduce the subskill penalty below zero. Without this talent only the primary subskill gets full bonus. This talent may also be taken multiple times for a different subskill.

Cost: 5

Multiple Weapon Proficiency

This talent allows a character to use his full bonus for one additional weapon in a weapon group. Without this talent only one weapon of each group gets full bonus. This talent may be taken multiple times for a different weapon each time.

Cost: 5

Natural Astronaut

The character gains a +10 bonus to Zero-G Maneuvering and penalties to maneuvers performed under high acceleration (or high gravity) are halved.

Cost: 10

Natural Camouflage

The surface of the character's body (e.g. skin, scales, hide, etc.) can alter its hue to match the surroundings. This camouflage grants a bonus of +25 to all Stalking/Hiding attempts.

Cost: 20

Natural Gunner

The character gains +10 to all Gunnery skills.

Cost: 10

Natural Linguist

The character is able to understand (both listening and reading) related languages at one half of his skill ranks for a language that he already knows. A Maneuver roll (All-orNothing or Percentage at SysOp's discretion) will be required for any speaking or writing in the related language (again at half skill ranks).

Cost: 10

Natural Weapons

This ability represents a natural weapon such as claws, hooves, or a stinger that the possessor can learn to use as if they were learning a Martial Arts skill.

Cost: 10

Neutral Odor

The character's body has the peculiar ability to mask the scent of any odor within 2m of it, nor will he leave an odor for any animals to find.

Cost: 15

Night Vision

The character can clearly see up to 30m easily on a starlit night, and by the light of a full moon, he can see up to 150m as if it were daylight out. In total darkness he is as blind as the majority of the races. In an interior setting, artificial illumination allows him to see twice as far as the illumination provides.

Cost: 25

Null Mind

The character's brain has an exotic makeup that makes it very difficult for telepaths to probe or manipulate his mind using any Discipline from the Telepathic Field. The character receives a special bonus of +50 to all RRs versus any Psi Disciplines from the Telepathy Field, but is also unable to develop any Telepathic Disciplines himself.

Cost: 30

Outdoorsman

The character receives a bonus of +15 to all Outdoor skills.

Cost: 20

People Person

The character gains +10 to all Influence skills.

Cost: 15

Physician

The character has a gift for healing, and receives a +10 bonus on all his healing & medical skills, i.e. First Aid, Medical Practice, and Medical Science.

Cost: 10

Poison Sac (Nerve)

The character has a natural ability to generate a nerve poison within his body. When the poison is delivered by a suitable natural weapon (stinger, bite, claw, etc.), targets must make a Stamina RR or be paralyzed. The Poison Bonus and the duration of the paralysis vary according to the degree of this Talent.

Poison Sac (Nerve) (Lesser) – The toxin has a Poison Bonus of +0 and the paralysis lasts d10 rounds. [Lesser, 10]

Poison Sac (Nerve) (Minor) – The toxin has a Poison Bonus of +20 and the paralysis lasts 2d10 rounds. [Minor, 15]

Poison Sac (Nerve) (Major) – The toxin has a Poison Bonus of +20 and the paralysis lasts d10 minutes. [Major, 20]

Poison Sac (Nerve) (Greater) – The toxin has a Poison Bonus of +40 and the paralysis lasts 2d10 minutes. [Greater, 25]

SysOps may choose to vary the effects and resolution method.

Cost: 10, 15, 20, 25

Portage Skills

Those with this ability are able to carry triple the normal mass allowed for each Encumbrance level.

Cost: 10

Psionic Reach

This Talent doubles the range of any one Psi Discipline that has a range greater than Touch, i.e. a Tier 2 effect of 1m per rank becomes 2m per rank. This talent may be purchased multiple times, for a different Psi Discipline each time.

Cost: 20

Quick Calculator

The character gains a +20 bonus to Mathematics. The character can also perform even complex calculations accurately in his head, without the need for tools such as electronic calculators.

Cost: 10

Quiet Mind

The character has a peculiar mind, which is hard to detect by psychics using the Clairsentience Discipline. The character receives a special bonus of +50 to all RRs versus Clairsentience attempts.

Cost: 20

Quiet Stride

The character is naturally light on his feet, giving him a bonus of +25 to Stalking maneuvers.

Cost: 20

Radiation Resistance (minor)

The character is abnormally resistant to radiation damage. All Radiation criticals against the character are reduced by one step (e.g. Medium become Small, Tiny are ignored). This is cumulative with anti-radiation medicines.

Cost: 20

Radiation Resistance (major)

The character is very resistant to radiation damage. All Radiation criticals against the character are reduced by two stepa (e.g. Medium become Tiny, Small and Tiny effects are ignored). This is cumulative with anti-radiation medicines.

Cost: 40

Reduced Sleep Requirement

The character requires less sleep than normal. Four hours of sleep are the equivalent of eight hours of sleep for him.

Cost: 15

Regeneration

Regeneration (Minor) — The character has the ability to regenerate damage from all but fatal wounds. His body automatically regenerates 1 Concussion Hit each minute. His recovery rate for non-fatal injuries is halved. [Minor, 15]

Regeneration (Major) — As the Minor talent, except the character recovers 2 Concussion Hits per minute. [Major, 30]

Regeneration (Greater) — As the Minor talent, except the character recovers 3 Concussion Hits per minute. [Greater, 45]

Cost: 15, 30, 45

Scholar

The character has an insatiable appetite for knowledge and a fantastic ability to recall information. He gains a special +10 bonus to all Lore skills.

Cost: 10

Scientific Specialization

The character has concentrated his efforts in a particular area of scientific study, and gains five skill ranks in one chosen skill from the Scientific category. This Talent may not increase the character's skill ranks above the normal maximum for his level.

Cost: 10

Shield Training

The character has been trained to use shields to their fullest capabilities. When wielding a shield, he may now use the Trained bonus for the shield.

Cost: 10

Skill Specialization

The character is capable of great focus in learning. This is reflected in him gaining a one-time +10 bonus to a single skill. This Talent may be taken no more than three times, for a different skill each time.

Cost: 10

Space Adaptation

The character's body is designed to ignore all of the adverse medical effects of low gravity and zero-gravity.

Cost: 40

Spatial Boost (radius)

Any one Psi Discipline with a radius area of effect has its normal radius doubled when you activate it. Thus a Tier 1 effect would be doubled from 1m radius to 2m radius. The Psi Discipline must be chosen when this Talent is purchased. This Talent may be purchased multiple times, for a different Discipline each time.

Cost: 15

Spatial Boost (targets)

Any one Psi Discipline with an area of effect of 1 (or more) target(s) is automatically doubled to twice as many targets, i.e. a Tier 2 effect is doubled from 1 target per ten ranks to 2 targets per ten ranks. The Discipline must be chosen when this Talent is purchased. The targets must be different, and the same roll is used for all targets. This Talent may be purchased multiple times, for a different Psi Discipline each time.

Cost: 25

Speed Loader

The character is extraordinarily fast when it comes to reloading ranged weapons

Bows – may reload and fire every other round.

Slings – may reload and fire every other round.

Crossbows – reload time is reduced by one half (round up).

Modern Ranged Weapons – reload time is reduced by one half (round up).

This Talent may be purchased multiple times for a different type of ranged weapon (Modern Ranged, Bows, Crossbows, or Slings) each time.

Cost: 10

Speed Reader

The character can read at three times normal speed, i.e. the character can read three pages or three full-size display screens per minute.

Cost: 10

Split Concentration

The possessor can concentrate on two already active Psi Disciplines simultaneously, i.e. a character with this Talent could use Clairvoyance and Clairaudience at the same time to see and hear at a remote location, or the Scan and Wipe Disciplines to erase memories at the same time as reading them in a target's mind. The possessor cannot concentrate on one discipline and activate another discipline at the same time using this Talent.

Cost: 20

Subconscious Discipline

The character's subconscious mind is capable of sustaining Psi Disciplines even after the conscious mind has ceased to maintain them. The Psi Discipline will remain active for an amount of time equal to the duration of the concentration upon it. Note this only affects activations where the duration has been chosen to be Concentration.

Cost: 10

Subtle

The character is naturally discreet and subtle, and receives a +10 bonus on all his subterfuge skills.

Cost: 20

Sureshot

Characters with this talent are an excellent shot with modern ranged weapons (such as firearms, energy

weapons, etc.), bows, crossbows or other missile weapons. They have an amazingly acute sense of distance and a smooth and easy aim and release. All modifiers are reduced to -5 per Range Increment instead of the normal -10. This Talent may be taken multiple times, once for each type of ranged weapon, including thrown weapons. All Modern Ranged Weapons are counted as a single type for this Talent; each weapon group of the Thrown and Missile weapon classes is considered a distinct weapon type.

Cost: 25

Temporal Boost

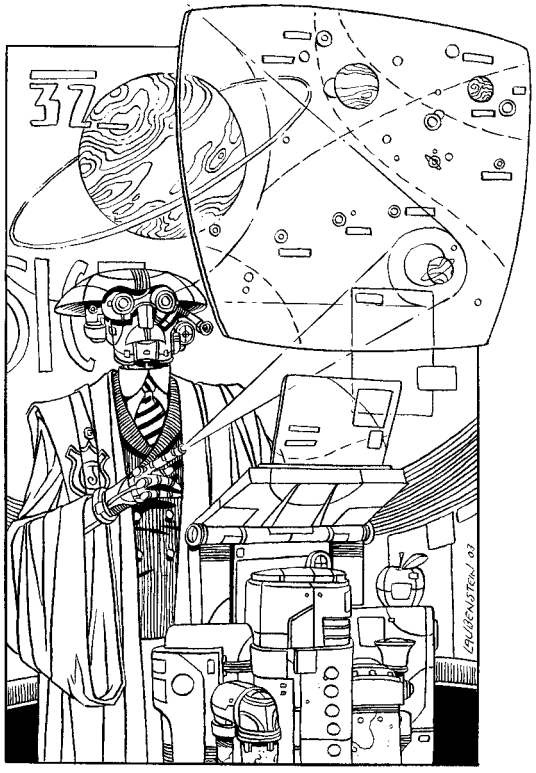
The duration of any one Psi Discipline is doubled, e.g. a Tier 2 duration of 2 rounds per rank would become 4 rounds per rank. This does not affect any Disciplines where the duration is Concentration or Instant. This talent may be purchased multiple times, for a different Discipline each time.

Cost: 20

Telescopic Eyes

The character can enhance a feature in their field of vision, magnifying it several times at the expense of everything else in the field of view. The process takes a round to focus in on the target and grants a +20 bonus to Perception maneuvers involving the target. This also allows the character to perform Sniping attempts at 4 Range Increments from a target. While focused, the character suffers a –20 modifier to Perception maneuvers relating to other features or targets.

Cost: 20



Tough Hide (Lesser)

This ability grants a +10 to DB from extremely tough hides or heavy coarse fur.

Cost: 15

Tough Hide (Minor)

This ability grants a +20 to DB from extremely tough hides or heavy coarse fur.

Cost: 30

Tough Hide (Major)

This ability grants a +40 to DB from extremely tough hides or extremely leathery or scaly skin.

Cost: 60

Tough Hide (Greater)

This ability grants a +60 to DB from extremely tough hides or from many hard plates or large tough scales.

Cost: 90

Toughness

The character is extremely tough. He gains a special +10 bonus to his Endurance skill.

Cost: 15

Ultrasound Echolocation

The character can send ultrasound pulses and detect the reflected pulses as they bounce off surfaces. The pulses have a range of 0.5 km in air and 1 km in water. The character's brain interprets the pulses as a three-dimensional image.

Cost: 20

Vacuum Adaptation

The character's body is designed to survive in vacuum. It may have some form of exterior scaling to protect against the pressure differential, have surface organs to close or cover orifices, and some organ for recycling exhaled air into breathable air.

Cost: 40

Virtuality

This Talent represents the shift in mental perspective required by a biological character whose personality and memories have been copied to a Virtual persona. This Talent must be purchased either by the biological version of the character prior to personality recording or by the Virtual character immediately after upload.Virtuality is covered in more detail in HARP SF Xtreme.

Cost: 20

Water Vision

Characters with this ability can see normally underwater, but *may* have difficulties distinguishing colors above the water and limited range due to the intensity of light on land (unless anti-glare goggles are worn).

Cost: 20

Xenophile

The character gains +10 to all skills relating to one specific alien race. This Talent may be purchased multiple times for a different alien race each time.

Cost: 10

Zero Gravity

The character is adapted to a micro-gravity environment (from 0g to 0.05g). Character receives a +12 stat bonus to Agility, but suffers a –4 stat bonus modifier to Strength and a –4 stat bonus modifier to Constitution. The character is unaffected by space sickness. The character gains a +50 bonus to the Zero-G Maneuvering skill. This Talent cannot be taken in addition to High Gravity (Minor or Major) or Low Gravity (Minor or Major) Talents.

Cost: 25

Special Starting Items and Status

During character creation only, the Player may also spend the character's Development Points on the acquisition of certain special starting items and on status. The following list gives the most common types of items and their Development Point costs.

Item/Status	Cost
Bonus Item I	5
Bonus Item II	10
Loyal Domesticated Animal	5
Loyal Unusual Creature	15
Planetary Vehicle	10
Interplanetary Shuttle	20
FTL-capable Vessel	50
Law Enforcement Ability	20
Magnate	20
Military Rank	5 per rank
Nobility	20
Patron	10 / 20
Reputation	15

Bonus Item I – The character has an item with a quality bonus of +5. This bonus applies to any skill or actions suited to the normal operation of the item. For example, a bonus item that was a set of lock picks would provide a +5 bonus to the character's skill in picking locks.

Bonus Item II – The character has an item with a quality bonus of +10. This bonus applies to any skill or actions suited to the normal operation of the item. For example, a bonus item that was an emergency medical kit would provide a +10 bonus to the character's skill in First Aid.

Loyal Domesticated Animal – The character has a common animal that is completely loyal to him, (i.e. dog, wolf, horse, etc.). The normal animal is subject to SysOp approval based upon the campaign setting.

Loyal Unusual Creature – As above, except that the animal is not common in any way (i.e. a flying snake, an alien symbiot, etc.). The unusual creature is subject to SysOp approval based upon the campaign setting.

Planetary Vehicle – The character owns a vehicle, such as a sports car, small speedboat, or small aircraft.

Interplanetary Shuttle – The character owns an unarmed interplanetary shuttle, capable of atmospheric and space flight. This should be a mini-shuttle or equivalent. It is incapable of faster-than-light travel.

FTL-capable Vessel – The character owns a small unarmed spaceship. It is capable of both slower-than-light and faster-than-light.

Law Enforcement Ability – The character has been granted the right to enforce the law in a specific area. The actual benefits of this will vary depending upon the local laws, and this ability extends to no more than a single planet. SysOps may restrict this further to a smaller region of a world. He will be recognized by the local citizenry as an officer of the law, unless working undercover, and (if in uniform) may be called upon by them to perform various legal tasks.

Magnate – The character is a member of one of the ultra-rich families that have substantial holdings in the interstellar megacorporations. The character begins play with ten times the normal starting credit.

Military Rank – The character has been or is serving in the military forces of his homeworld or species confederation. For meritorious service, he has been promoted one or more times (5 DPs per promotion). SysOps should normally limit beginning characters to company-size and small ship commands.

Nobility – The character is a member of the nobility, or aristocratic ruling class of his culture. He may have been awarded nobility, or been born into it. Pseudo-feudalism has developed on a number of human colonies and is practiced among other species. The Player and the System Operator should determine the character's title and the extent of his powers and rights as a noble.

Patron (minor, 10) – The character has a patron who can provide him with the bare necessities of life (food, shelter, etc.) whenever needed. The patron is an individual whose influence is limited to a single planet.

Patron (major, 20) – The character has a patron who can provide him with almost any normal items or resources (SysOp discretion). The patron is an individual whose influence is limited to a single planet.

Reputation – The character is famous or perhaps infamous, e.g. the character may have written a bestselling novel, been the first person to ascend a particular mountain, be notorious in the scandal sheets for affairs with holovision stars, etc. The character's notoriety is limited to a single world or to a particular group of people (e.g. mountaineers, scoutship pilots, etc.).

Multiple Professions

HARP SF allows a character to add additional professions as he progresses in levels. Upon going up a level, the player may purchase the Talent, Additional Profession, which allows him to add a level of another profession to his overall level. The character's overall level is the sum of all levels in all professions that he has acquired.

Once a character has two or more professions, whenever he goes up a level, he may freely select which one to advance, or he may add yet another profession to the mix, by purchasing the Additional Profession Talent again. A character is limited to adding only one new profession each time he advances a level.

Example: *Choyen is a 3rd level Scout. Upon reaching 4th level, Choyen decides to join the Federation Intelligence Service and becomes a Spy. Choyen's player pays for the Additional Profession Talent and Choyen is now a Scout(3)/Spy(1), which is a 4th level character overall. Once Choyen reaches 5th level, he may increase his Scout level, increase his Spy level or add yet another profession. Choyen elects to increase his Spy level making him a Scout(3)/Spy(2).*

Note:

In science-fantasy campaigns, characters may be allowed to take spell-using professions. A character with multiple professions may only purchase ranks in spells belonging to a specific Sphere of magic when advancing a level in the profession to which that Sphere is associated.

Fate Points

Sometimes the character needs an extra edge, just that little push to give him what he needs to succeed in a maneuver, or perhaps an extra bit of luck to minimize that critical he received that would otherwise kill him outright. Fate Points are a mechanism by which the Player can give additional aid to their character.

- Every character starts off with 3 Fate Points and has the chance to purchase more. For a cost of 5 Development Points, you can purchase one Fate Point for your character, up to a maximum of 5 Fate Points total. The SysOp may also award your character a Fate Point for a spectacular maneuver, or an idea that greatly aided the accomplishment of the goal of the party.
- Fate Points may only be used for certain effects, as listed below.
- For 1 Fate Point, the player may add a special modifier of +50 to any one roll that he makes for his character.
- For 2 Fate Points, the player may add a special modifier of +100 to any one roll that he makes for his character.
- For 1 Fate Point, the player may add a special modifier of +50 to his Defensive Bonus for one round.
- For 2 Fate Points, the player may add a special modifier of +100 to his Defensive Bonus for one round.
- For 1 Fate Point, the player may have 25 subtracted from any one critical his character receives.
- For 2 Fate Points, the player may have 50 subtracted from any one critical his character receives.
- For 1 Fate Point, the player may have 25 subtracted from any one critical a vehicle (in which he is travelling) receives.
- For 2 Fate Points, the player may have 50 subtracted from any one critical a vehicle (in which he is travelling) receives.

Fate Points may only be used in situations where success or failure will have an immediate and important impact on the character such as during a confrontation of some sort; they may not be used for something as mundane as the crafting of an item or other non-stressful situations.

Once a Fate Point is used, it is *used up*. To get Fate Points back, the character must spend Development Points or be awarded extraordinary Fate Points by the SysOp.

Training Packages

A Training Package is a group of related skills that are learned together, and then purchased at a discount. These packages reflect special teaching and training offered by organizations, or a special "curriculum" designed by a player that reflects his character's special interests and goals. Organizations that might offer training packages include military academies, universities, megacorporations, secret societies, and the criminal underworld.

How to Use Training Packages

Both players and SysOps may create Training Packages (TPs). The SysOp can use them to introduce new and exciting organizations that are part of the campaign universe to his players, especially if his players wish to join such organizations. By offering his players various TPs, the SysOp gives his players the opportunity to become more involved with the campaign setting.

Players can also create their own TPs. When doing so, they should collaborate with the SysOp on creating a background story for the TP so that the SysOp may work it into the campaign universe with as little trouble as possible. When a player creates a TP, the SysOp must always approve it before the character may actually purchase it. This also allows the player to be more involved in the campaign universe without permitting rules abuses.

Training Packages are normally gained only when a character goes up in level, but sometimes during the course of play, a character may have the opportunity to gain training of a specialized nature through role-playing. In such cases, only the SysOp may authorize a character to gain the TP. When this happens, the points for the cost of the TP are removed from the character's Development Points the next time he goes up in level. This mid-level TP also counts against the character's one TP per level limit.

Example: *A group of characters are stranded on a harsh frontier world and have to assist the colonists in establishing their settlement as a means of obtaining enough credit to buy passage off-world. The SysOp may create a Pioneer Training Package for the characters to reflect this specialized training and experience. The next time that the characters go up in level, they automatically lose a number of Development Points for that level equal to the cost of the Pioneer TP, and they are not allowed to take any other Training Packages that level.*

Here are a few guidelines for the acquisition of Training Packages:

1. Characters are limited to learning no more than 1 Training Package each level.
2. If the skill ranks gained from a TP would give a character more skill ranks than the skill ranks per level limit, then those extra ranks are lost.

Training Packages should not be purchased across multiple levels without the SysOp's express permission. If a Training Package is too expensive to purchase in one level, then perhaps it is too large and needs to be redesigned, or broken into multiple smaller Training Packages.

Designing Training Packages

Here are the rules for designing a training package:

- A TP should never contain more than 20 skill ranks total.
- A TP should never have less than 2 ranks in any given skill.
- A TP should never have more than 5 ranks in any given skill.

All skills in the TP should reflect the nature of the TP and group for which it is created.

Training Package Cost: Training Packages are purchased at a 25% discount. The cost of the skills in a Training Package depends on a character's favored and nonfavored categories. Total the cost for the entire Training Package and then apply the discount to get the final cost of the package. So a Training Package with a total cost of 20 points would have a final cost of 15 points.

Sample Training Packages

This section provides a number of sample Training Packages to illustrate how they can be used in your game. The names and places detailed in these samples are featured in the Tintamar universe. SysOps are free to change the names to suit their own universes.

Combat Engineer

Space Marines and meagcorp mercenaries rely on their weapons, equipment and planetary vehicles. Combat Engineers ensure those vital gadgets don't break down when the going gets tough and put the kit back together after a battle in preparation for the next assault.

Skill	Ranks
Computer Operation	2
Computer Programming	2
Engineering: Transport	4
Engineering: Weapons	4
Engineering: A	2
Engineering: B	2
Machine Operation	2
Weapon Skill or Gunnery	2

(**SysOp's Note:** Combat Engineers must choose two other distinct Engineering skills for their skill ranks in "Engineering: A" and "Engineering: B".)

Criminal Gangmember

Anyone can break the law – the trick is not being caught. Successful criminals need skill, cunning and resources to evade detection. Organized crime gangs can provide those resources – alibis, crooked lawyers, bribes, knowledge of potential opportunities, specialist gear, markets for stolen goods, and the like – in return for a hefty cut. Would-be members will have to prove them-

selves to earn their membership, and if their loyalty to the underworld bosses is ever in doubt, they should expect severe repercussions.

Skill	Ranks
Dirty Fighting	2
Duping	2
Electronic Bypass	3
Locks & Traps	2
Perception	2
Pick Pockets	2
Stalking & Hiding	2
Streetwise	3

Doctor

Graduates of the galaxy's finest medical schools, Doctors are licensed to practice medicine and surgery. Those who are dissatisfied with treating common ailments can pursue more fulfilling careers in the medical branches of the military, join interstellar expeditions, or undertake bioscience research for the megacorporations.

Skill	Ranks
Biology	3
First Aid	4
Medical Practice	5
Medical Science	3
Psychology or Xenology	3

Entrepreneur

"Next year, I'll be a billionaire." Contact with alien races has spawned a generation of entrepreneurs hoping to strike it rich by licensing alien technology, discovering the next must-have spice, liquor, art form, etc. Entrepreneurs usually begin their careers as troubleshooters and factors of independent merchants, before becoming partners in the firm or branching out on their own. They cannot compete against the resources of a megacorporation, so must be shrewd and swift in seizing any opportunities.

Skill	Ranks
Appraisal	5
Duping	2
Linguistics	4
Mundane Lore:	
Cosmography	2
Xeno Lore	2
Trading	5

Federation Police Investigator

Crime is no respecter of planetary boundaries. Criminals commit their crimes on one world before fleeing to another. Ordinary police are limited in their jurisdiction to a single planet; FedPol Investigators can pursue suspects to the stars. Elite FedPol detectives are tasked with investigating crimes against the Federation and humanity, including secessionist conspiracies, outlawed bioengineering experiments, smuggling to interdicted worlds, illegal exploitation of peoples or worlds by megacorporations, and malfeasance by governments.

Skill	Ranks
Computer Operation	2
Forensics	4
Interrogation	4
Mundane Lore:	
Cosmography	2
Law	2
Perception	2
Streetwise	2
Weapon Skill	2

Follower of the Omnisentience

The discovery of the portal device orbiting Methuselah and the mystery of the apparently vanished Builders spawned a thousand cults in human space, most of which quickly dwindled to a handful of believers. The Church of the Omnisentience were an exception. A proselytizing faith, they preach a universal brotherhood among all sentient races, that the Builders have influenced the development of the younger races, and await the return of the Builders when the new civilizations have proven their worth. The Church has many adherents on Earth, in the older solar colonies, and on the corporate dominated worlds, and even boast a few alien converts.

Skill	Ranks
Duping	3
Mundane Lore:	
Cosmography	2
History	2
Religion	5
Xeno Lore	2
Public Speaking	4

Initiate of the Transcendence

In an earlier age on Earth, proven psychics would have been burned at the stake as witches. Even now, many "normal" humans distrust Adepts and Fusions – few are comfortable with the idea that complete strangers can probe the hidden recesses of their minds. Initiates of the Transcendence are formally trained Adepts and Fusions whose code of behavior forbids unwanted mental contact and limits unnecessary exhibition of more dramatic powers. Initiates must pay a percentage (about 10%) of any fees they receive for commercial services to the Order. The organization trains Adepts, regulates their professional behavior and seeks to promote understanding between the psychically gifted and the rest of humanity. Conspiracy theorists have different perspectives on the goals of the Masters of the Transcendence.

Skill	Ranks
Mental Focus	3
Psi Discipline A	4
Psi Discipline B	3
Psi Discipline C	2
Psi Energy Development	**3**
Resistance (Will)	3

(**SysOp's Note:** Initiates must spread their skill ranks in Psi Disciplines across three distinct Disciplines.)

MegaCorp Mercenary

It takes money to make more money, and the megacorporations don't like rivals of any kind taking a cut of their profits. Ordinary police have civic responsibilities; FedPol Investigators and the military are too curious for nervous company executives. The solution: Mercenaries – private security and quasi-military forces who will protect company headquarters, research facilities, and interstellar trading outposts. They will even crew corporate warships in hostile unexplored space. MegaCorp Mercenaries are usually ruthless, efficient, and loyal to their paymasters as long as the credits keep flowing and the employers don't demand the impossible or suicidal. Satisfaction guaranteed or your money back.

Skill	Ranks
Armor	3
Endurance	3
First Aid	2
Gunnery	2
Sniping	2
Stalking & Hiding	2
Weapon Skill	4

Navy Officer

Join the AstroNavy and see the universe say the recruiting posters. Planetary defense, sentry duty on key Lagrange points and active portals, and escorting convoys are the principal roles of most navies in the civilized regions of space. Battles with smugglers, pirates and raiders will test the mettle of naval officers. In unknown space, naval officers must be scientists, explorers or diplomats as much as they are warriors.

SysOp's Note: The skill set in this package represents a general training in space skills. SysOps may wish to consider specialized versions of this package for specific naval roles (navigation, engineering, gunnery, communications, etc.)

Skill	Ranks
Computer Operation	2
Engineering:	
Magneto-gravitic	2
Gunnery	2
Mundane Lore:	
Cosmography	2
Navigation	2
Signaling	2
Space Pilot	2
Vocation:	
Crewmember	2
Weapon Skill	2
Zero-G Maneuvering	2

Netrunner

Cyberspace is an electronic universe populated by advanced software systems, artificial intelligences, and virtual people. For Netrunners, it is a playground of the mind. Probing confidential archives to plunder their secrets, foiling electronic countermeasures, reprogramming the constructs of cyberspace, confounding rival Netrunners – all in a day's work. Life in cyberspace is more real for many Netrunners than the physical universe and transcendence into the immortality of the virtual state is their ultimate goal.

Skill	Ranks
Computer Hacking	5
Computer Operation	5
Computer Programming	5
Cyber Control	3

Planetary Explorer

Habitable worlds are complex in their ecosphere, their geography, their geology and their meteorology. Even those with extreme environments boast a rich diversity of life. Each new world has its own surprises, pleasant and perilous alike, for visitors and potential colonists. Planetary Explorers are the first to land on a new world – their dangerous job is to map it, to catalogue its life forms, and to discover its secrets before a world can be declared safe for colonization or exploitation.

Skill	Ranks
Air Pilot or Marine Pilot	2
Climbing	2
First Aid	2
Foraging/Survival	2
Machine Operation	2
Navigation	2
Perception	2
Planetology	2
Swimming	2
Weapon Skill	2

Prospector

Hard-bitten miners, Prospectors are rugged individuals who spend most of their working life hunting through the asteroid and comet swarms of solar systems, hoping to strike it rich by finding an asteroid with heavy concentrations of valuable minerals. They may mine smaller lodes themselves; for larger deposits, they'll register a claim with the local authorities who will license a corporation to exploit the resources. Competition for new finds can become intense, so Prospectors are cautious in trusting people from outside their own team.

Skill	Ranks
Computer Operation	2
Demolitions	2
Machine Operation	5
Mundane Lore:	
Cosmography	2
Signaling	2
Space Pilot	2
Vocation: Crewmember	2
Zero-G Maneuvering	3

Scientist

Graduates from universities and academies, Scientists strive to understand the mysteries of the universe. For some, scientific progress is an end in itself and one where any means of advancing knowledge is perfectly justifiable.

Skill	Ranks
Computer Operation	4
Scientific Skill A	5
Scientific Skill B	4
Scientific Skill C	3
Writing	2

SysOp's Note: Scientists must spread their skill ranks in Scientific Skills across three distinct skills. Medical Practice and Medical Science may not be chosen.

Secret Agent

Everyone has secrets; governments and megacorporations have important secrets. Secret agents excel at infiltrating organizations, developing a counterfeit persona that enables them to pose as bona-fide members of the targeted group, for however long it takes to locate and retrieve the required intelligence.

Skill	Ranks
Acting	3
Computer Hacking	2
Disguise	3
Duping	2
Electronic Bypass	2
Machine Operation	2
Perception	2
Stalking & Hiding	2
Weapon Skill	2

Space Engineer

Space Engineers have to know something about every flavor of Engineering. When you are stranded light-years from anywhere civilized in a disabled starship, a skilled Space Engineer might be able to achieve a miracle and get you home. It's amazing what can be done with some spare parts, a great deal of clever jury-rigging, and a lot of determination.

Skill	Ranks
Computer Operation	2
Computer Programming	2
Engineering:	
Civil/Habitat	2
Magnetogravitic	3
Transport	3
Weapons	2
Engineering: other skill	2
Machine Operation	2
Zero-G Maneuvering	2

SysOp's Note: Space Engineers must spend the skill ranks given through "Engineering: other skill" in another Engineering skill of their choice other than Habitat, Magnetogravitic Transport, or Weapons.

Starfighter Pilot

Ace pilots and exceptional gunners, Starfighter Pilots are the crème de la crème of any space navy. In single-person or two-person fighters, they fly into battle ahead of the main force to destroy enemy fighters and challenge larger vessels. Starfighter Pilots are the heroic knights of space and their duels are the stuff of epic holovision dramas. Glamorous their career may be, but the lifespan of a Starfighter Pilot can be exceedingly short. Seize the day is their motto for the next dogfight may be the last.

Skill	Ranks
Combat Style & Maneuver:	
Combat Piloting	2
Gunnery	2
Navigation	3
Signaling	2
Space Pilot	3
Vocation:	
Crewmember	2
Weapon Skill	2
Zero-G Maneuvering	3

Starsoldier

A planet can be conquered from space and coerced into submission by the threat of saturation bombardment, even if its cities are sheltered by magneto-gravitic shields. But to truly control a world, soldiers are needed to take and hold the territory. Starsoldiers are the combat troops of the future – trained and equipped to fight in any environment from the vacuum of space to the virgin paradises of colony worlds, and everything in between. For Starsoldiers, martial traditions and esprit de corps distinguish them from the paid hirelings of the megacorporations.

Skill	Ranks
Armor	3
Endurance	3
Gunnery	2
Mundane Lore:	
Tactics	2
Sniping	2
Vocation:	
Soldiering	2
Weapon Skill	3
Zero-G Maneuvering	3

XenoArchaeologist

Countless civilizations have arisen, flourished, and faded since the galaxy was young. The relics of extinct species are scattered on many worlds. Xenoarchaeologists explore such ruins, seeking to understand the precursor cultures and their ultimate fates. Every Xenoarchaeologist dreams of discovering working artifacts built by extremely advanced races that might permit centuries of technological development to be leapfrogged and gain the finder unimaginable wealth.

Skill	Ranks
Archaeology	4
Audiovisual Recording	2
Computer Operation	2
Electronic Bypass or Locks & Traps	2
Linguistics	2
Mundane Lore:	
History	4
Perception	2
Xenology	2

Xenodiplomat

Xenodiplomats are the masters of negotiation, skillfully applying the subtle arts of persuasion and discernment to achieve agreements in matters of trade and policy between governments and organizations. Xenodiplomats are trained to understand the motivations and psychology of alien races, to "read" the expressions and moods of their representatives. Such experience is equally useful when dealing with isolated colonial cultures that have drifted far from homeworld norms.

Skill	Ranks
Duping	4
Linguistics	4
Mundane Lore:	
Cosmography	2
Public Speaking	2
Psychology	2
Trading	2
Xenology	4

Outfitting Your Character

Characters begin the game with five changes of clothing, a set of sturdy footwear, and an overcoat. The nature of the clothes depends on the character's species, culture and homeworld.

In addition, every character normally begins play with 1000 interstellar credits (or 1000 sols if a human character in the Tintamar setting). Characters with the Magnate starting option begin play with 10000 interstellar credits (or sols).

This money represents family inheritances, personal savings, and back pay from previous work. Characters will need to purchase weapons, spacesuits, armor, personal gear, etc. using this wealth, so spend it wisely.

In some campaigns, player-characters begin play as members of military forces or employees of megacorporations. SysOps may choose to supply the characters with military or corporate gear as a result instead of awarding the normal starting money.

Monetary Units

HARP SF uses a standardized system of currency. On the civilized worlds, this takes the form of "electronic cash", with characters carrying cards (much like today's credit or debit cards), which can only be used by their owner to make purchases or transfer funds. (These *almost* unforgeable cards contain fingerprint, retinal, and in some cases, DNA scans of their owners to combat fraud.) On arrival on a new world, travelers need to register their cards in the local planetary banking system to establish a credit balance. Lightspeed delays means that reconciling accounts across known space can take weeks.

The primary unit of currency is the interstellar credit (usually called the "cred"). In human space in the Tintamar setting, the primary unit is the solarius (almost always called the "sol".) Both creds and sols have smaller denominations, known as "cents", with 100 cents to both the sol and the cred. Colonial worlds sometimes have their own local currencies, even using metal coins as a means of exchange – starfarers should beware of moneychangers eager to fleece outworlders at ruinous rates of exchange.

Encumbrance

As a character acquires more and more items, he will start carrying them around with him all the time unless he has someplace absolutely safe to store them, or he sells them for additional money. As he has more to carry around, he will begin to be encumbered, meaning that he is just carrying more weight than is comfortable in order to move easily.

Characters receive a penalty to all Agility and Quickness based maneuvers when they start carrying too much stuff around. How much a character can carry depends upon his Strength stat bonus. When figuring out the Encumbrance for a character, never include their armor as it has its own maneuverability issues and penalties.

The table lists the base weight ranges and encumbrance penalties along with a few other items of information. A character's Strength bonus will adjust the base weight ranges for that character. Just add the Strength bonus divided by 2 (rounding down) to the Weight Ranges to determine the character's adjusted encumbrance ranges.

If the character is carrying more weight than the maximum allowed for a heavy load, then double the Encumbrance Modifier for every additional 15 kg, plus strength bonus that is carried.

Weight Ranges	Encumbrance	Modifier	Max Pace
0 kg – 15 kg	None	+0	Dash
16 kg – 30 kg	Light	-10	Sprint
31 kg – 45 kg	Medium	-20	Fast Run
46 kg – 60 kg	Heavy	-30	Run

Example: *Andrew is very strong and has a Strength rating of 92, giving him a Strength bonus of +9. Therefore his weight ranges are as follows: None = 0 kg – 19 kgs; Light = 20 kg – 34 kg; Medium = 35 kg - 49 kg; Heavy = 50 kg – 64 kg. If he is carrying more than 64 kg, but less than 79 kg, then his modifier is -60.*

Technology & Equipment

Through science, we begin to understand the universe. By applying science as technology, we can reshape our everyday lives and our societies. The printing press, the steam engine, the telephone, the jet engine, and the computer have all revolutionized human cultures.

Technological advances continue at a furious pace with genetic engineering and nanotechnology promising new breakthroughs in medicine and manufacturing in our lifetimes.

The available technology can define what is possible and what is impossible in a science-fiction role-playing game. Faster-than-light travel provides the opportunity for rapid interstellar exploration, the potential to meet alien races on their own worlds, the possibility of governments spanning multiple solar systems, and the perils of galaxy-wide conflict among star nations. The absence of faster-than-light communication except by messages carried by starships imposes isolation upon scattered colonies, emphasizes self-reliance among settlers, and promotes cultural individualism.

In a game, technology can become too advanced. Imagine a future of superintelligent computers and sophisticated nanomachines that can create any object to order. In this brave new world, machines do all the work and all the thinking while humans enjoy lives of luxurious leisure. Perhaps a pleasant future to live in, but not an exciting one to game in.

A single technological advance can have a major impact on the variety of games that are possible. Once upon a time, there was a subgenre of murder mystery fiction involving isolated residences where the detective was effectively locked in with potential victims, suspects and the killer – and the story was a race to unmask the murderer before he killed again. Today, somebody would use their cell phone to call for help. Or again, who wouldn't fire up their favorite search engine to find the facts on any given subject? The temptation to use computers as infinite memory banks of knowledge is a seductive one for player-characters in science-fiction games.

Unless there is a sound setting reason, such as a recent apocalyptic event leading to the collapse of civilization, we expect technological marvels in our futures and gamers will feel cheated without their spaceships, their blasters, their clever robotic companions, and all the other trappings of the genre.

HARP SF seeks to strike a balance between plausible scientific and technological advances that open up new

possibilities for gaming without the same very breakthroughs eliminating all the challenges of the universe. This is not a game where one technological gizmo will solve every problem. It is first and foremost a game where the characters matter and their efforts can save or destroy the future.

Stages of Technology

A single frame of technological development would limit the SysOp's ability to create unique settings and make it difficult to depict encounters with both less and more advanced civilizations.

Hence technological advances are divided into six broad stages of development: Unavailable, Prototype, Early, Mature, Advanced, and Obsolescent.

An Unavailable technology is one that has yet to be invented. Scientists may have theorized its possibilities, but no one has managed to create a working prototype. In some cases, the prevailing scientific wisdom may claim that the technology is not just unavailable, but unobtainable – an impossibility according to the natural laws.

With a Prototype technology, the scientific breakthroughs have been made and dedicated engineers have laboriously developed the first alpha versions. The prototype works in the hands of its creators, but only their constant care and attention keeps it working. Catastrophic breakdowns are possible – sometimes with lethal side effects. Technical characters might invent them, fearless characters might test them, but they won't be buying them off-the-shelf at the spaceport supply store. For rules on designing new equipment, see SysOp's Guide.

An Early technology is still at the cutting edge of progress, but it is now sufficiently stable that individuals other than the original design team can use it with relative safety. Mass production is now possible and characters can become early adopters. Early technology is far from perfect – it may be power intensive, bulky, purely functional, difficult to integrate with allied devices, and so forth, but it works most of the time.

A Mature technology is an accepted technology in society and industry. Mass-produced and very reliable, the early disadvantages have been eliminated as implementers design for greater usability and performance rather than just achieving functionality.

Once a technology has become Advanced, its application in society is ubiquitous. It has become part of the fabric of normal life and almost unremarkable. Compared to its predecessors, it is smaller, faster, more efficient, more reliable, and/or cheaper.

An Obsolescent technology is one that is no longer used. The knowledge to build, repair and even use Obsolescent devices may be limited to a handful of hobbyists (or completely lost), while working examples may only exist in museums. For rules on Obsolescent equipment, see SysOp's Guide.

Tintamar Knowledge Base: Technology

The default stage of development in human space for all technologies in the Tintamar universe is Mature. All equipment lists use Mature as the standard for defining performance to make the SysOp's life easier.

Availability of Technology

Players may be interested in the generalities of the technologies that underpin the societies of the future, but they reserve their real excitement for the specific instances of equipment that their characters can buy, borrow, or steal.

Equipment can be categorized in terms of its availability as Unrestricted or Restricted.

Unrestricted Equipment is available to anyone who can find a seller and can afford the asking price. There are no legal restrictions on ownership and specialist training isn't necessary to use it safely – although some skill won't go amiss.

Restricted Equipment is not available to the general population. It may be advanced surgical equipment that can only be safely used by trained clinicians. It may be patentable technology fresh from the labs and currently reserved by the megacorporations for their own employees. It may be weapons and armor systems issued to planetary or interstellar police forces and military. Governments will not want such devices in the possession of criminals, terrorist, or even well intentioned citizens. Restricted Equipment may be available under strict licenses or completely illegal unless the character is a serving member of the military, loyal employee, or whatever.

What is Unrestricted and Restricted will vary according to the setting and the campaign – the designations in this book are merely suggestions.

Tintamar Knowledge Base: The State of the Art

In this book, we have chosen the technologies available in the Tintamar universe to be the default reference set.

Agriculture

Farming of crops and livestock remains the preeminent means of feeding population on many worlds. Aquaculture – farming rather than merely fishing the seas and oceans – is important on many waterworlds. Closed habitats make extensive use of hydroponics tanks where plants are grown in water and nutrients without the need for soil. Genetic engineering has improved the yield, nutritional value, and disease resistance of plants and animals, as well as enabling them to flourish on colony worlds. Food synthesizers employing genetically tailored organisms and nanites to replicate "real food" are available but extremely expensive.

Arms and Armor

Personal weapons, lethal and otherwise, proliferate in the future. Firearms are preferred on less advanced worlds for personal defense and hunting applications. Energy weapons predominate among military forces. The portable laser has become practical. The typical laser fires two beams – a pencil-thin visible light beam for targeting and an invisible beam of microwave radiation that burns the victim. Flamers firing superheated streams of plasma are even deadlier at short ranges. An application of quantum entanglement has led to the creation of the blaster, which has a firing chamber, a control chamber and a particle reservoir. Particles are quantum enatangled and the pairs split into the two chambers. The firing chamber propels particles out of the barrel; the control chamber keeps the particles coherent and energized for a short period, which ends with the bolt either exploding at the target or dissipating. Blasters are necessarily short-range weapons.

Civilian police forces favor non-lethal weapons such as sonic stunners, needlers, pacifiers, and electrostunners. Sonic stunners project sound to induce stun and unconsciousness in targets. Needle weapons fire slender darts carrying an anesthetic or toxic chemical payload. Civilians more commonly use pacifiers as self-defense weapons – they spray their target with an incapacitating chemical. Electrostunners use electromagnetic radiation to scramble a target's nervous system inducing paralysis – the stunclub and neurowhip are melee versions of this weapon.

After centuries of lagging in defensive capability, various forms of armor can now provide substantial protection against all or specific attacks. Para-aramid fibers, advanced composites, extremely durable plastics, and superhard alloys are all used singly or in combination to create the base armors such as ballistic, body, and combat armor, which provide overall defense. Using nanotech, armor can be modified to absorb even more of the kinetic energy from high-velocity projectiles. Armor can also be coated in an ablative polymer, which absorbs energy-based attacks by subliming off as a vapor cloud.

Communications and Computing

Geosynchronous satellites ensuring instant communications on a global scale ring civilized worlds, while fiber optics and wireless services support more localized networks. In space, radio and message lasers provide a steady flow of information within solar systems. The speed of light is still the limiting factor on communication transfer – courier craft and automated message drones carry information between the stars.

Extreme miniaturization, massive parallelism, nanites as independent processors, all have played their part in improving the performance of computers despite the lightspeed barrier. The real advances have been in the realm of software with the creation of true artificial intelligence and the capability to copy and download the full personality and memories of an individual into a machine. Neural interfaces allow cybernetic implants and prosthetics to be controlled as instinctively as their organic originals. The fully immersive virtual reality of the "sensable" can (re)create any sensory or memory experience by direct neural stimulation and connect the participant to the electronic communities of the SenseNet, and competes as a form of entertainment with more passive media such as holovision (three-dimensional television).

Energy

Ultrasafe miniature nuclear fusion reactors supply cheap, plentiful energy. Their hydrogen fuel is mined from ocean water or from the atmospheres of gas giant worlds. Electricity generated by fusion is used to charge compact high-capacity batteries and fuel cells for machines and vehicles. Solar energy can be captured by microscopically thin collection panels at extremely high efficiency, and is a backup energy supply in space and on certain colony worlds. Electricity generation by more antiquated methods such as burning fossil fuels (coal, oil, and natural gas) or nuclear fission is limited to less advanced civilizations. Tapping the fluctuations in the quantum field (so-called vacuum energy) is an active research area.

Industry

Corporate orbital space stations gave industry the zero gravity and micro-gravity environments necessary to develop new alloys and composite materials. Such materials were used in the construction of the space elevators that ascend from Earth's equator into geosynchronous orbit to form the spokes of the giant wheel that is Ring City. Nanotechnology provided nanites (microscopic machines), which could be programmed to rearrange matter at molecular and atomic scales, revolutionizing manufacturing. Nanotech itself is now ubiquitous with nanomaterials used to improve the resilience of objects and even make many self-cleaning with dirt-repelling surfaces as a standard feature.

Law and Order

Improved security and surveillance systems lead to more effective crime detection, while the forensic sciences are the premier means of successful crime detection. Some races and cultures prescribe psychological treatments (involving medications, therapy, and neural controls) to "cure" criminals.

In tandem with improved law enforcement, the best criminals and spies employ the latest electronic countermeasures and stealth gear (such as holographic chameleon suits) to bypass security systems and to minimize their forensic traces. Where once a smart criminal was one who wore gloves to avoid leaving fingerprints, clever crooks use decontamination sprays to destroy DNA evidence. Incompetent thieves only commit one crime before they are caught.

Medicine

An understanding of the human and other genomes has led to the creation of gene therapy cures for most diseases, antiviral treatments to counter viral infections, and therapies to heal radiation damage. Genetic manipulation has created new species of animals and plants; some races have used it to improve their own species or adapt colonists for otherwise inhospitable environments. Biological weapons such as artificial plagues and viruses targeted at specific individuals represent the dark side of medical progress.

Medical scanners can diagnose many illnesses and most types of trauma. Emergency medical treatment can remedy many forms of trauma and quicken the body's natural healing processes. A trained doctor with access to the right hospital equipment can use techniques combining medical nanites and the patient's own stem cells to stimulate healing from massive trauma, regrowing tissue, organs, and even entire limbs in the regeneration tanks. Research into prostheses has created artificial organs and limbs equal or superior to the organic counterparts and neurally linked to the patient's brain.

Transport

Fundamental breakthroughs in science, most notably the unifying of the physical forces, led in due course to the reactionless magneto-gravitational drive. Further research led to spin-off technologies such as artificial gravity, antigravity, and shield technology. For humanity, magneto-gravitational discoveries opened the solar system to full-scale colonization, and later work created the Lagrange Drive, which when activated in either of the two stable Lagrange points formed by the two most massive bodies in a solar system enabled ships to enter a hyperspace dimension and travel at faster-than-light velocities (one light-year per day) to similar regions in other star systems. Shield technology also gave mankind an effective (if imperfect) defense against nuclear bombardment.

The recent discovery of the alien space portals (which permit faster-than-light travel between selected points at a velocity of one light-year per minute) has encouraged the design of smaller starships (as the entry and exit apertures of the portals are limited in size.) Interlock technologies have allowed non-hyperdrive starfighters and shuttles to be mated to the sides of larger ships for portal transit. Mercantile consortia are experimenting with sectioned ships, which are disassembled at a portal entry, sent through individually by minimal automatics, and then reassembled into the full ship at the portal exit.

New modal technologies have produced multi-purpose planetary vehicles, capable of functioning equally well in different environments through automatic reconfiguration. Like traditional vehicles (such as civilian aircars and groundcars), these use electric batteries and fuel cells with ranges in the thousands of kilometers between recharges. Advances in holography also allow ships to camouflage themselves from visual observation.

Vehicles are covered in more detail in HARP SF Xtreme.

Combining Equipment

Multi-purpose devices are incredibly useful – why have a separate personal communicator, holocamera, and handheld computer when all three can be combined into a single unit? Rather than list all the possible combinations, the equipment descriptions are written in terms of individual devices and associated functions. The cost of a combined device is the cost of the individual devices, plus 25% of the most costly part. The total mass of the combined device is the 80% of the sum of the individual devices' masses (savings from only needing one outer case, etc.). The SysOp must approve all combined devices.

Example: *Alice is interested in a combination handheld computer with personal communicator and holocamera. The individual prices are 100 sols (handheld computer), 50 (personal communicator) and 200 (holocamera), the integration cost is 25% of 200 or 50 sols, yielding a total price of 400 sols (100 + 50 + 200 +50). The total mass is 1.28 kilos (0.5 handheld computer + 0.1 personal communicator + 1 holocamera = 1.6 x 0.8 = 1.28 kg).*

Miniaturizing Equipment

Smaller is smarter when it comes to equipment. It takes up less space, requires less effort to carry, and is easier to conceal. Not all types of equipment can be made smaller and still work – weapons, armor and the like have to be full-size to be effective. Most electronic gear can be built smaller without compromising functionality for a price. As the size/mass decreases, the cost multiplier increases as follows:

x2 cost for 1/2 mass/size
x3 cost for 1/3 mass/size
x4 cost for 1/4 mass/size
x5 cost for 1/5 mass/size.

Example: *Alice thinks her new toy is too heavy. While visiting her family on Newton, she browses the local electronics stores and finds a holocamera that is one-fifth the size of a standard camera. Its price is 1000 sols (200 x5 for size). Alice persuades the storekeeper to put in a special order for a new combination handheld computer with personal communicator and miniature holocamera. The price for this will be 1400 sols (100 sols for handheld computer, 50 sols for personal communicator, 1000 sols for miniature holocamera, plus 250 sols for integration). Its total mass will only be 0.64 kilos (0.5 for computer, 0.1 for communicator and a mere 0.2 for the miniature holocamera component, which is 0.8 x 0.8 = 0.64)*

The SysOp has the final say on what can be miniaturized.

Equipment Descriptions

Armor and other Protective Gear

For armor and other protective suits, differences in technological development are represented by differences in maneuver penalties. Early has the most severe penalties which are reduced as the armor progresses first to Mature and later Advanced. For specific penalties, see the tables in Combat, Chapter 10. Power cells are described in the energy cells and ammunition section.

Ablative Enhancement: This is a polymer-based coating, which is applied to the surface of suits of armor. When an energy blast strikes the ablative layer, the polymer absorbs the energy and sublimes off the armor as a cloud of vapor. The intense heat from the bolt is therefore transferred away from the wearer. Each absorbed blast burns off one ablative layer, requiring the armor to be regularly recoated. A typical coating has ten layers and can be purchased in a small canister for spraying on to armor. Ablative Enhancement only protects against Energy attacks.

Ballistic Armor: This is a light armored cloth, made from para-aramid fibers or similar materials. An extension of the original bullet-proof vest, it can be concealed underneath ordinary coats.

Chameleon Suit: This full body suit traps the wearer's body heat inside, so that the temperature of the outer surface equals the environment, rendering the wearer invisible to infrared detection (+100 to Hiding maneuvers versus infrared sensors). The suit also shifts visible color to match the surroundings. The wearer receives a +20 bonus to Stalking and Hiding maneuvers and DB. The suit uses a Utility Power Cell and can only be worn for a maximum of one hour before the heat must be vented. If the suit isn't vented or removed, there is a 1% chance every round (25% chance every minute) that the wearer will suffer a Small Heat critical as the heat energy is released. A controlled vent takes one minute to complete.

Combat Armor: This is the preferred armor of military professionals. It is a fused amalgam shell of advanced composites, ultra-hard ceramics, extremely durable plastics and novel alloys. Combat armor is almost always worn as a complete suit covering all of the body.

Dazzle Neutralizer: This device consists of a special light detector and a set of polarizing filters. It must be integrated into the visors or faceplates of helmets. It detects the light patterns emitted by Laser Dazzlers and alters the visor's opacity to prevent the patterns traveling through to reach the individual's eyes and optic nerve. As the Laser Dazzler's effect travels at the speed of light, the Neutralizer must continuously distort the outer surface of the visor, imposing a –10 penalty to all visual Perception maneuvers while the Neutralizer is active. A person protected by a Dazzle Neutralizer is immune to the effects of a Laser Dazzler.

Desert Suit: Specialized form of the environment suit, which has a builtin refrigeration unit (using a Utility Power Cell) and water reclamation unit (capable of recycling all moisture from respiration, perspiration, or excretion).

Environment Suit: Full body suit designed to protect the wearer against a specific hostile environment. Coldsuit versions are designed for arctic conditions and have a built-in heating system (using a Utility Power Cell) as well as superb insulation.

Hazmat Suit: Designed to protect against "hazardous materials" (hence "hazmat"), this is a lightweight, environmentally sealed, full-body suit. The material is highly resistant to punctures and easily cleaned. A hazmat suit incorporates a helmet and breathing apparatus to fully isolate its wearer from noxious substances in the environment. They are not designed for use in hard vacuum. Hazmat suits may be integrated into other forms of armor.

Heavy Body Armor: This is a stronger version of Light Body Armor, which has additional layers in its weave, and has embedded metal plates to reinforce critical areas.

Kinetic Enhancement: This nanotech modification enables a suit of armor to absorb the kinetic energy of high-velocity projectiles – the armor goes completely rigid on an impact. This add-on has two disadvantages – it only provides its extra protection against Projectile attacks, and it takes a round for the armor to lose its rigidity after being struck. During this recovery round, the wearer forfeits his Quickness bonus (if any) to Defensive Bonus and cannot change facing.

Light Body Armor: This pliable armor is a multi-layered weave of para-aramid fibers, advanced composites, and extremely durable plastics. The ensemble is effective at resisting bullet impact and absorbing energy blasts.

Multi-environment Suits: These full-body suits enable their wearers to function in extreme environments such as toxic planetary atmospheres, the crushing pressures of oceanic depths, extreme heat or cold, and vacuum. They have the full life-support apparatus of a spacesuit, built-in temperature and pressure regulation and a shell made from advanced materials designed to resist the effects of hostile environments.

Reinforced Ballistic: Similar to Ballistic Armor, this is a heavier cloth that incorporates a number of lightweight metal plates for extra resilience. It can be concealed under coats, albeit with difficulty.

Sonic Neutralizer: This device consists of a sound detector, a sound generator and a set of earplugs, and may be integrated into helmets. It counters the stunning and paralyzing effects of Sonic Stunners and Sonic Stunrifles by detecting their special harmonics and setting up a counterharmonic to destructively interfere with them. A person protected by a Sonic Neutralizer is immune to sonic stun weaponry.

Spacesuit: Designed for use in the hard vacuum of space, this a lightweight, completely sealed, full-body suit. The spacesuit incorporates a helmet, breathing apparatus, emergency water and nutrient tubes, and the necessary plumbing to handle bodily functions. Spacesuits may be integrated into other forms of armor.

Shields

Shields in the Tintamar universe are physical objects – no one has yet developed a personal force shield using magneto-gravitic technologies.

Blast Shield - This shield is typically rectangular or oval in shape and may be up to 2m tall, depending on the size of the person using it. It is designed to be rested on the ground or on top of a boot and completely cover the defender. This shield may be designed to lock directly into an armored arm – otherwise it may be gripped with a forearm strip and a long bar running the shield's width. It is normally made from a combination of alloys and advanced composites.

Riot Shield - This shield is normally oval or rectangular in shape. Typically the shield covers the defender from the shoulder to just above the ankle, and is up to 1.5m tall and 1m wide. The defender grips this shield by a single handle and a forearm strap. Riot shields are normally made from advanced composites and fiberglass-like materials – many are transparent so as not to hinder the defender's vision.

Ablative Add-on – This is an ablative layer that can be added to either blast or riot shields to increase their protection against Energy attacks. The layer will degrade completely after taking ten blasts, and must be replenished.

Kinetic Add-on – This is a nanotech enhancement that can be added to either blast or riot shields to increase their protection against Projectile attacks.

Melee Weaponry

For futuristic melee weaponry, changes in technological development are represented by alterations in the weapon's fumble range. Early versions add 1 to the fumble range; Advanced versions subtract 1 from the fumble range.

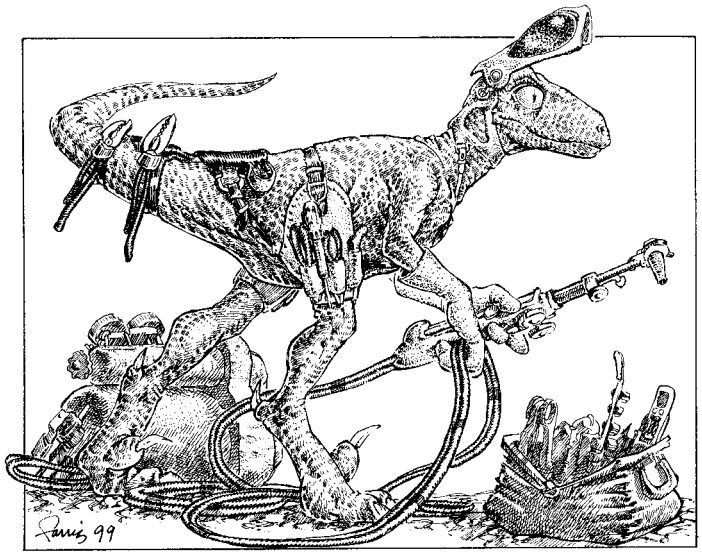
Example: *A Mature-class Vibroknife has a fumble range of 01-02; an Early version would have a fumble range of 01-03; an Advanced Vibroknife has a fumble range of 01.*

Note: Power cells are described in the energy cells and ammunition section.

Neurowhip: This is an advanced whip that delivers a jolt of electromagnetic radiation on contact with the target causing temporary pain, stunning, and paralysis. It requires a Weapon Power Minicell for operation.

Stunclub: An advanced version of the police nightstick or baton, this club delivers a jolt of electromagnetic radiation on contact with the target causing temporary pain, stunning, and paralysis. It requires a Weapon Power Minicell for operation.

Vibroknife: The size of an ordinary knife, the blade of a vibroknife is made from a monofilament composite, which is kept straight by minute high-frequency vibrations. Vibroknives will slice through almost anything, and require a Weapon Power Minicell.



Vibrosword: This is a larger version of the vibroknife with a one-meter blade. It requires a Weapon Power Minicell.

Ranged Weaponry

For futuristic ranged weaponry, changes in technological development are represented by alterations in the weapon's fumble range. Early versions add 1 to the fumble range; Advanced versions subtract 1 from the fumble range.

Example: *A Mature-class Flame Pistol has a fumble range of 01-04; an Early version would have a fumble range of 01-05; an Advanced Flame Pistol has a fumble range of 01-03.*

Note: Power cells, powerpacks and plasmapacks are described in the energy cells and ammunition section.

Assault Blaster: This two-handed energy weapon projects a coherent bolt of energized particles at the target, which release their energy explosively on impact. It is capable of burst fire, and requires a Medium Blaster Powerpack. An assault blaster can be made to overload explosively using an Easy Engineering: Weapons or Medium Machine Operation: Tools maneuver. Treat as a Mark III concussion grenade with a Primary Blast Bonus of +50 and a Secondary Blast Bonus of +25, delivering Medium Blaster criticals.

Assault Laser: This two-handed energy weapon has excellent range and effectiveness. It projects two beams – a pencil-thin visible light beam used for targeting and a thicker beam of microwave radiation, which burns the target. It is capable of burst fire, and uses a Weapon Power Cell.

Assault Rifle: This is a modified two-handed rifle, which is capable of burst fire. Magazine can take 100 rounds. Recoilless versions also exist.

Autoshotgun: This version of the shotgun has an automatic reloading mechanism and a large magazine capacity (50 rounds).

Blaster Pistol: This one-handed energy weapon is the pistol version of the Assault Blaster. It is capable of burst fire, and requires a Medium Blaster Powerpack. A blaster pistol can be made to overload explosively using an Easy Engineering: Weapons or Medium Machine Operation: Tools maneuver. Treat as a Mark II concussion grenade with a Primary Blast Bonus of +50 and a Secondary Blast Bonus of +25, delivering Small Blaster criticals.

Concussion Grenade (Mark I-V): The concussion grenade is a handheld explosive, which when hurled or launched at a spot, detonates on impact. Its principal damage is the blast wave of the explosion. Concussion grenades are rated in lethality by Mark numbers. Multiply the Mark number (I to V) by 2 to give the primary blast zone radius in meters and by 3 to give the secondary blast zone radius in meters – anyone within the blast zones suffers damage. Concussion grenades have a Primary Blast Bonus of +50 and a Secondary Blast Bonus of +25.

Electrorifle: This two-handed energy weapon directs a beam of electromagnetic energy at the target, disrupting nerve signals and inducing temporary pain, stun and unconsciousness. It is capable of burst fire, and uses a Weapon Power Cell.

Electrostunner: This one-handed energy weapon is the pistol version of the Electrorifle. It is capable of burst fire, and uses a Weapon Power Minicell.

Flame Pistol: This one-handed energy weapon fires a stream of superheated gas (or plasma) at a target. It is incapable of burst fire, and requires a Small Plasmapack.

Flame Repeater: This heavy two-handed version of the flame pistol is capable of burst fire. It uses Medium Plasmapacks.

Flame Rifle: This is a two-handed version of the flame pistol. Although it is more lethal and has a better range, it is incapable of burst fire, and requires a Medium Plasmapacks

Fragmentation Grenade (Mark I-V): The fragmentation grenade is a handheld explosive, which when hurled or launched at a spot, detonates on impact unleashing a blast of shrapnel. Fragmentation grenades are rated in lethality by Mark numbers. Multiply the Mark number (I to V) by 2 to give the primary blast zone radius in meters and by 3 to give the secondary blast zone radius in meters – anyone within the blast zones suffers damage. Fragmentation grenades have a Primary Blast Bonus of +75 and a Secondary Blast Bonus of +50.

Gas Grenade (Mark I-V): When detonated, the gas grenade unleashes a minor concussive blast (which effects anyone within 3 meters of the impact point with a Primary Blast Bonus of +25) and releases a cloud of chemical gas. This may be anesthetic or toxic depending on the grenade type. Gas grenades are rated by Mark Numbers. Multiply the Mark number (I to V) by 2 to give the radius of the gas cloud in meters – anyone within the cloud radius is at risk from the gas. Gas grenades do not have a secondary blast zone. Gas grenades are useless in vacuum.

Grenade Launcher: This two-handed weapon can propel grenades (of any type) at speed and over significant distances. One grenade can be launched each round; up to five can be loaded into the launcher at any one time.

Grenade Launcher Attachment: The attachment is a specialized form of the grenade launcher, which must be fitted onto a suitable weapon (any 2-Handed Projectile or 2-Handed Energy weapon) prior to firing. Only one grenade of any type can be loaded into the attachment at any time. Fitting or removing the attachment requires three rounds.

Holdout Gun: This one-handed firearm is a smaller-sized version of a pistol or revolver (incapable of burst fire), which can be easily concealed. This is a single-shot weapon.

Hunting Blaster: This two-handed energy weapon sacrifices burst capability for better range. It requires a Medium Blaster Powerpack. A hunting blaster can be made to overload explosively using an Easy Engineering: Weapons or Medium Machine Operation: Tools maneuver. Treat as a Mark III concussion grenade with a Primary Blast Bonus of +50 and a Secondary Blast Bonus of +25, delivering Medium Blaster criticals.

Hunting Laser: This two-handed energy weapon has excellent range. It is incapable of burst fire and requires a Weapon Power Cell.

Hunting Rifle: This two-handed firearm has a very long range (excellent for big game hunting), but is incapable of burst fire. Its magazine can hold ten rounds.

Incendiary Grenade (Mark I-V): The incendiary grenade is a handheld explosive which, when hurled or launched at a spot, detonates on impact unleashing a mini-fireball that will even burn underwater. Incendiary grenades are rated in lethality by Mark numbers. Multiply the Mark number (I to V) by 2 to give the primary blast zone radius in meters and by 3 to give the secondary blast zone radius in meters – anyone within the blast zones suffers damage. Incendiary grenades have a Primary Blast Bonus of +75 and a Secondary Blast Bonus of +50. Treat Molotov cocktails as Mark I incendiary grenades that must be manually thrown.

Laser Dazzler: This one-handed energy weapon projects a visible light beam encoded with species-specific patterns that will induce paralysis or unconsciousness when seen by their target. It has no effect on robots. It is incapable of burst fire, but only uses a Weapon Power Minicell.

Laser Pistol: This one-handed energy weapon projects two beams – a pencil-thin visible light beam used for targeting and a thicker beam of microwave radiation, which burns the target. It is capable of burst fire and requires a Weapon Power Cell.

Machine Gun: These firearms are very heavy. They can only be fired in burst mode and their magazines can hold 1000 rounds. Three types of machine gun exist – light machine guns, which must be fired from a bipod or tripod, medium machine guns, which must be fired from a supporting tripod, and heavy machine guns, which are normally vehicle mounted antipersonnel weaponry or fixed gun emplacements. (Attempting to fire these weapons without using bipods, tripods, etc., will incur the full recoil penalties.)

Miniblaster: This is a reduced size version of the blaster pistol, designed for easy concealment. It is incapable of burst fire. It requires a Small Blaster Powerpack. A miniblaster can be made to overload explosively using an Easy Engineering: Weapons or Medium Machine Operation: Tools maneuver. Treat as a Mark I concussion grenade with a Primary Blast Bonus of +25 and a Secondary Blast Bonus of +10, delivering Tiny Blaster criticals.

Minilaser: This is a reduced size version of the laser pistol, designed to be more easily concealable. It is incapable of burst fire, but only requires a Weapon Power Minicell.

Needle Pistol: This one-handed projectile weapon uses electromagnetism to fire extremely slender flechette rounds at the target. The effectiveness of this weapon is not in the puncture wound made by the flechette but in the chemical payload, which it delivers on impact into the target's bloodstream. Its magazine can store 20 flechettes. It requires a Weapon Power Minicell, flechettes, and is capable of burst fire.

Needle Rifle: This is a two handed version of the needle pistol with a longer range. Its magazine can store 40 flechettes. It requires a Weapon Power Cell and is capable of burst fire.

Pacifier Pistol: This one-handed pistol-like weapon shoots a fine chemical spray over a short distance. The chemicals affect their target through inhalation and/or contact with exposed skin (i.e. if the shot "hits", resolve as a Resistance Roll rather than looking up a critical table result). Its magazine can hold five pressurized payload containers. It is incapable of burst fire and is ineffective in a vacuum.

Pistol: This one-handed firearm is a semiautomatic weapon capable of burst fire and with a 10-round capacity magazine. Recoilless versions also exist.

Pulse Grenade (Mark I-V): The pulse grenade is a handheld explosive, which when hurled or launched at a spot, detonates on impact. Anyone within 3 meters of the impact point suffers a minor concussive blast with a Primary Blast Bonus of +25. However, its principal damage is an electromagnetic pulse that can scramble electronic devices and harm virtual, AI, and robotic characters. Pulse grenades are rated in lethality by Mark numbers. Multiply the Mark number (I to V) by 2 to give the primary blast zone radius in meters and by 3 to give the secondary blast zone radius in meters – anyone within the blast zones suffers damage. The target numbers for Electronic CRRs to resist the pulse are Mark I: 75, Mark II: 100, Mark III: 125, Mark IV: 150, and Mark V: 175 in the primary blast zone. For the secondary blast zone, the RR targets are: Mark I: 50, Mark II: 75, Mark III: 100, Mark IV: 125, and Mark V: 150.

Revolver: This one-handed firearm has a revolving chamber holding usually six bullets, which is spun to move the next round in as the revolver is fired.

SAM Missile Launcher: This is a portable launcher capable of firing a Mark I Surface-to-Air Missile Launcher. It is loaded in an upright manner (requires ten rounds) but normally rested on the shoulder for firing. Anyone up to 5m away in a 60-degree arc behind the weapon will suffer a +100 Medium Heat attack from the backblast when the missile is launched.

Tankbuster Missile Launcher: This is a combined launcher and missile. It takes five rounds to prepare for launching and can be rested on the shoulder for firing. Anyone up to 5m away in a 60-degree arc behind the weapon will suffer a +100 Medium Heat attack from the backblast when the missile is launched. It has a maximum range of one kilometer.

Shotgun: This two-handed firearm fires metal pellets or up to two cartridges.

Smoke Grenade (Mark I-V): When detonated, the smoke grenade unleashes a minor concussive blast (which effects anyone within 3 meters of the impact point with a Primary Blast Bonus of +25) and releases a cloud of obscuring smoke. This imposes a –50 penalty on all visual Perception maneuvers and may be used as Hard cover against laser energy weapons (until the cloud is dispersed). Smoke grenades are rated by Mark Numbers. Multiply the Mark number (I to V) by 2 to give the radius of the smoke cloud in meters – anyone within this radius will have their vision impaired. Smoke grenades do not have a secondary blast radius. Smoke grenades are useless in vacuum.

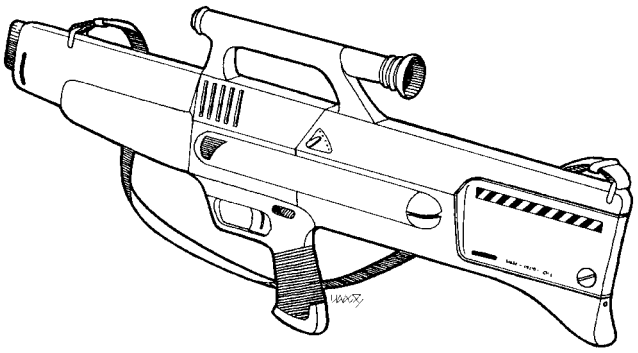
Sonic Stunner: This one-handed energy weapon uses beamed sound to induce stun or unconsciousness in the target. It is not usable in a vacuum and has no effect on robots. It requires a Weapon Power Minicell and is capable of burst fire.

Sonic Stunrifle: This two-handed energy weapon is a rifle version of the sonic stunner with a greater range. It is not usable in a vacuum and has no effect on robots. It requires a Weapon Power Cell and is capable of burst fire.

Submachine Gun: This two-handed firearm is a cut-down version of the machine gun, and is capable of burst fire. Its magazine can hold 100 rounds.

Support Blaster: These bulky and heavy systems are the support versions of the assault blaster. They can only be fired in burst mode. They use Large Blaster Powerpacks. Three types of support blaster exist – light support blasters, which must be fired from a bipod or tripod, medium support blasters, which must be fired from a supporting tripod, and heavy support blasters, which are normally vehicle mounted antipersonnel weaponry or fixed gun emplacements. A Support Blaster can be made to overload explosively using an Easy Engineering: Weapons or Medium Machine Operation: Tools maneuver. Treat as a concussion grenade (Light: Mark IV, Primary Blast Bonus +75, Secondary Blast Bonus +25, Large Blaster criticals; Medium: Mark IV, Primary Blast Bonus +100, Secondary Blast Bonus +50, Large Blaster criticals; Heavy: Mark V, Primary Blast Bonus +100, Secondary Blast Bonus +50, Huge Blaster criticals).

Support Laser: These bulky and heavy systems are the support versions of the assault laser. They can only be fired in burst mode. They require five Weapon Power Cells to be fully loaded. Three types of support laser exist – light support lasers, which must be fired from a bipod or tripod, medium support lasers, which must be fired from a supporting tripod, and heavy support lasers, which are normally vehicle mounted antipersonnel weaponry or fixed gun emplacements.



Weapon Accessories

Flash Suppressor: When added to a firearm, the suppressor reduces the flash as rounds are fired. This prevents the shooter from losing his night vision but does not conceal the shooter's position. If a shooter uses a projectile firearm without a flash suppressor, the shooter suffers a –50 penalty (moonlight, starlight, darkness) to all Attack Rolls and all Maneuver Rolls (requiring vision) for the round immediately after firing.

Holographic Sight: When added to a ranged weapon, these sights place a visible dot on the target to assist with targeting (Early: +5 to OB, Mature: +10, Advanced: +15). This holographic dot is only visible to the shooter. It requires a Utility Power Minicell.

Laser Sight: When added to any weapon (including lasers!), this projects a slender beam of visible light to assist with targeting (Early: +5 to OB, Mature: +10, Advanced: +15). However, anyone who spots the targeting dot will count as aware against Sniping attempts. It requires a Utility Power Minicell.

Silencer: If added to a firearm, this reduces the sound made by gunshots, imposing a –60 penalty on all hearing-based Perception maneuvers to hear the shot(s). Early versions yield a –40 penalty; Advanced versions have a –80 penalty.

Weapon Holster: Designed to carry one-handed projectile and energy weapons conveniently.

Weapon Scope: This targeting accessory can be added to any ranged weapon. It reduces penalties due to Range Increments by 20 for attacks made with Sniping maneuvers and Well-aimed Shot Combat Actions. (Early: reduce penalty by 10; Advanced: reduce penalty by 30). Range penalties cannot be reduced below zero. It also increases the number of Range Increments at which Sniping may be attempted (Early: +3 to 5 RIs, Mature: +4 to 6 RIs, Advanced: +5 to 7 RIs) – non-cumulative with any other technology but can be combined with Telescopic Eyes Talent.

Weapon Bipod: Burst-capable and support weapons can be supported on bipods, allowing the firer to ignore recoil penalties. It takes five rounds to set up a bipod and mount a weapon on it; likewise it takes five rounds to fully dismantle the system.

Weapon Tripod: Burst-capable and support weapons can be supported on tripods, allowing the firer to ignore recoil penalties. It takes seven rounds to set up a tripod and mount a weapon on it; likewise it takes seven rounds to fully dismantle the system.

Energy Cells and Ammunition

For items in this section, the cost should be doubled for Early versions and halved for Advanced versions. Specific modifications are noted in the item descriptions.

Example: *A Mature small plasma cartridge costs 50 sols, whereas an Early version retails at 100 credits and an Advanced version is a bargain at 25 sols.*

Note: Power Cells do not recharge themselves – they need to be recharged from a microfusion generator or "mains supply".

Assault Rifle Ammunition: Box of 100 rounds.

Holdout Ammunition: Box of 100 rounds.

Hunting Rifle Ammunition: Box of 100 rounds.

Machine Gun Ammunition: Box of 1000 rounds.

Pistol Ammunition: Box of 100 rounds.

Revolver Ammunition: Box of 100 rounds.

Shotgun Ammunition: Box of 100 cartridges.

Submachine Gun Ammunition: Box of 100 rounds.

Armor Piercing Ammunition: This special ammunition is designed to drill though armor (+10 to OB, -10 to damage). It can be made in any firearm caliber.

Hollowpoint Ammunition: This special ammunition is designed to deform on impact, causing maximum damage inside the target's body (-10 to OB, +10 to damage). It can be made in any firearm caliber.

Payload Ammunition: This hollow ammunition is designed to shatter on impact (-20 to damage), releasing its chemical payload (a ball of paint, toxic chemical, bioweapon, etc.). It can be made in any firearm caliber.

Tracer Ammunition: These rounds glow en route to their target (providing a +5 OB bonus to all attacks made using Aimed Burst or Spread Burst actions, but with a –5 penalty to damage.)

Flechettes (toxic): Box of 20 slender slivers made from glass and advanced composites. Chemical payload can be any of a number of possible poisons (often variants of Agonilin). Flechettes may be used in all needler weapons.

Flechettes (tranquilizer): Box of 20 slender slivers made from advanced composites and plastics (to minimize injury to the target). Attacks made using these flechettes are made using the Puncture Critical Table to determine if they hit **but no damage is taken from this critical table.** Chemical payload is an anesthetic tailored to a particular species or biosphere (typically a variant of Dormilene). Flechettes may be used in all needler weapons.

Pacifier Spray (toxic): Pressurised container holding a dose of a chemical payload, normally a poison tailored to a particular species or biosphere, (typically a variant of Agonilin or Synamort). Used in pacifier pistols. Use Puncture Critical Table to determine if spray makes contact and then resolve poison effect as per toxin description. Sold in boxes of 10.

Pacifier Spray (tranquilizer): Pressurised container holding a dose of a chemical payload, normally an anesthetic tailored to a particular species or biosphere, (typically a variant of Dormilene). Used in pacifier pistols. Use Puncture Critical Table to determine if spray makes contact and then resolve tranquilizer effect as per toxin description. Sold in boxes of 10.

Large Blaster Powerpack: These cartridges combine a reusable canister holding sufficent gas particles under high pressure for 500 shots (Early: 250, Advanced: 1000) from a support blaster with an array of five Weapon Power Cells. The canister may be refilled while the power cells are recharged.

Medium Blaster Powerpack: These cartridges combine a reusable canister holding sufficent gas particles under high pressure for 100 shots (Early: 50, Advanced: 200) from an assault blaster, hunting blaster or blaster pistol with a builtin Weapon Power Cell. The canister may be refilled while the power cell is recharged.

Small Blaster Powerpack: These cartridges combine a reusable canister holding sufficent gas particles under high pressure for 20 shots (Early: 10, Advanced: 40) from a miniblaster with a builtin Weapon Power Minicell. The canister may be refilled while the power cell is recharged.

Medium Plasmapack: These cartridges contain a canister with sufficient flammable gas under high pressure for

20 shots of a flame rifle or flame repeater and a builtin Weapon Power Cell

Small Plasmapack: These cartridges contain a canister, with sufficient flammable gas under high pressure for 10 shots of a flame pistol, and a builtin Weapon Power Minicell.

Deuterium canister: This contains hydrogen deuterium (the fuel of choice for nuclear fusion). 75% of the price is for the canister itself.

Microfusion generator: This is a non-portable generator, which uses very small-scale nuclear fusion to produce electricity. A single generator can supply 10000 energy units per hour for 10 hours on a single canister of hydrogen deuterium – the total energy output is 100,000 energy units. (Early versions can supply 5000 units per hour and are twice as massive; Advanced versions are half the size of their Mature counterparts.) Generators capable of supplying energy at faster rates exist – models capable of 20,000 energy units per hour output cost **four** times as much as standard generators, while 30,000 energy units per hour output costs **nine** times as much. These rapid generators are used in certain vehicles where there isn't room for multiple standard generators. All generators are very safe and extremely tamper-proof.

Utility Power Cell: This is a relatively large battery (10 cm cube) designed to power large devices and machines. It can store up to 200 energy units and may be fully re-charged in one hour from a suitable generator. One energy unit will normally power a device for one day. (Early versions store 100 units and take two hours to recharge; Advanced versions have 400 energy unit capacities.)

Utility Power Minicell: This is a small battery (2 cm cube) designed to power handheld and similar small devices. It can store up to 20 energy units and may be fully recharged in two hours from a suitable generator. One energy unit will normally power a device for one day. (Early versions store 10 units and take four hours to recharge; Advanced versions have 40 energy unit capacities and take one hour to recharge.)

Vehicle Power Pack: This is a bulky battery (40 cm cube) for use with vehicles (such as groundcars etc.) that are too small to mount their own microfusion generator. The power pack holds 2000 energy units and takes five hours to fully recharge. (Early versions store 1000 units, and take ten hours to recharge; Advanced versions have 4000 energy unit capacities.)

Weapon Power Cell: This is a medium-sized battery (5 cm cube) capable of providing short intense bursts of power for use with energy weapons. It can provide 100 energy units (or shots) before requiring one hour to fully recharge. For weapons, which don't use power for shots, one energy unit will keep the device operational for one day. (Early versions store 50 units and take two hours to recharge; Advanced versions have 200 energy unit capacities.)

Weapon Power Minicell: This is a smaller version (a 2 cm cube) of the weapons-grade power cell. It can provide 20 energy units (or shots) before requiring one hour to fully recharge. For weapons, which don't use power for shots, one energy unit will keep the device operational for one day. (Early versions store 10 units and take two hours to recharge; Advanced versions have 40 energy unit capacities.)

Computers, Communications, and Scanners

Note: Unless otherwise stated, all the devices in this group require a Utility Power Minicell or must be "plugged into the wall" for mains electricity. Early versions will cost double and have twice the mass of their Mature counterparts. Advanced versions will be half the cost of their Mature analogues. The most appropriate skill for the equipment is listed in italics after the description where sensible. Scanner ranges and the mechanics of how to resolve their use is fully detailed in the Adventuring chapter, *Scanners, Sensors and Countermeasures* section.

Example: *A Mature Holocamera has a mass of 1kg and a cost of 200 sols. An Early Holocamera has a mass of 2kg and a price of 400 sols. An Advanced version has a mass of 1kg but a cost of 100 sols.*

Audiovisual Recorder: This is an ultrahigh resolution digital video camera, which can record onto removable storage disks or transmit to suitable receivers. *Audiovisual Recording*

Bioscanner: This handheld device can detect life forms (wholly new categories of life won't be recognized), identify them (if the life form is listed in the scanner's database) and provide specific information on the life form's physiology. It requires five rounds to complete a scan. *Machine Operation: Scanners*

Cashcard Scanner: This portable device scans cashcards for authenticity and handles cash transfers in retail transactions. It requires one round to scan a cashcard. *Machine Operation: Scanners*

Chemanalyzer: This handheld device can perform an elemental analysis on a few grams of a substance and identify it using an internal database or via network connection to external databases (for obscure proprietary chemical compounds). It requires five rounds to complete an analysis. *Machine Operation: Scanners*

Computer – Handheld: This is a portable computer small enough to be held in one hand. *Computer Operation*

Computer – Personal: This computer is an order of magnitude more computationally powerful than a handheld computer. Personal computers are laptop computers for easy mobility. *Computer Operation*

Computer – Mainframe: This computer is three orders of

magnitude more computationally powerful than a personal computer. A mainframe is not portable and is powered by a mains supply with one or more Utility Power Cells as emergency backup. *Computer Operation*

DNA Scanner: This handheld device can perform a DNA analysis on any suitable biological sample for matching with its internal databases or later external identification. The analysis requires five rounds. *Machine Operation: Scanners*

Electronic Cashcard: Credit/debit cards used instead of coins and banknotes. These usually contain fingerprint, retinal, and in some cases, DNA scans of their owners to combat fraud.

Headset Communicator: Consisting of an earpiece, a sensitive microphone, and a miniature radio communicator, this unobtrusive device (-20 penalty to Perception to spot it) has an effective range of 1 km. *Machine Operation: Communications*

Heads Up Display: This can be integrated into helmets, goggles, or lenses, or be manufactured as special-purpose spectacles. The inner surface of the spectacles, helmet visor, etc., can be transformed into a miniature monitor to display information.

Holocamera: This is an ultrahigh resolution digital video camera capable of recording its surroundings as three-dimensional holographic data. *Audiovisual Recording*

Holoprojector: This device can be used to display holograms. It comes in a portable form and a television-style unit for home use. *Machine Operation: Multimedia*

Mini-microscope: This is a portable optical and electron microscope for examining specimens down to nanometer scale (in electron mode). It will fit in a suitcase, but requires a Utility Power Cell or mains electricity for operation. *Machine Operation: Instruments*

Palm Print Analyzer: This portable device can record the skin patterns associated with fingerprints and palms of any hand that is placed on it. Police detectives use these devices to record fingerprints left at crime scenes. The recording process takes five rounds. To identify individuals, the analyzer must be networked to a suitable database. *Machine Operation: Scanners*

Personal Communicator: This is the mobile (cell) phone, and comes in many shapes and sizes. Its maximum range to a signal relay is 20 km. The personal communicator is most useful on worlds with a high communications infrastructure. *Machine Operation: Communications*

Poison Sniffer: A specialized chemical analyzer, the poison sniffer samples the air for the presence of biological and chemical toxins. Its probes can also test liquids and foodstuffs (simply place the probe within 1 cm of the suspect substance.) On detecting a toxin, the sniffer will trigger an alarm (audible or otherwise) and provide a readout on the poison. The sniffer is only as good as its internal database and is vulnerable to new or unknown toxins. It requires one round to detect a toxin. *Machine Operation: Scanners*

Radiation Detector: This portable device registers the type and severity of all electromagnetic radiation in the surroundings. It requires two rounds to categorize initial readings. Thereafter it updates continuously. *Machine Operation: Scanners*

Radio Communicator: Handheld communicators have a range of 100 km, while "portable" communicators (about the size of a backpack) have a range of 1000 km. Portable communicators use Utility Power Cells. Radios with much greater ranges exist but they are not portable. *Machine Operation: Communications*

Removable Storage Disk: These nonvolatile rewritable disks are the ubiquitous standard for all forms of data storage. Each is the size of a modern credit card.

Retinal Scanner: This pen-sized device can scan the retinal patterns of an individual in one round, and subject to a suitable database connection, can uniquely identify the scanned person. *Machine Operation: Scanners*

Satellite Communicator: This is a relatively bulky version of the mobile phone, which uses orbiting satellites (in geosynchronous orbit) to relay signals. The satellite communicator only functions on worlds with established communications networks but is very useful when exploring the wilderness regions of those worlds where normal cell phones have no coverage. Requires a Utility Power Cell. *Machine Operation: Communications*

Satellite Navigator: This handheld device receives information from global positioning systems and integrates it with terrain and urban maps. Location can be accurately determined using civilian systems to within ten meters (Early: 20m, Advanced: 5m) Military systems (Restricted) are accurate to within one meter and cost twice as much as civilian equipment. Both versions must be calibrated to a specific world (requir-

ing proper data and 30 minutes), and uses a Utility Power Minicell. The world must have a series of navigation satellites already in situ. *Navigation* or *Machine Operations: Scanners.*

Sensable Projector: Early sensable projectors required the individual to wear a full bodysuit, which allowed the experiences from a sensable recording to be sensed by the wearer. Later sensable projectors beam the sensory information directly into the watcher's brain using a neural interface. Both use Utility Power Cells. *Machine Operation: Multimedia*

Sensable Recorder: Early sensable recorders were full bodysuits where a multitude of sensors recorded what the wearer experienced and the wearer's bodily responses. Later recorders use neural interfaces to tap the sensory stimuli directly from the brain. Both use Utility Power Cells. *Audiovisual Recording*

Tactical Scanner: This handheld unit employs motion detection and thermal imaging to scan for life forms within its scan radius. Military versions can also receive short-wave radio bursts so that friendly life forms have a mechanism of identifying themselves to the scanner. Building schematics and maps can be downloaded into the scanner so that these can be overlaid on scan results for the complete situational representation. This device can be blocked by shielding, really thick walls, etc, and requires five rounds for the initial scan – thereafter it updates its readings every second. *Machine Operation: Scanners*

Techscanner: This large portable device can scan for power emanations, trace circuits, and perform basic chemical analyses. In combination with a database of detailed schematics, it can assist with the speedy diagnosis of equipment failures. It uses a Utility Power Cell and requires between five rounds (portable device) and one minute (large piece of machinery) to complete a scan. *Machine Operation: Scanners*

Medical Gear

For medical gear, Early versions will cost twice as much and be twice as massive as their Mature descendants, e.g. an Early Blood Mill is 4000 credits and 100 kg whereas a Mature version is 2000 credits and 50 kg. Early versions also double the required healing time (e.g. an Early Arterial Fixer only heals 1 concussion hit every two rounds.) Advanced versions can **either** halve the required healing time **or** be used to treat patients from several intelligent species – this option is decided when the device is manufactured and so is the SysOp's choice. For medicines, drugs and toxins, Early versions will cost twice as much as the listed price, while Advanced versions will cost half the listed price. All Advanced drugs and toxins increase their RR, PB or CRR levels by 20 points, e.g. Advanced Placidin is RR(150). Note that all medicines, drugs and toxins are species-specific.

Arterial Fixer: This device uses a combination of biochemicals, nanites, and cloned stem cells to repair damage to arteries and veins at a rate of 1 concussion hit of damage (or 1 point of bleeding per round) per round. The patient must continue to receive treatment from the Fixer for ten minutes after all damage is cured to ensure the healing is permanent. Arterial Fixers are not portable and draw on mains electricity. They require either Hard First Aid or Medium Medical Practice maneuvers to operate correctly.

Blood Mill: Using a sample of the patient's blood and a batch of suitable biomaterials, the Blood Mill can generate artificial blood that is identical to the patient's own blood, except that the replacement blood is disease-free. Initial blood analysis and manufacture requires ten minutes. Blood Mills are excellent for transfusions and supporting surgical procedures. They require a Medium Medical Practice maneuver for correct operation.

Catalysis Bandage (anesthetic): When placed over a surface wound, this will deliver a carefully administered dose of local anesthetics, regeneration chemicals and medical nanites, reducing any associated maneuver penalties by 20. This reduction is permanent after one hour and the bandage can then be removed. The bandage requires a Light First Aid maneuver to apply.

Catalysis Bandage (coagulant): When placed over a bleeding injury, this bandage will release a series of chemicals that will catalyze the natural properties of blood to coagulate (clot and stop bleeding). This bandage will reduce bleeding at a rate of 1 hit per round, e.g. an injury bleeding at 3 hits per round will be reduced to 2 hits after 1 round, 1 hit after 2 rounds, and will stop completely after 3 rounds. The bandage must remain worn (and undamaged) for one hour or the wound may reopen and start bleeding again. The bandage requires a Light First Aid maneuver to apply.

Catalysis Bandage (skin regen): When placed over an area of damaged skin (from a burn, frostbite, etc.), this bandage will release regenerative chemicals and medical nanites to stimulate healing. The patient will recover up to 10 hits per hour (from surface injuries only) while wearing this bandage. The bandage requires a Light First Aid maneuver to apply.

Cryogenic Tank: This tank is the shape and size of a coffin. A patient in the tank can be placed in a state of suspended animation using a combination of special chemicals, medical nanites, and extreme cooling to "freeze" the patient. All being well, the patient can be revived safely at a later date. Both suspension and revival are Very Hard Medical Practice maneuvers. Cryogenic tanks use mains electricity and multiple

Utility Power Cells as backups – power failures are fatal, as the patient will "melt" in an uncontrolled fashion, leading to massive cellular destruction.

Decontamination Spray: Sold in one-kilo pressurized canisters, doctors use this nanite spray to destroy organic and microbial contamination. One canister can cleanse up to one hundred square meters of surfaces. Criminals use this to destroy DNA trace evidence at crime scenes.

Dermal Regenerator: This device uses regenerative chemicals, medical nanites and the patient's own body to cure surface damage to skin (such as burns, frostbite, etc.) and close open wounds. The Regenerator will heal damage at a rate of one concussion hit per minute. The patient will require twice as much food and sleep in the next 24 hours after receiving this treatment. Dermal Regenerators are not portable. They require Hard Medical Practice maneuvers to operate correctly.

Hypodermic Spray: Used to inject medications without the pain of needles.

Instant Cast: This thin sleeve is placed around the body area where a bone has been broken. A release tab will cause it to harden within one round, reducing any associated maneuver penalties by half (round down) while it is worn. It requires a Light First Aid maneuver to use.

Instant Splint: This thin sleeve can be placed around any broken limb, whereupon it can be activated to harden

within one round, reducing any associated maneuver penalties by half (round down) while it is worn. It requires a Light First Aid maneuver to use.

Laser Scalpel: More hygienic than its metal predecessors, the laser scalpel can burn away dead tissue. It is unsuitable as a weapon – its range is only 1 cm and it is limited to Tiny Laser attacks. It uses a Utility Power Minicell.

Life Support Unit: This device is the size of a backpack and boasts an astonishing array of probes, tubes, and attachments. When placed on a patient who has suffered a mortal injury (i.e. a critical which includes a "dies in a number of rounds" component), the life support unit will prevent death by taking over the failing bodily functions (respiration, circulation, etc.), and can resuscitate a patient who has died very recently. This unit requires an Extremely Hard First Aid maneuver to use safely, and can only keep a patient alive for an hour. It uses a Utility Power Cell.

Medical Scanner: This portable handheld device is designed to scan for vital signs and abnormalities from the norm (such as external or internal damage.) It can detect injuries (such as bone fractures) and viral infections, but cannot prescribe treatments and takes up to one minute to perform a full body scan. It relies on a medical and anatomical database that is specific to one species, and uses a Utility Power Minicell. It requires either a Hard First Aid or a Medium Medical Practice maneuver to operate correctly.

Medical Supplies (biochemicals): A single canister of biochemicals will be sufficient for 20 uses of an Arterial Sealer, 10 uses of a Blood Mill, 20 uses of a Dermal Regenerator, 10 uses of a Skeletal Healer or Tissue Healer, or 4 uses of a Regeneration Tank.

Medical Supplies (nanites): A single canister of medical nanites will be sufficient for 20 uses of an Arterial Sealer, 10 uses of a Blood Mill, 20 uses of a Dermal Regenerator, 10 uses of a Skeletal Healer or Tissue Healer, or 4 uses of a Regeneration Tank.

Medicines: Prices are per dose. Mass is negligible. Note the table also includes illicit drugs and toxins.

Regeneration Tank: For severe injuries such as lost limbs or damaged/destroyed organs, immersion in a full-body regeneration chamber is the prelude to organ and body reconstruction. A combination of medical nanites, stem cells cloned from the patient's own body and stimulated to differentiate, and chemicals are employed to heal the patient, regrowing new tissue, bones, organs, and limbs. Regeneration Tanks combine all the features of Arterial Fixers, Blood Mills, Dermal Regenerators, Skeletal Healers, and Tissue Healers, and have the same healing time for specific injuries, but can heal multiple injuries in parallel. Regrowing appendages, limbs, destroyed organs, etc., takes 1d10 days depending on the extent

of the destruction. Regeneration tanks are infirmary equipment and require Very Hard Medical Practice maneuvers for safe operation.

Scannerbed: This is a hospital version of the Medical Scanner where the patient lies down on the "bed" and a full body scan is performed in five rounds. It also relies on medical and anatomical databases, and uses a Utility Power Cell. It requires either a Hard First Aid or a Medium Medical Practice maneuver to operate correctly.

Skeletal Healer: This device injects biochemicals and medical nanites into damaged cartilage and fractured bones and joints to stimulate healing. The Skeletal Healer requires 1 hour to heal a sprain or cartilage damage, 3 hours to heal a simple broken bone or joint, 6 hours to heal a compound bone or joint fracture, and 12 hours to heal a shattered bone or joint. All associated maneuver penalties are eliminated. It cannot restore a completely destroyed bone or joint, and works on one injury at a time. The patient is held stationary during the process (and is frequently anesthetized). Afterwards the patient must rest for one full day and will require three times normal sustenance. The Skeletal Healer is a piece of infirmary equipment and is not normally portable. It requires a Very Hard Medical Practice maneuver for safe operation.

Suture Pen: This pen-sized device delivers glue that both catalyzes coagulation and seals the wound. It takes one round per point of bleeding to close a wound using the suture pen. Successful use requires a Medium First Aid maneuver.

Tissue Healer: This device injects biochemicals and medical nanites into damaged tissue and organs to stimulate healing. The Tissue Healer requires 1 hour to heal muscle or tendon damage and 3 hours to heal nerve or organ damage (not the brain), and works on one injury at a time. All associated maneuver penalties are eliminated. The Tissue Healer cannot repair completely destroyed muscles, tendons, nerves, or organs. The patient is held stationary during the process (and is frequently anesthetized). Afterwards the patient must rest for one full day and will require two times normal sustenance. The Tissue Healer is a piece of infirmary equipment and is not normally portable. It requires a Very Hard Medical Practice maneuver for safe operation.

Personal Gear

Adhesive Spray (semipermanent): This semipermanent glue will bond any two surfaces (spray on both). It can be removed using a specific debonding agent without causing damage to the surfaces. Adhesive and debonding agents are sold together (in separate aerosols).

Adhesive Spray (temporary): This firm safe glue will prevent the glued surfaces from sliding across each other. It can be pulled off relatively easily and then biodegrades quickly. Can be used on all surfaces safely (including skin) so useful for avoiding embarrassing moments when wearing infeasibly skimpy costumes.

Chronometer: For humans, typically a digital wristwatch, normally self-programmable to adapt to the differing day lengths of human worlds. Double cost for Early versions; halve it for Advanced.

Clothing – business: A full set of clothing appropriate for wearing during work hours in an office, factory, or other civilian equivalent.

Clothing – dress: A fashionable suit of clothes appropriate to formal occasions.

Clothing – leisure: A full set of clothing appropriate for leisure and sports activities.

Clothing – uniform: A full suit of clothes of a distinct pattern and style required to be worn during work hours by employees of certain corporations, government agencies, and the military.

Fire Extinguisher: A canister containing fire suppressant foam. One canister is sufficient to douse up to ten square meters. Double cost and mass for Early versions; halve cost for Advanced.

Flashlight: A handheld torch providing up to 10 meters of directed illumination, operating on a Utility Power Minicell. Double cost for Early versions; halve it for Advanced.

Footwear – business: Smart, but relatively comfortable, shoes, boots or equivalents.

Footwear – dress: Fashionable, often uncomfortable, footwear for formal occasions.

Footwear – leisure: Comfortable and usually rugged shoes suitable for sporting and leisure pursuits.

Footwear – uniform: Regulation footwear required by certain organizations and the military.

Laser Torch: This portable but bulky tool uses a laser to cut and weld the toughest alloys. Don't fumble this. It draws upon a Utility Power Cell. It is relatively useless as a weapon (range 1m, attacks as Medium Laser) but it can cut through rock and metal at a rate of 1 cm per round. Double cost and mass for Early versions; halve cost for Advanced. Use requires *Machine Operation: Tools*

Lenses – Anti-Glare: Contact lenses (or lenses fitted into spectacles, goggles, etc.), which darken in response to bright light. Customized for the user. Double cost for Early versions; halve it for Advanced.

Lenses – Infrared: Contact lenses (or lenses fitted into spectacles, goggles, etc.), which can see in infrared and

display the infrared view to the wearer. May have simple neural interface to switch on/off. Double cost for Early versions; halve it for Advanced.

Lenses – LowLight: Contact lenses (or lenses fitted into spectacles, goggles, etc.), which can amplify scenes that are poorly illuminated (in visible light) and display the improved view to the wearer. May have simple neural interface to switch on/off. Double cost for Early versions; halve it for Advanced.

Lenses – Multifunction: Contact lenses (or lenses fitted into spectacles, goggles, etc.), which can function as Anti-Glare, Infrared, LowLight, and Telescopic lenses. May have simple neural interface to switch on/off and between modes. Double cost for Early versions; halve it for Advanced.

Lenses – Telescopic: Contact lenses (or lenses fitted into spectacles, goggles, etc.), which can magnify viewed scenes by up to 1,000x. May have simple neural interface to switch on/off and to control zoom. Double cost for Early versions; halve it for Advanced.

Magnetic Boots: These have magnetic layers in their soles enabling their wearer to adhere to metal surfaces – most useful in zero gravity and microgravity environments. Double cost for Early versions; halve it for Advanced.

Notepad: A traditional pad of paper. No batteries required.

Pen: Yes, a pen. You write with it, remember?

Personal Kit: A small bag for toiletries, eating utensils, and other essentials.

Suitcase: Collapsible, rugged luggage container.

Toolkit: A set of portable tools appropriate for a particular Craft or Engineering skill. Double cost for Early versions; halve it for Advanced.

Utility Belt: This belt has multiple fasteners, hooks, clips, and holes to hang multiple items from it.

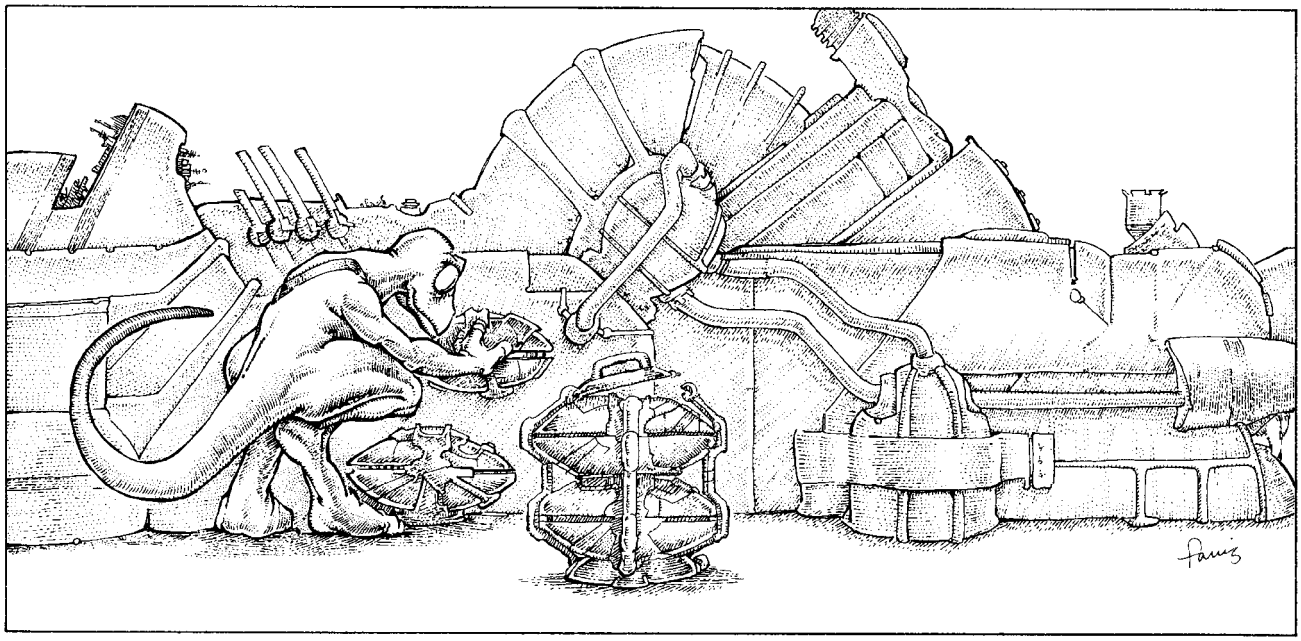
Stealth and Counter Stealth Gear

For stealth gear, Early versions will cost double and have twice the mass of their Mature counterparts. Advanced versions will be half the cost of their Mature analogues. The most appropriate skill for the equipment is listed in italics after the description where sensible.

Example: *A Mature disguise kit costs 500 sols and masses 4kg; an Early version costs 1000 sols and masses 8kg; an Advanced disguise kit costs 250 sols but masses 4kg.*

Contact Microphone: This flat disk, containing a powerful directional microphone, can be placed against a wall to detect sounds made on the other side (through up to ten meters' thickness). The sounds are then played through the system's speaker. Extremely useful for cracking mechanical safes. *Locks & Traps*

Disguise Kit: Wigs, dyes, colored contact lenses, cheek pads, makeup, artificial skin, etc., for disguising oneself as a different member of the same species. *Disguise*



Electronic Bypass Kit: Electronic equivalent of lock picks for opening and/or disarming electronic locks, security cameras, etc. *Electronic Bypass*

Electronic Countermeasures Kit: A set of tools to adjust equipment so that true readings are masked and false signals are received by scanning devices. *Machine Operation: Tools* or *Engineering.*

Electronic Surveillance Device: Extremely compact device (1 cm cubed), which may record audio and/or visual information and transmit this up to one kilometer away. *Machine Operation: Communications*

Electronic Surveillance Detector: Handheld device which can scan an area for the electronic emanations from surveillance devices (either from their power cells or their transmissions). It takes 1 round to scan a cubic meter. *Machine Operation: Scanners*

Electronic Surveillance Neutralizer: Compact device (easily carried in a human palm), which transmits electronic white noise scrambling any surveillance devices within five meters. This will also scramble radio or mobile phone transmissions. Observers will know that a neutralizer is operational. *Machine Operation: Communications*

Electronic Tracker: Extremely compact device (1 cm cubed, alternate shapes available) that can transmit coded radio pulses, which may be detected up to one kilometer away. The Tracker may be activated remotely at up to one hundred meters and/or on a time delay. *Machine Operation: Communications*

Explosive Detonator: Used to delay the detonation of an explosive material until a set time. Precision of timing can be accurate to one second. *Demolitions.*

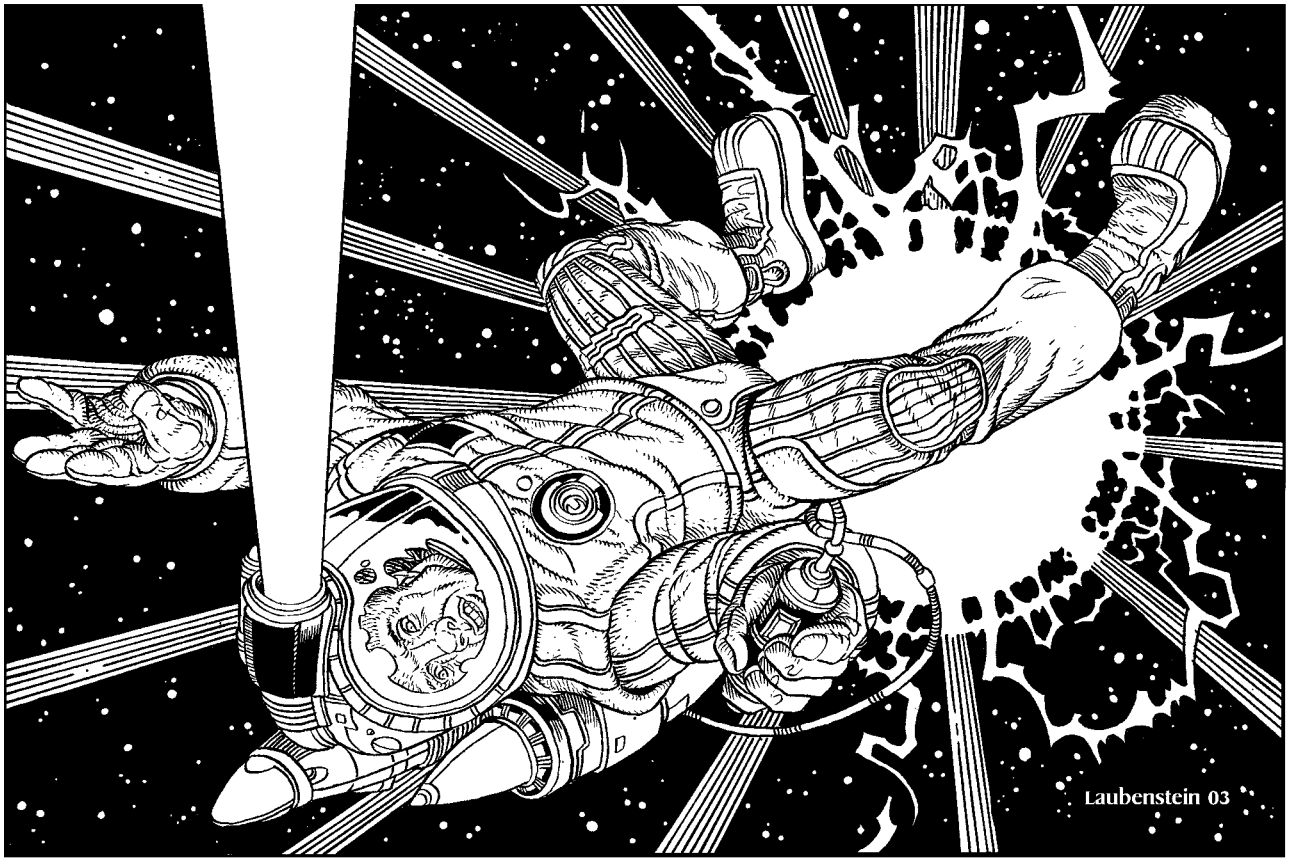
Forensic Kit: Miniature tools and hermetically sealed containers for collecting and storing evidence such as fingerprints, hairs, blood, etc. *Forensics*

Laser Listener: These handheld devices bounce lasers off solid surfaces (such as windows) and convert the detected vibrations (from sounds made in a room say) into sounds audible/recordable at the device. Line of sight is required. *Machine Operation: Communications.*

Lock Pick Set: A set of mechanical lock picks and "skeleton keys" for opening mechanical locks. *Locks & Traps.*

Plastic Explosive: 100g of plastic explosive will deliver 1 Structural Hit (Mature; 200g required for Early, 50g for Advanced). Sold in blocks of 1 kg. May be detonated by wetting with a suitable chemical (supplied) in which case explosion occurs 5 rounds after contact or using some form of time-delay trigger (see Explosive Detonator, above). *Demolitions.*

Vibration Countermeasure: This small disc can be placed on a solid surface whereupon it will vibrate that surface confounding attempts to read natural vibrations using a laser listener or a contact microphone. *Machine Operation: Communications*



Survival Gear

For survival gear, Early examples will cost double and have twice the mass of their Mature analogues. Advanced versions will be half the cost of their Mature counterparts.

Example: An Early All-weather Tent costs 400 credits and has a mass of 8 kg. A Mature All-weather Tent costs 200 credits and has a mass of 4 kg. An Advanced All-weather Tent costs 100 credits and has a mass of 4 kg.

Air Mattress: An inflatable mattress with built-in pump, pillow and blanket. Collapses into a 10cm cube.

Air Tank: Sealed canister containing breathable air for use with other apparatus. Air tanks come in 1 hour (2kg), 4 hour (8 kg), and 24 hour (40 kg) sizes.

All-weather Bag: Sleeping bag usable in temperatures from –10 degrees Celsius to 50 degrees Celsius. Can be folded and rolled up into a cylinder 10 cm long and 5 cm in diameter.

All-weather Tent: Collapsible tent made of highly insulating material and able to fit four individuals. When dismantled, folds down to a 20 cm cube.

Backpack: Multi-purpose weather-proof bag with many compartments.

Breath Mask: Facemask covering mouth, nose and eyes and supplied by oxygen from an air tank or filter. They are only usable in atmospheres with sufficient pressure and no toxic components.

Camouflage Netting: Available in multiple sizes, this material incorporates nanomaterials which can be simply configured into a range of colors and tones to provide a +20 Camouflage bonus (Early: +10, Advanced: +30) to anything that it covers. Netting uses a Utility Power Minicell during reconfiguration. Price is per square meter.

Collapsible Furniture: Lightweight, collapsible chairs and tables. Price per piece.

Compass – Inertial: Handheld device that measures location in terms of movement from a specific starting point. This must be calibrated to a specific world (requiring proper data and 30 minutes), and uses a Utility Power Minicell.

Compass – Magnetic: Handheld device that points the direction of magnetic north, but only usable on worlds with a discernible magnetic field.

Coolpack: This can be attached to up to six beverage cans to lower/raise them to a specific temperature and maintain them at that point. It uses a Utility Power Minicell.

Environment Tent: This version of the all-weather tent can be sealed against vacuum and can be used in environments of up to 10 atmospheres. It includes a pump and can be connected to up to four air tanks. It collapses down to a 40 cm cube.

Filter – Air: This can be fitted to breath masks and respirators to filter out impurities. Chemically based filters may be used for 1 day before requiring replacement. Nanotech filters may be used for 1 month before the nanites need reenergizing – multiply the listed cost by 20.

Filter – Liquid: This device can be fitted to canteens and the like to filter out impurities, kill microbes, and remove chemicals. Chemically based filters may be used to filter up to 100 liters before requiring replacement. Nanotech filters may be used to filter 1000 liters before the nanites need reenergizing - – multiply the listed cost by 10.

Firelighter: This device (about the size of a cigarette lighter) can light a fire in almost any conditions given sufficient oxygen.

Foodpack: Vacuum-sealed food container (packaged as 8cm cube) providing a full meal once water is added. Most can be eaten hot or cold.

Gill Pack: This is a 2cm diameter cylinder 12cm long with a mouthpiece situated halfway along the tube. The gill pack is a combined filter and electrolysis system, enabling the user to breathe air in water. It requires a Utility Power Minicell.

Ladder (collapsible): This 50 cm by 50 cm frame can be extended into a 10 meter ladder capable of supporting one person.

Microwave Oven: Miniature microwave oven (30cm x 30cm x 30 cm), suitable for field use.

Piton Gun: Can fire a climbing piton into solid rock (range 5 meters). Additional pitons can be purchased in sets of ten.

Portable Shower / Sanitation Unit: For those who believe that "roughing it" has its limits.

Purifier: This portable box uses nanites to recycle air, removing impurities and breaking down carbon dioxide. It can be attached to air tanks, multiplying their lifetime by twenty times. It uses a Utility Power Minicell.

Ration Tube: Plastic container (6 cm long cylinder with 3 cm diameter) providing highly concentrated (and virtually tasteless) food with sufficient nutrition for one full day.

Respirator: This breath mask includes an air compressor so that the wearer can use it in thin atmospheres (down to one quarter of the wearer's preferred atmospheric pressure).

Riding gear: Saddle and harness for draft animals. Each species of riding animal requires a different set of gear.

Rope: 50 meters of extremely lightweight synthetic rope (can support 10 tons).

Spade: Never underestimate the utility of a shovel.

Wet Suit: Full body suit for insulating divers underwater. Requires a breath mask and air tanks or a gill pack.

Table 8.1 Futuristic Melee Weapons					
Item	**Avail**	**Cost**	**Mass**	**Attack Size/Type**	**Fumble**
Stunclub	U	200	1	Medium Neuro	01-02
Neurowhip	R	200	1	Large Neuro	01-05
Vibroknife	U	100	0.5	Large Slash	01-02
Vibrosword	U	300	1	Huge Slash	01-03

Table 8.2 Futuristic Ranged Weapons - Part 1							
Item	**Avail**	**Cost**	**Mass**	**Attack Size/Type**	**Fumble**	**Burst Bonus**	**Recoil Penalty**
Assault Blaster	R	1200	4	Medium Blaster	01-02	35	0
Blaster Pistol	R	300	1.5	Small Blaster	01-02	25	0
Miniblaster	R	150	0.75	Tiny Blaster	01-02	None	N/A
Minilaser	U	100	0.5	Tiny Laser	01-02	None	N/A
Laser Pistol	U	200	1	Small Laser	01-02	15	0
Hunting Blaster	R	900	3	Medium Blaster	01-02	None	N/A
Hunting Laser	U	600	3	Medium Laser	01-02	None	N/A
Assault Laser	R	900	4	Medium Laser	01-02	25	0
Grenade Launcher	R	300	3	Varies	01-04	None	N/A
Grenade Launcher Attachment	R	300	2	Varies	01-04	None	N/A
SAM Missile Launcher	R	1000	5	Tiny Warhead	01-05	None	N/A
Tankbuster Missile Launcher	R	1000	10	Tiny Warhead	01-05	None	N/A
Holdout Gun	U	50	0.25	Tiny Ballistic	01-03	None	N/A
Pistol	U	100	0.5	Small Ballistic	01-03	20	10
Pistol (recoilless)	U	150	0.5	Small Ballistic	01-03	10	0
Revolver	U	50	0.5	Small Ballistic	01-03	None	N/A
Hunting Rifle	U	300	3	Medium Ballistic	01-03	None	N/A
Assault Rifle	R	300	4	Medium Ballistic	01-03	30	15
Assault Rifle (recoilless)	R	400	4	Medium Ballistic	01-03	20	0
Submachine Gun	R	500	5	Medium Ballistic	01-03	30	15
Machine Gun – heavy	R	1250	40	Huge Ballistic	01-05	60	60
Machine Gun – light	R	750	10	Large Ballistic	01-05	40	20
Machine Gun - medium	R	1000	20	Large Ballistic	01-05	50	40
Shotgun	U	150	4	Medium Shrapnel	01-04	None	N/A
Autoshotgun	R	450	5	Large Shrapnel	01-04	30	15
Sonic Stunner	U	200	0.5	Small Neuro	01-02	10	0
Sonic Stunrifle	U	600	2	Medium Neuro	01-02	15	0
Needle Pistol	U	250	0.5	Tiny Puncture	01-02	20	5
Needle Rifle	U	750	2.5	Small Puncture	01-02	30	10
Electrostunner	U	300	0.5	Small Neuro	01-02	10	0
Electrorifle	U	900	2.5	Medium Neuro	01-02	20	0
Laser Dazzler	U	250	1	Small Neuro	01-02	None	N/A
Flame Pistol	R	400	1	Small Plasma	01-04	None	N/A
Flame Rifle	R	1200	5	Medium Plasma	01-04	None	N/A
Flame Repeater	R	2400	10	Large Plasma	01-04	25	15
Pacifier Pistol	U	150	0.5	N/A	01-04	None	N/A

*"Recoil" penalty for Support Blasters and Lasers is due to their sheer bulkiness.

Table 8.2 Futuristic Ranged Weapons - Part 2

Item	Avail	Cost	Mass	Attack Size/Type	Fumble	Burst Bonus	Recoil Penalty
Support Blaster – heavy	R	3000	60	Huge Blaster	01-04	60	60*
Support Blaster – light	R	1800	15	Large Blaster	01-04	40	20*
Support Blaster – medium	R	2400	30	Large Blaster	01-04	50	40*
Support Laser – heavy	R	2500	40	Huge Laser	01-04	50	40*
Support Laser – light	R	1500	10	Large Laser	01-04	30	20*
Support Laser – medium	R	2000	20	Large Laser	01-04	40	30*
Concussion Grenade (Mark I)	R	20	0.1	Tiny Impact	01-05	None	N/A
Concussion Grenade (Mark II)	R	40	0.1	Small Impact	01-05	None	N/A
Concussion Grenade (Mark III)	R	60	0.1	Medium Impact	01-05	None	N/A
Concussion Grenade (Mark IV)	R	80	0.1	Large Impact	01-05	None	N/A
Concussion Grenade (Mark V)	R	100	0.1	Huge Impact	01-05	None	N/A
Fragmentation Grenade (Mark I)	R	20	0.1	Tiny Shrapnel	01-05	None	N/A
Fragmentation Grenade (Mark II)	R	40	0.1	Small Shrapnel	01-05	None	N/A
Fragmentation Grenade (Mark III)	R	60	0.1	Medium Shrapnel	01-05	None	N/A
Fragmentation Grenade (Mark IV)	R	80	0.1	Large Shrapnel	01-05	None	N/A
Fragmentation Grenade (Mark V)	R	100	0.1	Huge Shrapnel	01-05	None	N/A
Gas Grenade (Mark I)	R	25	0.1	Tiny Impact	01-05	None	N/A
Gas Grenade (Mark II)	R	50	0.1	Tiny Impact	01-05	None	N/A
Gas Grenade (Mark III)	R	75	0.1	Tiny Impact	01-05	None	N/A
Gas Grenade (Mark IV)	R	100	0.1	Tiny Impact	01-05	None	N/A
Gas Grenade (Mark V)	R	125	0.1	Tiny Impact	01-05	None	N/A
Incendiary Grenade (Mark I)	R	20	0.1	Tiny Heat	01-05	None	N/A
Incendiary Grenade (Mark II)	R	40	0.1	Small Heat	01-05	None	N/A
Incendiary Grenade (Mark III)	R	60	0.1	Medium Heat	01-05	None	N/A
Incendiary Grenade (Mark IV)	R	80	0.1	Large Heat	01-05	None	N/A
Incendiary Grenade (Mark V)	R	100	0.1	Huge Heat	01-05	None	N/A
Pulse Grenade (Mark I)	R	50	0.2	Tiny Impact	01-05	None	N/A
Pulse Grenade (Mark II)	R	100	0.2	Tiny Impact	01-05	None	N/A
Pulse Grenade (Mark III)	R	150	0.2	Tiny Impact	01-05	None	N/A
Pulse Grenade (Mark IV)	R	200	0.2	Tiny Impact	01-05	None	N/A
Pulse Grenade (Mark V)	R	250	0.2	Tiny Impact	01-05	None	N/A
Smoke Grenade (Mark I)	R	5	0.1	Tiny Impact	01-05	None	N/A
Smoke Grenade (Mark II)	R	10	0.1	Tiny Impact	01-05	None	N/A
Smoke Grenade (Mark III)	R	15	0.1	Tiny Impact	01-05	None	N/A
Smoke Grenade (Mark IV)	R	20	0.1	Tiny Impact	01-05	None	N/A
Smoke Grenade (Mark V)	R	25	0.1	Tiny Impact	01-05	None	N/A

*"Recoil" penalty for Support Blasters and Lasers is due to their sheer bulkiness.

Table 8.3 Grenades

Grenade	Primary Blast		Secondary Blast		Effects
	Radius	Bonus	Radius	Bonus	
Concussion Grenade (Mark I)	2m	50	3m	25	Tiny Impact
Concussion Grenade (Mark II)	4m	50	6m	25	Small Impact
Concussion Grenade (Mark III)	6m	50	9m	25	Medium Impact
Concussion Grenade (Mark IV)	8m	50	12m	25	Large Impact
Concussion Grenade (Mark V)	10m	50	15m	25	Huge Impact
Fragmentation Grenade (Mark I)	2m	75	3m	50	Tiny Shrapnel
Fragmentation Grenade (Mark II)	4m	75	6m	50	Small Shrapnel
Fragmentation Grenade (Mark III)	6m	75	9m	50	Medium Shrapnel
Fragmentation Grenade (Mark IV)	8m	75	12m	50	Large Shrapnel
Fragmentation Grenade (Mark V)	10m	75	15m	50	Huge Shrapnel
Gas Grenade (Mark I)	2m	25	N/A	N/A	Tiny Impact within 3m, variable effect from gas
Gas Grenade (Mark II)	4m	25	N/A	N/A	Tiny Impact within 3m, variable effect from gas
Gas Grenade (Mark III)	6m	25	N/A	N/A	Tiny Impact within 3m, variable effect from gas
Gas Grenade (Mark IV)	8m	25	N/A	N/A	Tiny Impact within 3m, variable effect from gas
Gas Grenade (Mark V)	10m	25	N/A	N/A	Tiny Impact within 3m, variable effect from gas
Incendiary Grenade (Mark I)	2m	75	3m	50	Tiny Heat
Incendiary Grenade (Mark II)	4m	75	6m	50	Small Heat
Incendiary Grenade (Mark III)	6m	75	9m	50	Medium Heat
Incendiary Grenade (Mark IV)	8m	75	12m	50	Large Heat
Incendiary Grenade (Mark V)	10m	75	15m	50	Huge Heat
Pulse Grenade (Mark I)	2m	+25 (CRR 75)	3m	N/A (CRR 50)	Tiny Impact within 3m, Electronic CRR
Pulse Grenade (Mark II)	4m	+25 (CRR 100)	6m	N/A (CRR 75)	Tiny Impact within 3m, Electronic CRR
Pulse Grenade (Mark III)	6m	+25 (CRR 125)	9m	N/A (CRR 100)	Tiny Impact within 3m, Electronic CRR
Pulse Grenade (Mark IV)	8m	+25 (CRR 150)	12m	N/A (CRR 125)	Tiny Impact within 3m, Electronic CRR
Pulse Grenade (Mark V)	10m	+25 (CRR 175)	15m	N/A (CRR 150)	Tiny Impact within 3m, Electronic CRR
Smoke Grenade (Mark I)	2m	+25	N/A	N/A	Tiny Impact within 3m, -50 to Perception & Hard Cover vs lasers
Smoke Grenade (Mark II)	4m	+25	N/A	N/A	Tiny Impact within 3m, -50 to Perception & Hard Cover vs lasers
Smoke Grenade (Mark III)	6m	+25	N/A	N/A	Tiny Impact within 3m, -50 to Perception & Hard Cover vs lasers
Smoke Grenade (Mark IV)	8m	+25	N/A	N/A	Tiny Impact within 3m, -50 to Perception & Hard Cover vs lasers
Smoke Grenade (Mark V)	10m	+25	N/A	N/A	Tiny Impact within 3m, -50 to Perception & Hard Cover vs lasers
Miniblaster	2m	+25	3m	+10	Tiny Blaster
Blaster Pistol	4m	+50	6m	+25	Small Blaster
Hunting Blaster	6m	+50	9m	+25	Medium Blaster
Assault Blaster	6m	+50	9m	+25	Medium Blaster
Light Support Blaster	8m	+75	12m	+25	Large Blaster
Medium Support Blaster	8m	+100	12m	+50	Large Blaster
Heavy Support Blaster	10m	+100	15m	+50	Huge Blaster

Table 8.4 Futuristic Armor

Armor	Avail	Cost	Mass	DB
Ballistic Armor	U	250	3	30
Reinforced Ballistic Armor	U	500	5	45
Light Body Armor	R	1000	8	60
Heavy Body Armor	R	1500	10	75
Combat Armor	R	2000	15	90
Chameleon Suit	R	3000	4	20
Desert Suit	U	500	3	5
Environment Suit	U	700	4	5
Hazmat Suit	U	500	4	5
Space Suit	U	1000	5	10
Multi-Environment Suit	U	1500	8	15
Minor Kinetic	U	200	0.5	+20*
Lesser Kinetic	R	400	1	+40*
Greater Kinetic	R	600	1.5	+60*
Light Ablative	U	100	1	+20**
Medium Ablative	R	200	1.5	+40**
Heavy Ablative	R	300	2	+60**
Sonic Neutralizer	R	100	0.5	Special
Dazzle Neutralizer	R	200	0.5	Special

* Kinetic Enhancement' s DB is only applicable versus Projectile attacks
** Ablative Enhancement' s DB is only applicable versus Energy attacks

Table 8.5 Futuristic Part Armor

Armor	Avail	Cost	Mass	DB
Ballistic Armor Helmet	U	25	0.25	3
Ballistic Armor Vest	U	100	1.5	9
Reinforced Ballistic Armor Helmet	U	50	0.5	4
Reinforced Ballistic Armor Vest	U	200	2.5	13
Light Body Armor Helmet	R	100	1	6
Light Body Armor Vest	R	400	4	18
Heavy Body Armor Helmet	R	150	1.5	7
Heavy Body Armor Vest	R	600	5	22
Combat Armor Helmet	R	200	2	9
Combat Armor Vest	R	800	7.5	27
Minor Kinetic Helmet	U	20	0.05	+2*
Lesser Kinetic Helmet	R	40	0.1	+4*
Greater Kinetic Helmet	R	60	0.15	+6*
Minor Kinetic Vest	U	60	0.25	+6*
Lesser Kinetic Vest	R	120	0.5	+12*
Greater Kinetic Vest	R	180	0.75	+18*
Light Ablative Helmet	U	10	0.1	+2**
Medium Ablative Helmet	R	20	0.15	+4**
Heavy Ablative Helmet	R	30	0.2	+6**
Light Ablative Vest	U	30	0.5	+6**
Medium Ablative Vest	R	60	0.75	+12**
Heavy Ablative Vest	R	90	1	+18**

* Kinetic Enhancement' s DB is only applicable versus Projectile attacks
** Ablative Enhancement' s DB is only applicable versus Energy attacks

Table 8.6 Futuristic Shields

Item	Avail	Cost	Mass	DB (Untrained/Trained)
Blast Shield	R	250	9 kg	0.5
Riot Shield	R	200	5 kg	0.5
Ablative Add-on **	R	40	+2 kg	1
Kinetic Add-on *	R	80	+1 kg	1

* Kinetic Enhancement' s DB is only applicable versus Projectile attacks
** Ablative Enhancement' s DB is only applicable versus Energy attacks

Table 8.7 Energy Cells and Ammunition

Item	Avail	Cost	Mass
Assault Rifle Ammunition	R	20	1
Holdout Ammunition	U	10	0.25
Hunting Rifle Ammunition	U	20	0.75
Machine Gun Ammunition	R	300	10
Pistol Ammunition	U	10	0.5
Revolver Ammunition	U	10	0.5
Shotgun Ammunition	U	20	1
Submachine Gun Ammunition	R	25	1
Armor Piercing Ammunition	R	x2	x1
Hollowpoint Ammunition	R	x2	x1
Payload Ammunition	U	x3	x1
Tracer Ammunition	R	x2	x1
Flechettes (toxic)	R	500	0.1
Flechettes (tranquilizer)	U	50	0.1
Pacifier Spray (toxic)	R	500	0.1
Pacifier Spray (tranquilizer)	U	50	0.1
Blaster Powerpack (Large)	R	500	2
Blaster Powerpack (Medium)	R	150	0.6
Blaster Powerpack (Small)	R	75	0.3
Plasmapack (Medium)	R	150	1.2
Plasmapack (Small)	R	75	0.5
Deuterium canister	R	1000	20
Microfusion generator	R	100000	1000
Utility Power Cell	U	20	0.1
Utility Power Minicell	U	10	0.02
Vehicle Power Pack	U	500	50
Weapon Power Cell	U	30	0.2
Weapon Power Minicell	U	15	0.05

Table 8.8 Weapon Accessories

Item	Avail	Cost	Mass
Flash Suppressor	R	100	0.2
Holographic Sight	R	100	0.2
Laser Sight	U	75	0.2
Silencer	R	75	0.3
Weapon Bipod	U	50	1
Weapon Holster	U	25	0.2
Weapon Scope	R	100	0.25
Weapon Tripod	U	75	2

Table 8. 9 Archaic Weapons					
Weapon	**Avail**	**Cost**	**Mass**	**Attack Size/Type**	**Fumble**
Battle Axe	U	130	2-3 kg	Large Slash	01-04
Broadsword	U	100	1-2 kg	Medium Slash	01-03
Club	U	10	1-2 kg	Medium Crush	01-02
Composite Bow	U	170	1-1.5 kg	Medium Puncture	01-03
Dagger	U	30	0.25 kg	Small Slash	01-02
Darts	U	10	0.2-0.5 kg	Tiny Puncture	01-03
Foil	U	210	1-1.5 kg	Small Puncture	01-03
Hand axe	U	50	0.5-1.5 kg	Small Slash	01-02
Harpoon	U	25	2-4 kg	Large Puncture	01-04
Heavy Crossbow	U	250	3-5 kg	Large Puncture	01-02
Javelin	U	30	1.5-2 kg	Medium Puncture	01-04
Katana	U	230	2-3 kg	(1h) Medium Slash	01-03
				(2h) Large Slash	01-04
Light Crossbow	U	110	1.5-3 kg	Small Puncture	01-02
Long Bow	U	100	1-1.5 kg	Medium Puncture	01-03
Nunchaku	U	4	0.5-1 kg	(1h) Medium Crush	01-05
				(2h) Large Crush	01-06
Pick	U	40	1.5-2.5 kg	Large Puncture	01-03
Quarterstaff	U	5	1-2 kg	Large Crush	01-04
Rapier	U	220	1-1.5 kg	Medium Puncture	01-03
Saber	U	90	1-2 kg	Medium Slash	01-03
Scimitar	U	100	1-2 kg	Medium Slash	01-03
Short Bow	U	60	1-1.5 kg	Small Puncture	01-03
Shuriken	U	40	0.1-0.2 kg	Tiny Puncture	01-03
Sling	U	9	0.5 kg	Small Crush	01-04
Spear	U	23	1-2 kg	Large Puncture	01-04

Table 8.10 Archaic Weapon Accessories				
Item	**Avail**	**Cost**	**Mass**	**Notes**
Arrows (20)	U	4	2 kg	Includes quiver
Crossbow Bolts (20	U	11	2 kg	Includes case
Weapon scabbard (belt)	U	25	0.5 kg	
Weapon scabbard (shoulder)	U	30	0.75 kg	

Table 8.11 Computers, Communications, and Scanners							
Item	**Avail**	**Cost**	**Mass**	**Item**	**Avail**	**Cost**	**Mass**
Audiovisual Recorder	U	100	0.25	Palm Print Analyzer	R	250	0.5
Bioscience Scanner	U	400	0.5	Personal Communicator	U	50	0.1
Cashcard Scanner	R	100	0.5	Poison Sniffer	U	350	0.5
Chemanalyzer	U	400	0.5	Radiation Detector	U	225	0.5
Computer – Handheld	U	100	0.5	Radio Communicator	U	200	1
Computer – Personal	U	1000	2	Removable Storage Disk	U	5	0.05
Computer - Mainframe	U	20000	1000	Retinal Scanner	R	275	0.5
DNA Scanner	R	300	0.5	Satellite Comunicator	U	500	1
Electronic Cashcard	U	10	0.05	Satellite Navigator	U	100	0.2
Headset Communicator	U	25	0.05	Sensable Projector	U	300	4
Heads Up Display	U	75	0.1	Sensable Recorder	U	500	6
Holocamera	U	200	1	Tactical Scanner	R	400	0.5
Holoprojector	U	150	3	Techscanner	U	500	0.5
Mini-microscope	U	2000	10				

Table 8.12 Food and Lodging			
Item	**Avail**	**Cost**	**Notes**
Poor Lodging	U	25	Cheap room in a spaceport motel
Average Lodging	U	50	Decent room in an average hotel
Good Lodging	U	100	Good room in a first-class hotel
Alcoholic Beverage	U	2	A third to half a liter.
Nonalcoholic Beverage	U	1	A liter
Snack	U	1	Food on the go.
Light Meal	U	5	A one-course meal
Medium Meal	U	10	Main course with a starter or dessert
Heavy Meal	U	20	Three-course meal

Table 8.13 Medical Gear			
Item	**Avail**	**Cost**	**Mass**
Arterial Fixer	R	6000	100
Blood Mill	R	2000	50
Catalysis Bandage (anesthetic)	U	100	0.5
Catalysis Bandage (coagulant)	U	150	0.5
Catalysis Bandage (skin regen)	U	200	0.5
Cryogenic Tank	R	20000	2000
Decontamination Spray	R	200	1
Dermal Regenerator	R	4000	100
Hypodermic Spray	U	100	0.25
Instant Cast	U	50	1
Instant Splint	U	40	1
Laser Scalpel	U	200	1
Life Support Unit	R	5000	20
Medical Scanner	R	1000	2
Medical Supplies (biochemicals)	R	1000	50
Medical Supplies (nanites)	R	1000	1
Regeneration Tank	R	30000	2000
Scannerbed	R	15000	1000
Skeletal Healer	R	12000	250
Suture Pen	U	600	0.5
Tissue Healer	R	8000	200

Table 8.14 Medicines

Medicine	Avail	Prep	Cost	Effect
Acheblock	U	Ingest	5	Alleviates headaches, toothache, etc for one day.
Anesthetic	R	Inject	20	General anesthetic. Stamina RR (200) or unconscious for six hours.
Antibiotic	R	Ingest	100	Specific bacterial counteragent. Eliminates targeted bacterium from one patient within 10 minutes
Antirad	R	Inject	250	Compound protects against radiation damage and poisoning for one day. Antirad lowers the severity of radiation damage by one step (Large Radiation critical becomes Medium, etc. with Tiny having no effect.). If injected within 1 minute after exposure, can prevent long-term damage.
Antirad Ultra	R	Inject	500	Compound protects against radiation damage and poisoning for one day. Antirad lowers the severity of radiation damage by two steps (Large Radiation critical becomes Small, etc. with Small and Tiny having no effect.). If injected within 1 minute after exposure, can prevent long-term damage.
Antitox	R	Inject	500	Universal antidote vs all nerve poisons. One dose protects for 1 day if given in advance, or can be used to neutralize poison after the event.
Antiviral	R	Ingest	250	Specific viral counteragent. Eliminates target virus from one patient within 10 minutes.
Bactopurge	R	Inject	100	Broad-spectrum antibiotic. Gives +50 to RRs versus bacterial infections for one day, and second RR with bonus if already infected.
Boneheal	U	Ingest	100	Halve recovery time from fractures and other bone damage. One dose per day.
Burnheal	U	Apply	50	Halves recovery time from burns. One dose per day.
Cardiatine	U	Ingest	100	Protects cardiovascular system from high-gravity damage for one day.
Contrazeegee	U	Ingest	100	Protects body from adverse effects of low- and micro-gravity for one day.
Defoliatine	U	Apply	10	Prevents hair growth for 1 month when applied to skin.
Detoxin	R	Inject	200	Poison-specific antidote. One dose protects for 1 day if given in advance, or can be used to neutralize poison after the event.
Faststim	R	Inject	125	Adrenalin surge cures 10 rounds of stun. Only 1 dose per minute will be effective.
Frostheal	U	Apply	50	Halves recovery time from frostbite. One dose per day.
Hyperspeed	R	Inhale	400	Adds +10 to Initiative for one minute. Only one dose per hour will be effective.
Nullconcept	U	Ingest	20	100% effective male and female contraceptive. Lasts one month.
Painblock	R	Ingest	40	Blocks severe pain for one hour – patient can reduce maneuver penalties by up to 10 points for duration
Refoliatine	U	Apply	50	Stimulates hair growth over 1 week period when applied to skin.
Regenerant	R	Ingest	75	Restores 10 concussion hits in one minute. Only 1 dose per hour will be effective.
Repressurine	R	Inject	200	Cures the bends by causing blood to reabsorb nitrogen molecules (assuming sufficient air pressure). Any bleeding in next hour will be doubled.
Safesleep	U	Ingest	5	Stamina RR (100) or fall asleep within 5 rounds. May be awakened normally.
Safewake	U	Inhale	5	Brings patient to consciousness within 5 rounds.
Spraincure	R	Inject	200	Cures a sprain within 1 day.
Stayawake	U	Ingest	10	Reduces fatigue poisons guaranteeing wakefulness for one hour. Additional doses will maintain effect but will require a Stamina RR (50 + 25 x doses) to resist falling asleep immediately after effect ends.
Stimrelease	R	Ingest	1000	Any stun results are reduced by 5 rounds for one hour. Only one dose per day will be effective.
Sunshield	U	Ingest	10	Protects from harmful ultraviolet radiation for one day
Ultracoag	R	Apply	100	Stops up to 5 hits per round of bleeding in 3 rounds. If used more than once per day, patient must make a Stamina RR (50 + 25 x extra uses) or suffer a heart attack.
Ultrasense	R	Inhale	350	Increases sensitivity to sensory stimuli for one minute, adding +10 to Perception. Only one dose per hour will be effective.
Undisease	R	Inject	1000	Genetically engineered virus to cure a targeted genetic disease. Requires 1 day to achieve cure
Viralpurge	R	Inject	300	Broad-spectrum antiviral. Gives +50 to RRs versus viral infections for one day, and second RR with bonus if already infected.

Table 8.15 Drugs and Toxins

Drug/Toxin	Avail	Prep	Cost	Effect
Agonilin	R	Inject/Ingest	50	Toxin delivers 1-100 hits. PB (+10)
Babeljuice	R	Inject	200	Victim suffers paralysis (after ten rounds) and becomes incapable of lying for ten minutes before both effects wear off. RR (100).
Bloodfire	R	Inject	100	This drug triggers feelings of extreme rage lasting d10 minutes. RR (120). Addictive, PB (+20)
Coronalin	R	Inject/ Ingest	100	Toxin causes heart attack in one minute. PB (+20)
Dormilene	R	Inject/Inhale	30	RR (120) or fall asleep for ten minutes (cannot be awakened normally)
Hypertrip	R	Inject/Ingest	200	This hallucinogenic takes effect one minute after it is imbibed. Effects last one hour. RR (150). Highly addictive PB (+50)
Malinternis	R	Inject/Ingest	200	Toxin causes internal organ damage. **CRR (140):** No Effect **CRR (120):** 1d100-20 on IPCT **CRR (100):** 1d100 on IPCT **Failure:** 1d100+20 on IPCT
Melankol	R	Inject/Ingest	100	This drug is deceptively dangerous. It triggers a bout of pathological depression lasting one hour. **CRR (120):** No effect **CRR (100):** Victim is depressed. **CRR (80):** Victim may attempt self-harm **Failure:** Victim may attempt suicide
Paradisium	R	Inject/Ingest	200	This drug induces a state of complete euphoria and removes all inhibitions for one hour. RR (100). Highly addictive PB (+50).
Placidin	R	Inject	100	One round after injection, victim is paralyzed for one hour. RR (130)
Psibooster	R	Inject	250	This drug gives a +10 boost to all Psi Discipline maneuvers for ten minutes. Side-effect is that user may fall asleep for one hour (cannot be awakened normally) if RR (100) is failed.
Psidrain	R	Inject	1000	This drug drains a psionic character of all Psi Energy Points for one day. RR (100)
Psifuzz	R	Inject/Ingest	200	This poison impairs the activation of Psi Disciplines, imposing a –20 penalty for one hour. RR (80)
Synamort	R	Any	250	Deadly nerve toxin. Causes paralysis in five rounds, death in ten rounds. RR (100). Stronger versions exist – but cost 50 sols per increase of 10 on RR target.
Zombi	R	Inject	200	Suppresses victim' s will and higher intelligence for one hour. Victim will follow any simple instructions during this period. RR (90).

IPCT = Internal Poison Critical Table

Table 8.16 Personal Gear

Item	Avail	Cost	Mass
Adhesive Spray (semipermanent)	U	50	0.2
Adhesive Spray (temporary)	U	10	0.1
Chronometer	U	100	0.1
Clothing - business	U	200	Varies
Clothing – dress	U	400	Varies
Clothing – leisure	U	50	Varies
Clothing - uniform	U	100	Varies
Fire Extinguisher	U	50	1
Flashlight	U	20	0.5
Footwear - business	U	50	Varies
Footwear – dress	U	80	Varies
Footwear – leisure	U	30	Varies
Footwear - uniform	U	50	Varies
Laser Torch	U	500	5
Lenses – Anti-Glare	U	100	0.05
Lenses – Infrared	U	150	0.05
Lenses – LowLight	U	150	0.05
Lenses - Multifunction	U	1200	0.1
Lenses - Telescopic	U	200	0.05
Magnetic Boots	U	200	1
Notepad	U	5	0.25
Pen	U	1	0.05
Personal Kit	U	50	1
Suitcase	U	40	2
Toolkit	U	250	3
Utility Belt	U	20	0.5

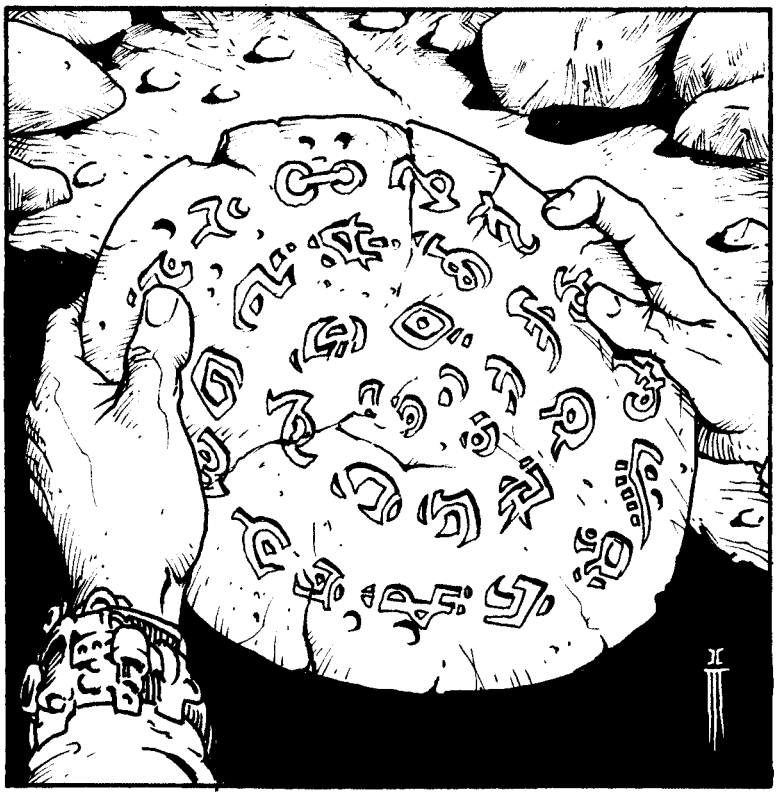
Table 8.17 Stealth and Counter Stealth Gear

Item	Avail	Cost	Mass
Contact Microphones	R	500	0.1
Disguise Kit	R	500	4
Electronic Bypass Kit	R	1000	2
Electronic Countermeasures Kit	R	700	3
Electronic Surveillance Device	R	400	0.01
Electronic Surveillance Detector	R	600	0.1
Electronic Surveillance Neutralizer	R	650	0.2
Electronic Tracker	R	100	0.01
Explosive Detonator	R	100	0.05
Forensic Kit	R	1000	4
Laser Listener	R	900	4
Lock Pick Set	R	200	0.5
Plastic Explosive	R	500	1
Vibration Countermeasure	R	250	0.25

Table 8.18 Survival Gear

Item	Avail	Cost	Mass
Air Mattress	U	50	2
Air Tank	U	180	Varies
All-weather Bag	U	40	1
All-weather Tent	U	200	4
Backpack	U	50	1
Breath Mask	U	50	0.5
Camouflage Netting	R	50	0.5
Collapsible Furniture	U	50	1
Compass - Inertial	U	150	0.5
Compass - Magnetic	U	10	0.5
Coolpack	U	40	2
Environment Tent	U	1000	8
Filter - Air	U	300	0.5
Filter - Liquid	U	250	0.5
Firelighter	U	5	0.05
Foodpack	U	5	0.25
Gill Pack	U	400	2
Ladder (collapsible)	U	40	2
Microwave Oven	U	100	4
Piton Gun	U	140	1
Portable Shower/Sanitation Unit	U	200	5
Purifier	U	1500	2
Rations	U	10	0.1
Respirator	U	300	1.5
Riding gear	U	150	1
Rope	U	45	1
Spade	U	5	1
Wet Suit	U	50	5

Adventuring



Your character has loaded his weapons, checked his spacesuit, and packed his traveling bag. It is time to head to the starport and catch the next ship heading off-planet. A life of adventure among the stars beckons. Will you find fame and fortune, discover new civilizations, or defend your world from alien invaders?

So how does your character actually "do" anything in **HARP**, from finding the ruins of an extinct civilization, to hacking a corporate mainframe, piloting a starship, or shooting a Silth trooper? Your character's skills are central to determining what your character can do, but they are not all of your character's abilities. Unless you've created a truly unusual character, the **HARP** rules assume that all characters have mastered certain basic skills, such as walking, talking, ordering a meal in a restaurant, and haggling over spare parts with a stingy merchant. The examples are only a few of the basics any character would need to function in society. Your character can even attempt actions in **HARP** requiring skills that he hasn't learned. For example, he could try to land a gravplane even though he does not have the Air Pilot skill, and with a lot of luck bring it down safely.

Skill checks in **HARP** are simple: a player rolls the dice as a Maneuver Roll. The result is compared to the difficulty of the task. This does not mean that you are required to roll every time you take an action, or even every time you want to use a skill.

For instance, if your character is calling his sentry robot, he does not have to make a Maneuver Roll to yell "Robbie, I need you" (The SysOp may roll, however, to see if Robbie hears and obeys.) If Robbie doesn't heed your call, but left a clear set of impressions in the mud for your character to follow, you could use your Tracking skill to pursue the absent robot without requiring a roll of the dice.

Simply put, dice should only be rolled when in dramatic, adventurous situations. For instance, when failure could result in injury or death, arrest, discovery, or have a significant effect on game events, dice should be rolled.

Examples of actions that require Maneuver Rolls:

- Climbing up a ladder while being blasted by laser bolts.
- Clinging onto the underside of a windowsill while curious guards peer out above you.
- Trying to avoid being sucked out into vacuum when the starship's hull has been breached.
- Restarting your aircar's engine when it cuts out 5,000 meters up.

- Performing a database search to identify whether the alien parasite that has latched onto your leg is a deadly threat or just being friendly.
- Convincing a patrol of Federation Marines that these are not the robots they are looking for.
- Performing a sensor analysis of the atmosphere of a newly discovered planet to determine if there are any toxic trace gases present.

Maneuver: Any time a PC takes an action that involves a risk, requires concentration, or grace under pressure, it is considered a maneuver and thus requires a Maneuver Roll.

A Maneuver Roll is an open-ended percentile roll made to determine the success or failure of an action. The result of the dice roll is then added to the total skill bonus (adding or subtracting any situational modifiers) to determine the total skill roll. The final result is checked on the appropriate column on the Maneuver Table, which will then determine if the action attempted was successful or not. Any final results of 101 or greater usually indicate complete success.

Example: *While trying to escape from an Interstellar Metals facility, Hamilton, a Spy, took a wrong turning, finding himself in a sealed chamber. To make matters worse, a malodorous green gas is being injected into the room through the ventilation system. Fortunately Hamilton has 12 ranks in Electronic Bypass, granting him a bonus of 54 to his maneuver roll. He has a stat bonus of +8 from his Insight stat and a +6 from his Reasoning stat, and is equipped with a set of high-quality (+10 design) electronic bypass kit. Hamilton's total bonus is 78 (54 + 8 + 6 +10) to releasing the door lock.*

The SysOp (smiling evilly) decides that the perilous situation calls for additional modifiers. After some quick thought, she takes the following into account:

*Interstellar Metals has not skimped on the quality of their security and the electronic lock is no exception, so bypassing it will be a Hard Maneuver for Hamilton, inflicting a -20 penalty to his roll.

*The green gas is entering the room rapidly and Hamilton is trying very hard not to inhale. Since this situation places significant pressure on Hamilton, the SysOp penalizes him with a -10 modifier.

With the situational modifiers in place, Hamilton receives a -30 (-20 + -10) to his roll, which is added to his total skill bonus of 78. Hamilton's final skill bonus is 48.

The SysOp decides that this is an "All or Nothing Maneuver"; Hamilton will either successfully bypass the security system or succumb to the gas! In game terms, Hamilton must make a Maneuver Roll that totals 101 or higher to succeed.

With dice in hand, David (Hamilton's player) holds his breath in sympathy with his character and rolls the dice, resulting in a 53! Adding that to his skill total of 48, he finishes with a 101, just hitting the target. The chamber opens suddenly and Hamilton staggers out in a green haze into the corridor and a waiting semicircle of armed corporate security guards.

Dice Rolling Conventions

Virtually all the game mechanics in **HARP** can be resolved with a roll of two simple ten-sided dice. Used together, the combination is usually referred to as a "percentile roll." This section details the specific dice rolling conventions and terms found throughout **HARP**.

Percentile Rolls

1-100 Roll (1d100) – Most of the die rolls in HARP are percentile rolls. To obtain a random result from 1-100, roll the two dice together, counting one die as the "tens" place and the other as the "ones" place. Make sure you designate before the roll! Results of 00 are counted as 100.

Example: *A player makes a 1-100 roll. The die designated as the "ten" reveals a 4 while the "ones" die is a 2. The result of the die roll is a 42.*

In addition to the basic rule above, there is a special type of percentile roll that will come up during play: open-ended.

Open-Ended Roll – If the result of the percentile roll is 96-00, the dice are rolled again and the result is added to the first roll. If the second roll is 96-00, then a third roll is made and added, and so on until the dice roll is not 96-00. The sum of these rolls is the result of the high open-ended roll. Open-ended high rolls allow the chance of success for particularly spectacular feats!

Note: All attack and skill maneuver rolls made are open-ended.

Example: *Latham has taken cover in some jungle underbrush while awaiting an opportunity to launch a diversionary attack on a small Silth encampment. The SysOp asks Latham's player to make an open-ended Hiding skill maneuver. With dice in hand, Latham's player rolls a 98! She is allowed a second roll – which is a 72. The final result is a 170 before adding in Latham's skill! The Silth will have a hard time spotting Latham. The SysOp notes "It's green in here".*

Using an Untrained Skill

In the example above, Hamilton could have attempted to bypass the door lock even if he had had no ranks in the Electronic Bypass skill. He would simply have been penalized by an additional -25 to the Maneuver, the standard modifier for using an untrained skill.

SysOp's Option: Drunkard's Rule

In order to cut down on the amount of calculations made during the game, a SysOp may elect to round various numbers (skill bonuses, rolls, results, etc.) to the nearest value of 5 before adding or subtracting.

9.1 Maneuver Table

Total Roll	Maneuver Results		Spell/Psi Results	
	Percentage	Bonus	RR	Utility
(-51) Down	Fail	-70	Fail	Fail
(-50) – (-31)	Fail	-65	Fail	Fail
(-30) – (-10)	Fail	-60	Fail	Fail
(-10) – (-01)	Fail	-55	Fail	Fail
0 – 10	Fumble*	-50	Fumble*	Fumble*
11 – 20	10	-45	65	Fail
21 – 30	20	-40	70	Fail
31 – 40	30	-35	75	Fail
41 – 50	40	-30	80	Fail
51 – 60	50	-25	85	Fail
61 – 70	60	-20	90	Fail
71 – 80	70	-15	95	Normal
81 – 90	80	-10	100	Normal
91 – 100	90	-5	110	Normal
101 – 110	100	+5	120	Normal
111 –130	110	+10	130	Normal
131 – 150	120	+20	140	Normal
151 – 170	130	+30	160	Double
171 – 200	140	+40	180	Double
201 – 230	150	+50	200	Double x2
231 – 260	160	+60	220	Double x2
261 – 300	170	+70	240	Triple
301+	180	+80	260	Triple

Modifiers	
Mundane:	No roll required
Routine:	+60
Easy:	+40
Light:	+20
Medium:	+0
Hard:	-20
Very Hard:	-40
Extremely Hard:	-60
Sheer Folly:	-80
Absurd:	-100

* = Fumbles only occur on an unmodified roll of 01– 05 for everything except weapon use. Otherwise, treat the results as a normal failure.

Using The Maneuver Table

The Maneuver Table below is used to resolve the following in **HARP**:

- All Maneuver Rolls that are not All-or-Nothing.
- All Resistance Rolls including psionics, poison, and disease.
- Psionics.

Tip: Photocopy this table and keep it handy.

Since maneuvers cover a wide variety of game situations, **HARP** provides several ways in which players and SysOps can resolve their actions. Whichever method you choose, you will use the percentage column, the bonus column, or the RR column on the Maneuver Table.

All or Nothing Maneuvers

The most straightforward of the resolution methods, "All or Nothing Maneuvers" require an open-ended roll that is then modified by any bonuses received from skills, items, situational adjustments, or penalties inherent in the difficulty of the task. A character is successful with rolls totaling 101 or higher.

Examples of All or Nothing Maneuvers include picking a simple lock, leaping between roof tops, somersaulting onto the back of a Thalassan waverider, or applying a suture pen to close a bleeding wound.

SysOp's Choice: The Near Miss

Sometimes a character performing an All or Nothing maneuver may come close to succeeding, but not quite. In such cases, the SysOp has the option of allowing the character to make another try the next round, with a +20 bonus to his attempt. If used, this option only applies if the player's result misses succeeding by 10 points or less (i.e. a result of 91 or better).

Example: *David is having his character Hamilton attempt to pick the lock of his cell. His roll, plus modifiers gives a result of 98. Not enough to succeed. The SysOp (in a fit of unexpected generosity) rules that this is a Near Miss and that Hamilton may try again the following round with a +20 bonus.*

Stat-Based Maneuvers

Stat-Based Maneuvers are "All or Nothing Maneuvers" that are modified by a specific stat bonus. These rolls are always modified by the stat bonus times two. For example, an unfortunate explorer finds himself waist-deep in quick sand, sinking quickly. The GM asks the player to make a "Medium" Strength maneuver, having the player roll, adding the Strength stat bonus twice. A character is successful with rolls totaling 101 or higher.

Percentage Results

This method is best reserved for complex or particularly lengthy maneuvers. Accordingly, the values listed in the column are often used to determine the

percentage of activity accomplished rather than the success of the skill used. These values can also be used to determine other percentages, such as the price received (versus the actual value) when selling an item, or the percentage of a manufacturing task completed.

The player makes an open-ended percentile roll taking into account any possible modifiers. Consult the Percentage column of the table to determine the percentage (from none, to partial, to complete) of the action accomplished. For instance, a roll of 60 indicates the attempted maneuver is only 50% complete. If at any point a fumble or a failure is rolled, the entire process would have to be started from scratch.

Example 1*: The scramble alarm sounds in the mess hall. The cadets of Red and Blue Squadron must don their spacesuits and race to their starfighter bays. Whichever squadron is ready first will earn valuable shore leave points. Normally putting on a spacesuit and sprinting don't require any rolls, but the duration of their shore leave is at stake, so the SysOp decides to use the Percentage column of the maneuver table.*

In the first round, Seraph's player rolls a 53; comparing that result to the table, her player notes that she is 50% of the way there. A neighboring cadet has a result of 27; unfortunately for him, he is only 20% through the process of suiting up. The next round, quickness (and a little bit of luck) results in a 40 for Seraph's roll (another 30% complete); the other cadet only comes up with a 02, forcing him to start over as he becomes entangled in his suit. With 80% of her suiting complete, Seraph will soon be ready for a dash to the starfighter bays.

Example 2: *The explorer Jung tries to sell a Pavonian heavy crossbow, acquired after a violent encounter with the natives, to a merchant specializing in alien curios. The crossbow is worth 250 sols, but the collector is only prepared to offer a mere 100 sols. Jung's player decides to use Jung's Trading skill to get a better deal. The roll is 58, or 60% from the Percentage column. The businessman concedes that the crossbow is a fine example and makes a final offer of 60% of its value. Jung takes the 150 sols gladly.*

Example 3: *Dack's latest project is to repair a robot that he and his comrades liberated from suspected Builder ruins on the planet Methuselah. Dack spends perhaps an hour a day fiddling with the robot. The repair modifier is –100 (Absurd) as the robot's construction is wholly alien. Dack's total bonus (including skill, stat, and equipment bonuses) is 60. On the first day, Dack's player rolls a 53, for a final result of 13 (53 + 60 – 100). Dack's player notes that 10% of the work is complete. Dack may be busy for some time.*

SysOp's Choice: Beware the 66

The number 66 has special significance. It means that something unusual has happened to the character. This could be either good or bad, depending on whether the character succeeds or fails in the maneuver that he was trying to perform. The results of such an occurrence are left up to the SysOp to determine.

If a player should happen to roll an unmodified 66 on their dice, and if the maneuver that it is rolled for fails, then something bad has happened. Examples could include a groundcar stalling, or the character blowing the fuses in his electronic bypass kit. An Adept's eyes might become completely black or she might start hearing voices in her head for an hour or so. The results should be something irritating and annoying but nothing that is permanent or seriously debilitating.

If the player should happen to roll an unmodified 66 on their dice, and if the maneuver that it is rolled for succeeds, then they have succeeded in an unusual and possibly spectacular manner. Examples could include a database query revealing the existence of anti-hacking measures (without actually triggering them because the searcher has inadvertently found a back door into the system) or a dazzler beam reflecting off a mirror and then striking an opponent as intended. As above, the result should be something interesting, and of short term benefit, but not overly so.

Bonus Results

This method is primarily used to resolve Maneuvers that involve complementary skills (such as "Culture Lore" and "Disguise"). For these particular maneuvers, the player should make an open-ended roll, taking into account any modifiers. The result on the Bonus column is then used as a modifier to the primary maneuver.

Example: *Hamilton is preparing to disguise himself as a Belter in preparation for a dangerous mission on Ceres. Before applying the disguise, Hamilton reviews his knowledge of Belter culture. His player decides to use his modest Culture Lore (Belter) skill – a skill value of 22 and a roll of 63, his total is 85. Cross-indexing this result on the Bonus column, he sighs as he notes a penalty to the Disguise roll of –10. It seemed a good idea at the time.*

Fortunately for Hamilton, his comrade Seraph actually is a Belter, and her player decides to give Hamilton a few much-needed fashion tips.

The SysOp asks Seraph's player to make a Maneuver Roll to determine just how current she is with trends in Belter society. Seraph has a skill of 60. Seraph's player rolls a 68, resulting in a total of 128 (68 + 60). Checking the Bonus column of the maneuver table, Seraph's knowledge will give Hamilton a +10 bonus (counteracting his –10 penalty) to his Disguise maneuver.

Skill vs. Skill

Whenever skills are used in opposition to one another, the **HARP** mechanic that resolves the contest is called a Resistance Roll. For example, the combat style Disarm Foe focuses on the defender using his weapon skill as the bonus to resist being disarmed by an opponent. Other examples include the maneuver Stalk & Hide, which is almost always opposed by a Perception roll, and the use of driving and piloting skills to evade pursuit in a chase, where the drivers oppose each other's skills. Also, Duping and Interrogation are examples of skills that are opposed by Will-based Resistance Rolls.

Example: *Sergeant Latham has received the signal to attack the Silth outpost. She has already decided that she wants to seize the Silth's gravwalker for her getaway. Latham attempts to sneak into the camp. The SysOp requires Latham's player to make an open-ended percentile roll, adding Latham's Stalk & Hide skill bonus. Latham's total is 148, which is a result of 140 on the Resistance Roll column. The SysOp makes a series of opposing Perception rolls for the Silth guards and gets totals of 99, 125, and 146. One of the guards sees the flicker of movement and raises the alarm. Latham abandons stealth for speed, as she dives for the cover of the gravwalker, firing her weapon blindly as she somersaults to relative safety.*

Modifying Maneuver Rolls

Certain circumstances can affect either the simplicity or difficulty of a maneuver. An action, such as walking, is normally considered Routine. However, when the path suddenly becomes a four-inch wide walkway suspended at a great height, the maneuver suddenly becomes Extremely Hard. Such a maneuver could be made even more difficult when trying to maintain one's balance and ward off an enemy's attacks at the same time! Maneuver Rolls are only necessary when a character's success or failure will have an immediate impact on the situation. Routine and Mundane actions normally do not require rolls of any sort.

The following list offers a manner to gauge various difficulty levels. As mentioned above, certain circumstances can alter the normal difficulty rating. For instance, some skills are easier to accomplish if the character takes more time, or has high-quality equipment at their disposal. The SysOp always has the option to add positive modifiers to a Maneuver Roll should it be appropriate.

Mundane – This difficulty level is reserved for actions that do not require a roll. Normal conversation and walking are good examples.

Routine – An untrained individual could complete this maneuver, given time and a bit of luck.

Easy – A trainee could complete the maneuver with little difficulty.

Light – A trainee could complete the maneuver given ample time.

Medium – This level represents the average difficulty inherent in any situation. As such, many skill difficulties default to this level.

Hard – Skill difficulties at this level require a character with a level of expertise to accomplish these maneuvers.

Very Hard – Even an expert would require ample time to successfully complete these types of maneuvers.

Extremely Hard – Only an expert of unparalleled skill, or someone with incredible luck would be able to accomplish maneuvers of this difficulty.

Sheer Folly – Skills and maneuvers at this level teeter on the very edge of natural human capability. Refer to any book of world records for successful examples.

Absurd – Maneuvers of this difficulty are a step above the normal possibilities of most humans. Success while attempting a maneuver of this type denotes a character with extraordinary skill, ability and/or luck.

Resistance Rolls (RR)

The universe can be very hostile to fragile sentients. Poisons, diseases, psionic abilities, and (in some settings) spells of all kinds can slay or incapacitate characters swiftly and mercilessly. There are five different base types of Resistance Rolls, and these five types may use any one of three resolution methods. The five types of Resistance Rolls are as follows:

Electronic – This type of RR is used for electromagnetic pulses and radiation that can affect the circuitry and programming of AI, virtual and robotic characters and the cyberware of cyborg characters. It is only needed by these types of characters, not ordinary characters. When making this type of RR, the player adds in his character's skill bonus for Resistance: Electronic. More on electronics can be found in HARP SF Xtreme.

Stamina – This type of RR is used for things that affect the body or health of the character, usually poisons and diseases. When making this type of RR, the player adds in his character's skill bonus for Resistance: Stamina.

Will – This type of RR is used for things that affect the mind of the character, usually psionics with mental effects and influence spells. When making this type of RR, the player adds in his character's skill bonus for Resistance:Will.

Magic – This type of RR covers magical effects that do not fall cleanly into either the Stamina or Will type of RRs. When making this type of RR, the player adds in his character's skill bonus for Resistance: Magic.

Skill vs. Skill – This type of RR covers situations where one skill is opposed by the skill of another character. In such cases, the character performing a maneuver is considered to have the "attacking skill."

Resolution Methods

Resolving a Resistance Roll is a two step process. The first step is to determine the "target number." The second step is for the defending character to attempt to resist. The defender makes an open-ended percentile roll, adding the appropriate stat bonus plus any ranks in his or her resistance skill, for a total Resistance Roll. If the potential victim gets a total that is equal to or higher than the target number, the poison, disease, or spell is ineffective.

The three resolution methods mentioned above refer to the three possible methods that can be used to determine the "target number." They are as follows:

Variable – First, the attacking character, creature, poison, psionic ability, spell, disease, or item must make an open-ended percentile roll, taking into account any modifiers. Bonuses added to this roll will vary from effect to effect. To resist the effects, the target must meet or exceed the value (or "target number") found on the RR column of the maneuver table as the result of the attack roll. This is the most common, especially when

dealing with opposed skills, psionic abilities and spells.

Static – This is the easiest to determine as there is no roll to determine the target number. This resolution method uses the notation RR(xx) where the xx stands for the "target number" that the defender must meet or beat.

Cascading – This type of RR is used mostly for poisons. It gives a number of static levels that can be resisted. The lower the defender's roll, the more severe the effects received from the attacker. For complete details on how Cascading Resistance Rolls work, see the section on Diseases and Poisons later in this chapter.

Fumbles

Three of the four columns of the Maneuver Table have results that indicate a fumble. A fumble is the result of an extremely unlucky occurrence that prevents a character from accomplishing the performed maneuver. With the exception of attacks with a weapon, fumbles occur on unmodified die rolls between 01 and 05. As for weapon attacks, each weapon has its own fumble range.

Should a roll's result indicate a fumble (whether skill, maneuver, psionic ability or attack), a non-open-ended roll on the Fumble Table is required. There are thirteen types of fumbles:

Combat (Melee): Use these rows to resolve all fumbles as a result of melee combat and archaic ranged combat.

Combat (Ranged): Use these rows to resolve all fumbles as a result of ranged combat using personal weapons.

Combat (Vehicle): Use these rows to resolve all fumbles as a result of vehicle combat.

Computer: Use these rows to resolve all fumbles relating to computer skills.

Engineering: Use these rows to resolve all fumbles made while attempting engineering skills.

Influence: Use these rows to resolve all fumbles involving influence and artistic skills, including musical and other performance feats.

Mental: Use these rows to resolve all fumbles involving knowledge or scientific skills.

Moving: Use these rows to resolve all fumbles involving climbing, swimming, riding or other active skills.

Physical: Use these rows to resolve all fumbles involving physical actions that do not require strenuous movement (such as Electronic Bypass, Locks & Traps, Machine Operation or Craft skills).

Psionic: Use these rows to resolve all fumbles made while activating psionic abilities.

Vehicle (Air/Space): Use these rows to resolve all fumbles made while attempting piloting maneuvers in atmosphere or space.

Vehicle (Hyperspace): Use these rows to resolve all fumbles made while attempting to enter hyperspace.

Vehicle (Land/Marine): Use these rows to resolve all fumbles made while attempting vehicular maneuvers on land or at sea.

Example: *Much against her better judgment, Alice Weaver has been persuaded to ascend the outside of the skyscraper headquarters of Interstellar Metals. She's 300m up when her player rolls a moving fumble. This particular fumble does not mean an instant plunge to the ground.*

- If the player rolls a 25 or below on the fumble:
- The SysOp rules that Weaver loses her grip on a handhold and slides a few feet before catching herself. The character is bruised and shaken, but otherwise okay.
- If the player rolls a 26-50 on the fumble:
- Weaver slips and slides 20m below her original location. Due to her situation, the SysOp has the player roll d10 in damage for assorted cuts and bruises sustained in the fall.
- If the player rolls a 51-75 on the fumble:
- This time, Weaver slips some 50m and is thoroughly battered by the fall. The GM has the player roll 2d10+10 on the Crush critical table for bouncing off the wall a few times. The resulting Crush critical results in some concussion hits but no fractures.
- If the player rolls a 76-100 on the fumble:
- The rope prevents Weaver from falling to her death. However, the SysOp requires a d100 roll on the Crush critical for bouncing off the wall followed by a d100 roll on the Puncture critical table as she accidentally smashes her way in through a window on a lower floor.
- Maybe next time her comrades will listen to Alice and try going in through the front door.

Table 9.2 Fumbles - Part 1		
01 – 25	**Combat (Melee):**	You lose your grip on your weapon and the opportunity to strike your foe.
	Combat (Ranged):	You are not sure whether the safety is on or off and spend the round fiddling with your weapon.
	Combat (Vehicle):	He who hesitates is lost. You lose your action.
	Computer:	Waste d10 rounds before you realize that you need to switch on the computer.
	Engineering:	There appear to be a number of components left over. I wonder where they go? Start again from scratch.
	Influence:	You accidentally make a high-pitched noise as you try to begin.
	Mental:	Umm…what was your name again? Your mind goes blank for a moment.
	Moving:	You stumble over an unseen imaginary dead turtle.
	Physical:	You drop whatever you are holding and must spend a round recovering it.
	Psionics:	There is no "Try", remember? Lose your power points and feel inadequate for the rest of the round.
	Vehicle (Air/Space):	Pay attention to your controls. The vehicle lurches in a random direction (1 km if cruising, 50 m for landing, takeoff or docking). If there was anything in the way, you just hit it.
	Vehicle (Hyperspace):	A very slight discrepancy in your course means that you will miss your destination by d10 light-years.
	Vehicle (Land/Marine):	You' ve just stalled the vehicle. Take 5 rounds to restart the engine.
26 – 50	**Combat (Melee):**	You give yourself a minor wound. Take 1d10 hits. Remember, the pointy end faces the enemy!
	Combat (Ranged):	In an attack of stupidity, you accidentally unload your weapon' s ammunition or energy cell.
	Combat (Vehicle):	A bad case of itchy trigger finger is diagnosed. You fire the weapon too soon and squander your attack.
	Computer:	You are side-tracked and spend a minute engrossed on a tangential matter. Is this really the time to be reading email?
	Engineering:	A bad workman blames his tools. What do you call someone who breaks his tools? Repair or replace your equipment, then start again.
	Influence:	You strike a sour note with your audience. They are far from inspired by your performance. You may try again, but with a -10 modifier.
	Mental:	You are too deep in thought to be distracted by trifles.
	Moving:	Your maneuver ends up with you tripping and falling face-first into the dirt. Take 1d10 Hits. You must spend a round picking yourself up off the ground.
	Physical:	You mutter an oath as the tool that you are using snaps and breaks! At least you didn' t damage what you were working on…
	Psionics:	Lose the power points and suffer a moderate headache for the next minute (-10 to all actions).
	Vehicle (Air/Space):	Your aggressive piloting causes minor damage to the propulsion system. –10 penalty to all further maneuvers until damage is repaired.
	Vehicle (Hyperspace):	Accumulated rounding errors means that your course is off by 2d10 light-years. Hope you weren' t in a hurry.
	Vehicle (Land/Marine):	Get a grip. The vehicle is weaving from side to side. Anyone or anything in your way will be hit. It' ll take you 5 rounds before you can straighten the vehicle out.
Note: It is important to tailor the fumble to the event. While a fumble is unfortunate, it is not necessarily certain death.		

Table 9.2 Fumbles - Part 2		
51 – 75	**Combat (Melee):**	It is surprising that you still have all of your limbs attached! Roll 2d10 on the appropriate damage table. You have just successfully attacked yourself. Congratulations!
	Combat (Ranged):	If using a firearm, you' ve just had a misfire – it' ll take a minute (at least) to repair. If using an energy weapon, you' ve drained the energy cell somehow.
	Combat (Vehicle):	It didn' t do that in the simulator. You' ve somehow managed to shut down your weapon. It' ll take a minute to get it operational.
	Computer:	You didn' t mean to press that key. You' ve just permanently deleted all your current work. If this was a hacking attempt, you' ve also triggered any intrusion detection software.
	Engineering:	You think you' ve fixed the problem. Actually you haven' t and the equipment will fail permanently the next time it is used in a stressful situation (SysOp' s discretion as to when.)
	Influence:	The crowd does not look the least bit pleased. In fact, they look downright hostile. You can try again with a -20 modifier, or play it safe and go elsewhere!
	Mental:	In the words of a great philosopher, "Doh!" Not only do you not remember anything pertinent, but you actually spout off incorrect information without realizing it!
	Moving:	Wow, people can bounce! Roll 2d10+10 on the Crush table for the damage that you gave yourself in that spectacular fall!
	Physical:	You are distracted by a noise at a critical moment. Not only is the tool you were using broken, but the item you are working on was damaged in the process.
	Psionics:	Discard the power points and roll a Tiny Neuro critical on yourself (roll d100 –20).
	Vehicle (Air/Space):	This isn' t an arcade game. The propulsion system suffers significant damage from your stupid piloting and the vehicle is at –20 to all further maneuvers until repaired.
	Vehicle (Hyperspace):	You were lucky you transposed some of the trailing digits or you' d be en route to Andromeda. As it is, you' ll miss your destination by 2d10 + 20 light-years.
	Vehicle (Land/Marine):	Poor handling causes damage to the vehicle' s propulsion systems (i.e. tires, hydrofoils, brakes, engine). –20 penalty to all further use of the vehicle until repairs are made.
76 – 100	**Combat (Melee):**	That will most definitely leave a mark! You shouldn' t try to harm yourself like that. Make a 1d100 roll on the appropriate damage table as you try this fancy form of suicide.
	Combat (Ranged):	If there is an ally in the vicinity (SysOp' s choice if more than one), you have just fired on him (make a new attack roll but ignore any fumble results) If not, shoot yourself instead (roll d100 on the appropriate critical table for damage).
	Combat (Vehicle):	If there is an allied vehicle or structure in the vicinity (SysOp' s choice if more than one), you have just fired on it. If not, you' ve simply shut down your weapon and it' ll take an engineer to get it operational again.
	Computer:	Wow. A new error message. The program crashes, deleting all your current work. If this was a hacking attempt, you' ve also triggered any intrusion detection software and it has identified your location.
	Engineering:	If you were repairing something, you' ve effectively destroyed it. If you were replacing something, you' ve just destroyed the spare parts. Time for a career change – maybe a job where you can wear a nice red uniform?
	Influence:	The audience is stunned! Well, at least for the first few seconds. After that, the term ' Lynch Mob' comes to mind. Better luck next time!
	Mental:	You keep using that word…It doesn' t seem to mean what you think it means…
	Moving:	Is it supposed to bend that direction? Unfortunately not! Make a 1d100 roll on the Crush table for the damage you take from that hilarious move. Everyone within 20m spend 3 rounds trying to contain their laughter!
	Physical:	Hmm…Square peg? Round hole? Nope, it' s just you destroying (or activating, if a trap) whatever you were working on. Take 2d10 hits of damage as you wound yourself in the process.
	Psionics:	Cross off the power points and roll a Medium Neuro critical on yourself (roll d100).
	Vehicle (Air/Space):	That wasn' t very clever. You just shut down the engines completely. If you were flying in atmosphere, it is now falling fast – an Extremely Hard All-or-Nothing Engineeing (Transport) maneuver is needed to save you from crashing by restarting the engines. If you were in space, you' ll carry on your current orbit until the engines can be restarted which will take at least ten minutes or an Extremely Hard All-or-Nothing Engineering (Magneto-gravitic) maneuver.
	Vehicle (Hyperspace):	Did you compute a course or just type in random digits? Your course is off by 5d10 + 50 light-years. Good luck getting home.
	Vehicle (Land/Marine):	You flip the vehicle upside down or crash it (SysOp' s choice). Vehicle takes a Medium Crash Critical Strike. Roll d100 on the Impact Critical Strike table for anyone in the vehicle.
Note: It is important to tailor the fumble to the event. While a fumble is unfortunate, it is not necessarily certain death.		

Unusual Actions & Maneuvers

Sometimes a character may want to make an unusual action or maneuver that is not covered by the rules.

Such actions or maneuvers should be adjudicated by the SysOp. There are three simple steps to follow to resolve such actions, if a skill roll is needed.

1. Determine if there is a skill that applies either wholly or partially. If the skill applies wholly, then let the character use it. If it applies partially, then allow the character to use one half of the total bonus for that skill. If no skill applies, determine which two stats apply to the maneuver. Note that the same stat can apply twice in this circumstance.
2. Determine the difficulty of the action or maneuver.
3. Have the player make the roll adding all the modifiers.

By following the three steps above, the SysOp can resolve just about any actions that the players wish to perform without too much trouble.

Attacking Objects And Structures

Subtlety and finesse must sometimes give way to brute force and ignorance. When you lack keys or lockpicks, battering down a door or smashing open a lock may be the only recourse. The exact resolution method depends upon the target and the attacking mechanism.

Attacks (using the body or inadequate tools) on objects that are human sized or smaller may be resolved using the Percentage column of the Maneuver Table.

The attacking character makes a normal Maneuver Roll, adding a value equal to twice their Strength bonus. The result is compared to the Percentage column of the Maneuver Table. The value from the table determines the amount of damage the object has received. Results equal to, or above, 100% thoroughly destroy the object. Results less than or equal to zero represent an inability to damage the item. Difficulty modifiers should be applied to this roll based upon the consistency of the object (see below), as well as its shape or design.

In the case of a character trying to force open a door by shoulder charging or kicking it down, the same rules are applied with one exception: The character is required to get a result of 100 or better in a single roll.

Note: If a character is using a weaker item (such as a hammer against granite) in their attempt to shatter or disable a particularly sturdy object, any result in breakage will always be of the inferior item.

Example: *A group of alien aborigines have captured Jung. One conservative alien has started to smash up Jung's equipment with some handy rocks. The SysOp rolls on behalf of the alien, getting 35 on the dice, plus 16 for twice a +8 Strength bonus, but minus 20 for the ruggedness of Jung's assault laser. The total is 31 (35 +16 –20), or 30% on the Percentage column. These Stone Age primitives may not be able to destroy Jung's rifle per se, but it won't be usable once they've finished with it.*

Example: *Jung decides that he'd rather not be on the receiving end of those rocks, so decides to break down the wooden door of his improvised prison cell. Psyching himself up, Jung gives the door the old college try with a solid shoulder charge. Jung's player rolls 52, adds 14 for double Strength bonus, and a further 20 for the flimsiness of the door (the SysOp rules this ought to be a Light maneuver), totaling 86. Not enough.*

Attacks on objects using proper tools (such as laser cutters, power drills, etc.) are also resolved using the Percentage column of the Maneuver Table. In these circumstances, the attacking character makes a Machine Operation skill maneuver roll, modified according to the object's material, shape, or design. The result is compared to the Percentage column of the Maneuver Table, with results equal to or greater than 100% achieving the desired effect (alteration, penetration, or outright destruction). Results of less than or equal to zero may represent user incompetence or just slow progress on extremely tough materials according to circumstances.

Example: *It has proven impossible to open the airlock of a derelict spacecraft normally as it has vacuum welded. The crew of the Faffin' Around have maneuvered a boarding hatch into place, so that they can cut their way through with laser torches. Dack's player rolls 41 on the dice plus 55 (Machine Operation skill). The SysOp rules that the airlock alloy is very durable, so this will be a Sheer Folly (-80) maneuver. The total is 16 (41 + 55 – 80), for 10% on the Percentage column. This could take a while – let's hope it really is a derelict.*

Attacks on objects using personal or vehicle weapons will normally result in the destruction of the object. The attacking character makes an attack roll using their weapon skill (or Demolitions if using explosives) as normal. The attack is modified according to the size of the target object (shooting out a lock is harder than spraying a console with burst fire) and its material strength. (Ignore size modifiers if the character has the time to accurately place an explosive charge). The result is looked up on either the Vehicle Piercing or Vehicle Energy critical tables. (Attacks made by personal weapons are resolved according to the rules for personal weapon attacks against vehicles). More on vehicles can be found in HARP SF Xtreme. Explosives either deliver a set amount of damage or require a look up of their result on the Warhead Critical Table. If the attack delivers any Structural Hits, the object is destroyed.

Example: *Hamilton finds himself confronted with a locked door and no lock picks. He does, however, have his trusty pistol. Hamilton shoots at the lock, rolling 45 on the dice, adding 75 for skill and 10 for point blank. The lock is a very small target, so the SysOp*

rules this is Extremely Hard (-60), but that the lock is not especially strong. The Total Attack Roll is 70 (45 + 75 + 10 –60). Pistols are Small personal weapons and so are converted to Tiny-30 "vehicle" size attacks, so the Adjusted Attack Roll is 20 (70 –50), which is 5 Structural Hits from the Vehicle Piercing critical table, more than enough to blow the lock out.

Objects can also be destroyed by a careful application of the Demolitions skill. The character places an explosive device on or near the target object, arms the device, and then gets out of harm's way at speed! In game mechanics, this is an All-or-Nothing Demolitions maneuver, normally at Medium difficulty level. If the maneuver is successful, then the explosive detonates and the desired effect occurs. If the maneuver is unsuccessful, the explosive only partially detonates, fails to detonate, or explodes later than expected (SysOp's choice). If the maneuver is fumbled, the explosive blows up in the character's face. Explosive charges will either do a set amount of Structural Hit damage or require a separate roll on the Warhead critical table.

Example: *If he had more time, Hamilton could have used a strip of plastic explosive to destroy the lock. In this case, Hamilton would have added 60 for his Demolitions skill to his roll of 45 to get a total of 105. Just enough for a safe controlled explosion delivering 2 Structural Hits and destroying the lock.*

The following list details the various Difficulty ratings and then offers examples for each. Some of the listed items are followed by a number in parentheses – this is a measure of their material strength and should be used as an "armor" modifier against weapon attacks. While some objects may be broken by nearly any weapon, certain objects are unaffected by certain types of attacks. For instance, bashing a rope will not break it. SysOps should apply common sense in these situations.

Table 9.3 Breakage Difficulties

Routine	**Hard**
A glass window	Stout wooden door
A small statuette	Masonry wall (30cm thick)
Paper	Wooden chest (normal)
String	Thick rope (5-10cm diameter)
Easy	Synthetic rope
Thin rope (less than 2cm thick)	Firearm or energy weapon
Thick glass	**Very Hard**
Thin ice	Stout wooden door, banded in iron
Cardboard	Good luck
Consumer plastics (< 1cm thick)	Chains or handcuffs
Light	Fiberglass (5)
Rope (2-5cm diameter)	**Extremely Hard**
Simple wooden door	Manacles
Small wooden chest (15cm x 25cm)	Heavy wooden chest
Consumer plastics (< 5cm thick)	Brick wall (10 cm thick) (10)
Medium	**Sheer Folly**
Good wooden door	Iron door (5cm thick) (10)
Wooden packing crate	Hewn stone wall (1m thick) (10)
Cheap lock	Excellent lock
Bones	Steel chest
Shoddy shop stall	**Absurd**
Average handheld device	Starship hullmetal (20)
	Microfusion generator shielding (20)

Sometimes characters will have to forcibly breach or destroy structures such as environmental domes, bunkers, military fortifications, and buildings. Unless characters are comic-book superheroes, they won't be able to kick down brick walls. However, they can use proper tools (such as power drills, laser cutters, plastic explosives etc.) to open human-sized holes in such structures. Use the rules described above for destroying objects using proper tools.

Personal weapons simply don't deliver their damage over a large enough area to destroy a building, although they can punch holes through most materials. To destroy a building or similar structure, you need vehicle weaponry or industrial-strength explosives. Resolve these attacks using the normal vehicle combat rules or using the Demolitions skill (for bombs). Use the "armor" modifiers listed above as the structure's Armor Rating.

Structures have Structural Hits according to their volume and material. Calculate the approximate volume in cubic meters and multiply by the factors listed below to obtain the number of Structural Hits.

Wood: x1
Brick, fiberglass, soft stone: x2
Hard stone: x3
Iron, steel: x4
Reinforced/armor plated steels, hullmetal, superhard alloys: x5

Example: *A proverbial brick outhouse has dimensions of 2m by 1m by 2m, or 4 cubic meters. Multiplying 4 cubic meters by x2 for brick gives it 8 Structural Hits.*

Computer Issues

Computers are omnipresent in almost every high technology civilization. Specialist software and hardware is integrated into virtually every piece of electronic equipment, either to control it outright or to assist in its use. Computers are responsible for storing, managing, processing, and retrieving the ever-increasing information generated by individuals, organizations and other computers.

Computer Assisted Equipment

Equipment, such as scanners, microscopes, weapons systems, etc., can be improved in terms of their usability, accuracy, or performance through the incorporation of specialist knowledge bases and reasoning software. These integrated tools provide a bonus to one relevant skill to the tool user. The bonus varies from +5 to +50, with Early software capped at +10, Mature software having a maximum of +30, and Advanced packages reaching their limit at +50. Such software enhancement comes at a price – multiply the normal cost of the item by the bonus, e.g. a +20 medical scanner costs 20000 credits, x20 the price of an ordinary medical scanner (1000 credits).

Computers & Information

With potentially the entire accumulated knowledge of a civilization available through computer access, some players and SysOps may question the value of any character learning any knowledge-related skill other than Computer Operation. While Computer Operation is very beneficial in retrieving potentially useful information, it does not provide the context for assessing that information for relevance or accuracy. The "Garbage in, garbage out" principle applies no matter how sophisticated the information management and retrieval system. In contrast to Computer Operation, the specialist knowledge and technical skills provide the techniques and methodologies for applying the information, deducing conclusions on the basis of the evidence, and making associations with other information. Finally the specialist skills don't need access to a computer and recalling a key fact is normally much faster than devising a suitable knowledge base query to obtain it from an archive.

Information is stored in "Archives", complex knowledge bases whose quality varies according to the storage capacity, processing power, and reasoning ability of its computer host. Archives are rated as Limited, Concise, Comprehensive or Total in increasing order of coverage. Each Archive contains information specific to one particular skill. The number and rating of Archives depends on the type and technology stage of the host computer:

Table 9.4 Archive Types

Device	Early	Mature	Advanced
Handheld	2 Limited	4 Limited	8 Limited
Personal	5 Concise	10 Concise	15 Concise
Mainframe	10 Comprehensive	20 Comprehensive	40 Comprehensive
Planetary Net	Any number of Total Archives		

Under normal circumstances, a character should always use the most complete (set of) archive(s) accessible to them. However, network communications may be unavailable, unreliable, or insecure, and so characters will be restricted to locally available resources.

Accessing an Archive is a Computer Operation maneuver resolved on the Bonus column of the maneuver table. This difficulty and minimum time taken by the maneuver is given in the tables below and depends on the Archive's rating and technology stage. The result of the Computer Operation maneuver is applied as a modifier to the specialist skill.

Table 9.5 Archive Modifiers			
Type	**Early**	**Mature**	**Advanced**
Limited	Very Hard (-40)	Hard (-20)	Medium (+0)
Concise	Hard (-20)	Medium (+0)	Light (+20)
Comprehensive	Medium (+0)	Light (+20)	Easy (+40)
Total	Light (+20)	Easy (+40)	Routine (+60)

Table 9.6 Archive Access Times			
Type	**Early**	**Mature**	**Advanced**
Limited	90 rounds	60 rounds	30 rounds
Concise	60 rounds	40 rounds	20 rounds
Comprehensive	30 rounds	20 rounds	10 rounds
Total	30 rounds	20 rounds	10 rounds

The times above are for retrieving and analyzing significant chunks of information, e.g. "Give me a summary of the history of Armstrong Base". For much more concise queries, e.g. "Are the Silth a carnivorous species?", divide the times given by five. For open-ended research, increase all times from rounds to minutes, e.g. consulting a Mature Comprehensive Archive on a research issue takes 20 minutes, rather than 20 rounds.

Example: *On an exploratory mission deep in the southern tundra of Tantallon, the crew of the Faffin' Around (now in their assault shuttle) fly over a herd of quadruped animals. Dack consults the shuttle's onboard Concise Archive on Fauna (Tantallon). Steve makes a Computer Operation maneuver, rolling 79, adding 80 for Computer Operation, for a total of 159, which equates to a +30 bonus. Steve now rolls 41, subtracts 5 (-25 for no skill in Fauna Lore (Tantallon), but +20 for stats), adds the +30 bonus, for a total of 66. Dack starts reeling off random facts about Snowshaggies. Matt, playing the scout Jung, rolls 89, adds 38 for Fauna Lore (Tantallon), for a total of 127. Jung interrupts saying that Snowshaggies are harmless lichen eaters, but to watch out for Snowcats as they are never far from a Snowshaggy herd.*

Diseases, Poisons and Drugs

Characters afflicted with a disease suffer discomfort or dysfunction either in localized regions of their bodies or in their whole body. Diseases can be the result of genetic abnormalities, infection, or can be psychiatric in nature.

Genetic diseases are frequently inherited – some are non-life-threatening conditions (such as most allergies or color blindness), others represent susceptibility to fatal conditions.

Bacteria, viruses, or prions can cause infections. Bacteria are mostly unicellular microscopic organisms, which reproduce by fission – some are positively helpful, others are lethal. Viruses are submicroscopic organisms, which reproduce by inserting themselves into the cells of other living creatures and subverting those cells into producing new viruses. Prions are infectious rogue proteins, even smaller than viruses, which can cause degenerative nerve and brain conditions. Many infectious diseases are contagious in that one sufferer can pass the disease onto another through contact. As a rule of thumb, any world that possesses native life forms (plant or animal), which can provide nutrition for off-world colonists, will also harbor microscopic organisms that can cross billions of years of parallel evolution to infect alien invaders.

Psychiatric diseases are mental illnesses such as obsessions, phobias, manias, paranoia, etc. Some are the result of early trauma and environmental conditions; others are genetic in origin.

In the Tintamar universe, most genetic diseases can be cured using gene therapies, which introduce healthy genes to replace defective genes in the patient's body. Antivirals and antibiotics to counter specific infectious agents are widely available on most civilized worlds. Drug and psychological therapies exist for most psychiatric diseases.

Poisons are noxious substances that have adverse effects on living creatures. They are divided into two classifications, Internal and External. Internal poisons must be ingested, injected, or inhaled into their target to take effect. On alien worlds, poisons can be as simple as contaminants such as heavy metals in the atmosphere, water, or soil. What is meat and drink for one alien race can be poison for another species. External poisons have caustic effects upon contact with the skin of a living creature and include such things as acids, itching powders, and contact poisons.

Drugs are chemicals, which are not normally deadly in the short-term, but can have adverse effects and are frequently addictive. They are effectively poisons for the purposes of these rules.

Diseases and poisons can affect characters in different ways; some poisons can kill instantly, some diseases have sudden onsets and run a lethal course in a matter of days, while other poisons and diseases have variable effects depending on a character's resistance to the disease or poison, the strength of the dosage for poisons, and the virulence of a disease-causing agent. To reflect these unpredictable effects, **HARP** poisons and diseases use three types of resistance rolls: Static, Variable and Cascading Resistance Rolls. In addition, some poisons inflict poison criticals.

Static – Diseases and poisons using this method give the target number that the character needs to roll equal to or higher than when making a Resistance Roll (RR) against them. These diseases and poisons use the notation of RR (xx) in their description where the xx is the number that the RR must equal or beat. They work exactly the same on everybody, and they will either affect the character or not. The poison Placidin, for example, has an RR of 130; which means that a character must roll 130 or better on a Stamina Resistance Roll to resist its effects.

Variable – Diseases and poisons using this method follow the normal rules for determining the number that the character must equal or beat with his Stamina RR. The attacking substance or disease agent rolls on the RR column of the Maneuver Table. The result is the number that the character's RR must defeat. Poisons of this type use the notation of PB (xx), where PB stands for Poison Bonus, and the xx is the bonus that the poison uses on the Maneuver Table roll. Similarly diseases in this category use the notation of AB (xx), where AB stands for Agent Bonus, and the xx is the bonus that the disease uses on the Maneuver Table roll. Diseases and poisons using this method are highly variable in their potency. They have an all-or-nothing type of effect that either happens or doesn't. So to use a poison such as Agonilin, which has a PB of +10, roll d100 open-ended and add 10 to the result. Then look on the RR column of the Maneuver Table. The number listed is what the target of the poison or disease must meet or beat in order to successfully resist.

Cascading Resistance Roll (CRR) – These are the most dangerous poisons and diseases as they have effects based upon how well the affected character makes his RR against them. These diseases and poisons list a number of different values similar to those used in the Static method above. The target makes his RR and then applies the result for the highest CRR passed. Poisons of this type will almost always use the Poison Critical Tables (see Chapter 10).

The following is an example of what a CRR type of poison will look like:

- CRR (120) – No Effect
- CRR (100) – 1d100 -20 Internal Poison Critical Table
- CRR (80) – 1d100 Internal Poison Critical Table
- CRR (60) – 1d100 +20 Internal Poison Critical Table
- Failure – Death in 1d10 rounds

Example: *Those pesky Stone Age aliens shoot Jung with a dart coated with the poison described in the CRR example above. His player makes an open-ended d100 roll and gets a result of 56. Jung has a Stamina RR bonus of +40 giving a total of 96 for the RR. This is high enough to pass the CRR (80) level. Jung now receives a 1d100 roll on the Internal Poison Critical Table. If Jung had rolled an 80 or above, he would not have been affected by the poison at all.*

Succumbing to the immediate effects of a drug is only the beginning of the slippery slope for a character. The longer-term danger is that of addiction. Any character who fails a Stamina RR against an addictive drug must make a Will RR within one day. This will always be resolved using the Poison Bonus method and the exact PB will be listed in the drug's description. If the character fails this Will RR, they have become addicted to the drug and must have one dose of the drug per day or suffer withdrawal symptoms (a –10 penalty to all actions from a combination of moodiness, distraction, feeling unwell, nervous shakes, etc.) until they take the drug. For every day that a character denies himself (or is denied) the drug, the severity of the withdrawal symptoms increases at a rate of –10 per day, e.g. on the first day, the penalty is –10, on the second day it is –20, the third –30, etc. Note these penalties do not apply to the Will RR – as RRs are not actions.

A character who wants to break the addiction is allowed to make another Will RR on each day of forced withdrawal. As soon as the character succeeds in making this RR, the addiction is broken.

Example: *Hamilton is investigating suspicious happenings in the mines of the corporate planet of Hades. Unfortunately for Hamilton, the mining combine have been lacing the rations with a designer drug that mixes the euphoric nature of Paradisium and the will reduction properties of Zombi. This drug has a Stamina RR (100) and is noted as highly addictive with a Will PB (50). Hamilton fails both his Stamina RR and his initial Will RR, so has his will sapped and becomes addicted to the rations. The next day, Hamilton wakes up with a craving for breakfast, and realizes just why the miners of Hades are so content and placid. He resolves to break the habit immediately and so arranges to find other food for the rest of the day. His player notes the –10 penalty philosophically and is informed by the SysOp that he can make his Will RR at the end of the shift. The SysOp rolls for the poison, getting 94 + 50 for a total of 144, which is a RR target of 140. Hamilton's roll is a total of 105, so the craving remains. The next day, Hamilton will be at –20 to all actions and he still needs to locate more uncontaminated food.*

Table 9.7 Diseases	
Disease	**Effect and Resolution**
Cetan Pox	The skin of the victim erupts in a mass of ugly boils (-5 to Presence stat bonus) These ooze a pus which carries the contagious viral infection. RR(100)
Collintay' s Syndrome	Degenerative disease affecting mental faculties of sufferers. Viral infection. Not contagious. **CRR (150):** No effect **CRR (130):** -5 penalty to Reasoning stat bonus **CRR (110):** -10 penalty to Reasoning stat bonus and –5 penalty to Insight stat bonus **CRR (90):** -15 penalty to Reasoning stat bonus and –10 penalty to Insight stat bonus **Failure:** -20 penalty to Reasoning stat bonus and –15 penalty to Insight stat bonus
Crimson Death	Genetically tailored virus designed to affect only one target who possesses matching DNA. Can be transmitted by contact. **CRR (200)**: No Effect **CRR (175):** Character begins to bleed uncontrollably from orifices (d10 hits per day) after one day. **CRR (150):** Character suffers blood loss through pores and orifices (2d10 hits per day) after one day. **CRR (125):** Character suffers severe blood loss at a rate of 4d10 hits after one day. **Failure:** One day after infection, character will suffer catastrophic blood loss (1 hit per minute).
Eridani Nerves	Sufferers experience uncontrollable nervous spasms (-5 to Agility stat bonus). Contagious prion infection transmitted through blood. AB(30).
Pavonian Fever	Contagious viral infection originating in the swamps of Pavonis. Victims suffer from sporadic bouts of delirium and hallucinations (10% chance every day of a bout lasting d10 hours). Victims have an elevated temperature during these bouts. Virus is spread by contact. AB(60)
Pilnag' s Condition	The sufferer will lose all their hair over the course of one week. This bacterial infection is not contagious. RR(120)
Spacer' s Flu	The sufferer will have a high temperature, headache, sore throat, hacking cough, and runny nose, and a penalty of -5 to his Quickness stat bonus. This family of viruses is spread by proximity to existing victims and can reach epidemic proportions on closed habitats. AB(50)

Animal Poisons

Animals that use poison such as snakes, scorpions etc., must first make a successful attack that inflicts damage on the target. Then the poison is automatically injected into the character's system. At this point, the SysOp must determine what type of Resistance Roll is required for the poison.

If the poison uses one of the critical tables, then use the following Cascading Resistance Roll (CRR) table to determine the effects of the poison on the character. The creature's description will determine which table to use (Internal or External).

- **CRR (120)** – No Effect
- **CRR (110)** – 1d100-20 on indicated critical table
- **CRR (100)** – 1d100-10 on indicated critical table
- **CRR (90)** – 1d100 on indicated critical table
- **CRR (80)** – 1d100+10 on indicated critical table
- **CRR (70)** – 1d100+20 on indicated critical table

• **Failure –** Character receives maximum result from critical table

Some poisons from creatures will have only one type of effect. Those creatures will be given a Poison Bonus so that the poison may be resolved using normal Resistance Roll methods on the Maneuver Table. In these cases, the effect of the poison will be described in the creature's description.

Equipment Issues

Understanding and Using Equipment

Situations will arise where characters will acquire items of alien technology. This could be the result of a fruitful archaeological expedition, an encounter with interstellar merchants, or even the careful sifting through the wreckage of a hostile enemy craft. Such devices may be the products of divergent but comparable technological development, interesting in terms of an alien approach to problems, but unlikely to initiate a scientific revolution. Other artifacts may be the flotsam and jetsam of extremely advanced precursor civilizations – characters will count themselves fortunate if they can make the artifacts function once and survive the experience. Yet others will be time-ravaged junk or curios from cultures more primitive than the characters.

Finding out what an unknown device can do, if anything, requires a careful examination using appropriate scanners, a grasp of the relevant engineering skills, and time. Suitable tools will be a techscanner at the minimum, with chemanalyzers, mini-microscopes and screwdrivers all having their place.

The SysOp must decide which Engineering skills are relevant to the construction and operation of the device. Sometimes more than one skill may be relevant – for instance understanding an alien version of the Lagrange Drive will require Engineering (Magneto-gravitic). If the alien ship also has an unusual overall design, an Engineering (Transport) maneuver might be necessary to determine if their drive has implications for the rest of the ship's design.

Characters must then succeed in one All-or-Nothing Engineering maneuver for each required Engineering skill. The following modifiers are applied (all are cumulative):

- -20: device was designed by members of an alien species
- -20: device was intended for use by members of an alien species
- +0: device was designed by members of own species
- +0: device intended for use by members of own species
- +0: device is of comparable technological development to investigator
- -20: device is from a much lower technological era than investigator
- -60: device is much more advanced than investigator (possibly utilizing scientific principles unknown to investigator)
- +20: investigator has witnessed the device being used
- -20: investigator has no access to the correct tools to probe the device
- -20: device has no labels or other markings
- +60: investigator reads the manual
- Routine (+60): Character spends one month examining the device
- Easy (+40): Character spends two weeks examining the device
- Light (+20): Character spends one week examining the device
- Medium (+0): Character spends one day examining the device
- Hard (-20): Character spends four hours examining the device
- Very Hard (-40): Character spends two hours examining the device
- Extremely Hard (-60): Character spends one hour examining the device
- Sheer Folly (-80): Character spends ten minutes examining the device
- Absurd (-100): Character spends one minute examining the device
- If the character fumbles any of these maneuvers, then the device may be irreparably damaged (see fumble table) at SysOp's discretion.
- If the character succeeds in all the requisite maneuver rolls, then the character understands how to operate the device. (The character may learn an appropriate Machine Operation skill if required by the SysOp.)
- If the device is from a comparable or lower technology stage to the character, then the character also understands the engineering principles of *how* it works, rather than simply *what* it does.
- If the device is from a much higher technology stage than the character's (e.g. a twentieth century engineer confronted with a magneto-gravitic drive), then the character does **not** automatically understand its principles.
- Understanding a higher tech device requires a second series of Engineering maneuvers, applying all the germane modifiers above and a special –50 modifier (SysOps may raise this further at their discretion.) If any of the rolls are failed, then the character must start over from scratch. If any of the rolls are fumbled, then the character will never be able to glean the underlying principles from just this device.

Breaking Equipment

Even the best designed and well made equipment is subject to wear and tear through normal usage. However, the kit of adventuring PCs is particularly prone to misuse

(through fumbled maneuvers) and abuse (being dropped from a great height, dowsed with acid, set on fire, electrocuted, etc.)

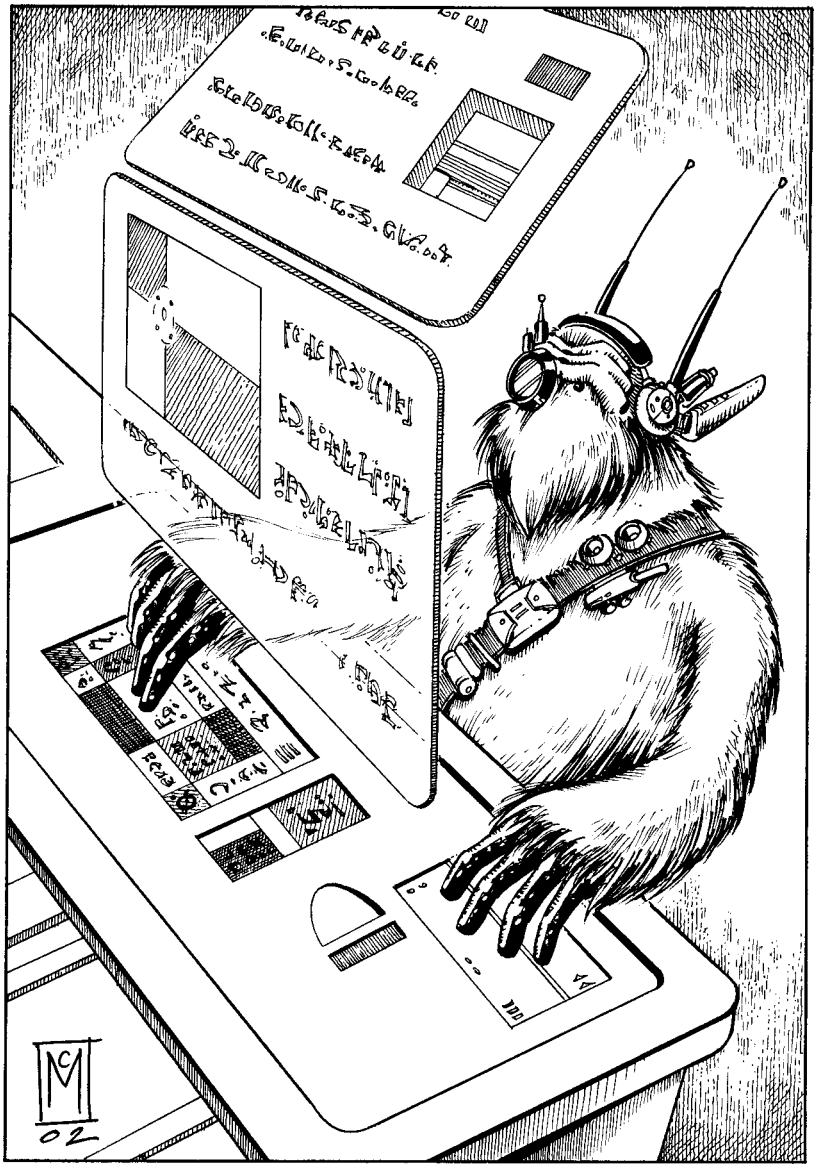
Any time that a character fumbles a maneuver roll using a piece of equipment (not a weapon, vehicle or software package), a malfunction roll must be made. This is a d100 (not open-ended) roll. On a roll of 01-05, a malfunction has occurred and a separate d100 (not open-ended) roll must be made on the Malfunction Table below.

Any time that a piece of equipment (including weapons, but not vehicles or software) suffers physical damage (exposure to corrosive gases or acids, extremes of heat and cold, sudden impacts, electrical surges, etc.) a d100 (not open-ended) malfunction roll must be made. On a roll of 01-05, a malfunction has occurred and a roll must be made on the Malfunction Table. The severity of the malfunction will depend on the damage severity. Map damage expressed as criticals as follows:

Tiny: d100-20 roll on the Malfunction Table
Small: d100-10 roll on the Malfunction Table
Medium: d100 roll on the Malfunction Table
Large: d100+10 roll on the Malfunction Table
Huge: d100+20 roll on the Malfunction Table.

Other damage should require a d100 roll with no modifiers.

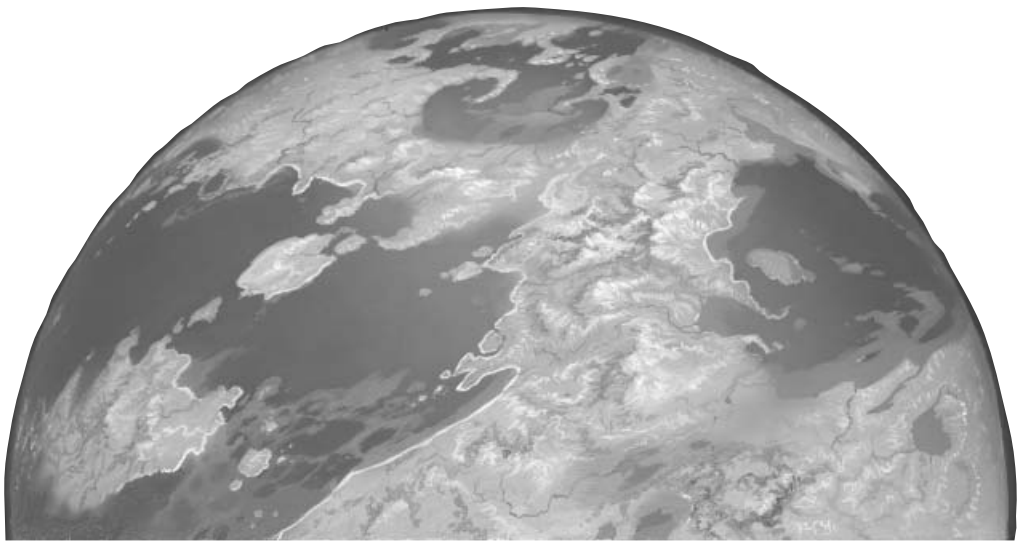
Specific damage to vehicles through combat, crashes, fumbles, and physical damage is covered by the relevant critical and fumble tables. Unless properly maintained, there is a chance that vehicle subsystems will fail during normal use. To avoid this risk, an engineer must spend one hour each day in preventative maintenance. If this is not done, the SysOp makes a malfunction roll for each major system (Control, Crew Module, Motive, Power, and Weapons) once per month. Any roll of 01-05 indicates a malfunction in that system, and requires a d100 (not open-ended) roll on the Malfunction Table – SysOps may



adjust this roll by a –20 to +20 modifier according to how well the vehicle is normally maintained, degree of hard usage, etc. SysOps may choose a particular subsystem to malfunction or roll on the table below. More on vehicles can be found in HARP SF Xtreme.

Table 9.8 Vehicluar Malfunction

Vehicle System	Subsystem (roll d10)	
Control	1. Piloting	6. Medical
	2. Communications	7. Other Console
	3. Sensors	8. Autopilot
	4. Electronic Warfare	9. Memory Banks
	5. Shields Control	10. Vehicle Computer Core
Crew Module	1. Environment: Atmosphere loss in 2-20 hours	6. Bulkhead malfunctioning
	2. Environment: Recycling / ventilation failure in atmosphere – air toxic in 2-20 hours	7. Internal lifts inoperable
	3. Environment: Temperature control failure in 2-20 hours	8. Airlock malfunctioning
	4. Internal lighting out. Emergency lighting on	9. Hangar inoperable
	5. Internal and emergency lighting out	10. Other System or SysOp' s Choice
Motive	1. Landing gear	6. Maneuvering system
	2. Docking gear	7. Magneto-gravitic drive
	3. Running / Landing lights out	8. Lagrange Drive
	4. Communications array jammed in fixed position	9. Modal system malfunction
	5. Sensor array jammed in fixed position	10. Other System or SysOp' s Choice
Power	1. Artificial Gravity	6. Communications/EW power router
	2. Shields	7. Reserve power storage
	3. Power Cell Recharge facility	8. Reactor fuel system
	4. Drive system power router	9. Microfusion generator
	5. Weapons system power router	10. Other System or SysOp' s Choice
Weapons	1. Weapons Firing Console	6. Specific Weapon
	2. Weapons Tracking Control	7. Specific Weapon
	3. Decoy Launching System	8. Specific Weapon
	4. Missile Firing/Reloading System	9. Specific Weapon
	5. Point Defense System	10. Other System or SysOp' s Choice



Entries in the Malfunction Table indicate the degree of unit failure, the performance penalty, the base time to repair, and the cost to repair.

- Units can be temporarily non-functional (transient glitch), damaged, disabled, or effectively destroyed. Disabled units may not normally be used, but occasionally a SysOp may allow them to provide a minimal effect. This is represented in the table entries as a –100 maneuver modifier and a 5% performance factor.
- The performance penalty is given both as a negative modifier to maneuvers and as a percentage of maximum capability, e.g. an artificial gravity unit (for a Federation scoutcraft) operating at 50% capability could only compensate for 300g acceleration instead of its maximum 600g.
- The base time to repair is given in person-hours.
- The cost to repair is defined as a percentage of the unit's price, e.g. a 10% repair of an assault laser costing 900 sols requires 90 sols worth of spare parts. The second percentage (in parentheses) is the cost to repair a vehicle subsystem as a percentage of the entire vehicle's cost.

Table 9.9 Malfunction Severity

(-19) – (-10)	What malfunction? Unit suffered transient failure but recovers in 1 round.
(-9) – 0	Unit suffers transient failure but recovers in 1 minute. Can be brought online in ten rounds by an engineer
01 – 10	Unit suffers temporary downtime and is off-line for ten minutes. Can be brought online in one minute by an engineer.
11 – 20	Unit damaged. –10 to maneuvers / 90% performance. Time to repair: 10 minutes. Cost: 5% (0%).
21 – 30	Unit damaged. –10 to maneuvers / 80% performance. Time to repair: 30 minutes. Cost: 5% (0%).
31 – 40	Unit damaged. –15 to maneuvers / 75% performance. Time to repair: 1 hour. Cost: 10% (0%).
41 – 50	Unit damaged. –15 to maneuvers / 70% performance. Time to repair: 1 hour. Cost: 10% (1%).
51 – 60	Unit damaged. –20 to maneuvers / 60% performance. Time to repair: 1 hour. Cost: 10% (1%).
61 – 70	Unit damaged. –20 to maneuvers / 50% performance. Time to repair: 2 hours. Cost: 15% (1%).
71 – 80	Unit damaged. –25 to maneuvers / 40% performance. Time to repair: 2 hours. Cost: 15% (1%).
81 – 85	Unit damaged. –25 to maneuvers / 30% performance. Time to repair: 3 hours. Cost: 15% (1%).
86 – 90	Unit damaged. –30 to maneuvers / 25% performance. Time to repair: 3 hours. Cost: 15% (2%).
91 – 95	Unit damaged. –40 to maneuvers / 20% performance. Time to repair: 4 hours. Cost: 20% (2%).
96 – 100	Unit damaged. –50 to maneuvers / 10% performance. Time to repair: 4 hours. Cost: 20% (2%).
101 – 105	Unit disabled. –100 to maneuvers / 5% performance. Time to repair: 6 hours. Cost: 25% (3%).
106 – 110	Unit disabled. –100 to maneuvers / 5% performance. Time to repair: 8 hours. Cost: 30% (3%).
111 – 115	Unit disabled. –100 to maneuvers / 5% performance. Time to repair: 10 hours. Cost: 40% (4%).
116 – 119	Unit disabled. –100 to maneuvers / 5% performance. Time to repair: 12 hours. Cost: 50% (4%).
120	Unit destroyed. Time to replace: 12 hours. Cost: 100% (5%).

Repairing Equipment

If it ain't broke, don't fix it. When it is broken, it's time for the Tech to roll up the metaphorical sleeves and attempt a proper repair or a jury-rig solution. A proper repair uses the correct spare parts, and if accomplished, leaves the device as good as new. A jury-rig repair is a temporary solution when the engineer lacks the correct spare parts, and has to improvise by fixing the damaged components or cannibalizing parts from other devices. Jury-rigged devices are more prone to malfunctions.

Repairing a device requires one (or sometimes more) successful All-or-Nothing Hard (-20) Engineering maneuvers. The SysOp chooses which field of engineering is most relevant to the device and requires an Engineering maneuver roll for that field. Sometimes a repair may span multiple subsystems with different engineering fields in which case an Engineering maneuver will be required for each separate field. Failing any one of these maneuvers requires the job to be started over again from the beginning, but the engineer only loses the time spent on the botched repair. Fumbling will trigger a roll on the Engineering Fumble Table.

The modifiers to the repair maneuvers are as follows:

- +20: unit has suffered a transient failure
- +0: unit is damaged
- +0: unit is being completely replaced
- -20: unit is disabled
- +20: character takes twice the base time to make repair
- -10/hour: character attempts repair in less than base time (can reduce base time to a minimum of one hour)
- -10: character attempts to complete a one-hour task in 30 minutes
- -10: character attempts to complete a thirty-minute task in 10 minutes
- -100: character attempting to "repair" a device without understanding its engineering principles
- -20: jury-rig solution: only using half the necessary spare parts (halve cost to repair)
- -40: jury-rig solution: recycling all required parts (0% cost to repair)

Note: Multiple characters can cooperate on a repair task, reducing the base time to complete the fix by sharing out the person-hours of work. For instance, two engineers could complete a repair in three hours, while the same job would take one engineer six hours. However, both engineers have to make their Engineering Maneuvers.

Note: Repairing 1 Structural Point of damage to a vehicle takes one hour normally, costs 0.1% of the vehicle cost, and requires successful Engineering (Transport) maneuvers.

Once a device has been repaired using a jury-rig solution, it will break down on a roll of 01-25 on the malfunction roll.

Tinkering with Equipment

A skilled engineer can improve, albeit temporarily, the performance of equipment with some judicious tinkering. The greater the performance enhancement, the more skill and time it takes to achieve it. This performance will either take the form of a bonus to maneuvers attempted using the item **or** a percentage boost to some capability of the item (e.g. range, energy capacity, field strength, etc.) The enhancement will only last 24 hours. To maintain the enhancement for further periods of 24 hours, the engineer must adjust the device each day. If the character does not spend the requisite time in daily tinkering, the unit will resume its normal unenhanced operation.
The difficulty degree for Engineering maneuvers for initial tinkering, bonus or boost, time required to complete the tinkering, and the time needed for daily adjustment are given in the table below. All daily adjustments require a successful All-or-Nothing Medium Engineering maneuver.

Table 9.10 Equipment Enhancement

Bonus	% Boost	Difficulty	Initial Time	Daily Adjustment
+5	+5%	Hard	1 hour	30 minutes
+10	+10%	Very Hard	2 hours	1 hour
+15	+15%	Extremely Hard	3 hours	90 minutes
+20	+20%	Sheer Folly	4 hours	2 hours

Improved Equipment

For more permanent benefits than can be obtained through fiddling with a screwdriver, characters will need to purchase equipment that is simply better by design or by better manufacture and materials. Item bonuses for both design and manufacture/materials range from +5 to +25 in increments of +5. However devices at an Early technological stage can only have a +5 maximum bonus in either bonus category, while Mature devices have a maximum of a +15 bonus. At the SysOp's discretion, some items of equipment may have both a design and a manufacture bonus, e.g. a Stunclub could have a +5 bonus from manufacture/material and a +10 bonus from improved design for a total bonus of +15 to OB, whereas a Medical Scanner is only likely to have a design bonus (but could be computer assisted.) The price of such improved equipment is their normal cost multiplied by the total bonus, e.g. the +15 Stunclub is 3000 credits (15 x 200).

SysOp's Note: Too Many Bonuses

SysOps should be careful that characters do not accrue too many cumulative bonuses to the same skill from multiple items of improved equipment. It is very easy for

the total skill bonuses to get out of hand. One easy way of avoiding this issue is simply to disallow improved versions of equipment that by their nature provide numerical bonuses, e.g. weapon accessories such as laser sights, camouflage netting, ablative and kinetic armor enhancements, etc.

Senses and Their Limitations

Light & Vision

Sight is the most important sense for many sentient species. It can be characterized by such factors as eye type, eye placement, and the range of the spectrum of light that is perceived by the eye. Evolution produces a visual sense that is adapted for a species' ecological niche. Technology gives civilized races the ability to augment natural vision with external devices and genetic modification.

Characters generally four separate types of vision: Normal, Night, Dark, and Water. Some races may also have "Telescopic Eyes" or "Motion Sensing".

Normal Vision: With normal vision, characters can see clearly during the day. On a starlit night, a character can see up to 10m clearly. With nothing more than the ambient light of a full moon (at least half the size of Earth's Moon), the character can see up to 50m. In an interior setting, using artificial illumination (such as a flashlight), a character can see clearly within the limits of the lighting, and is able to see dimly (-40 to Perception rolls) to a distance equal to one half of the illuminated radius or cone beyond the lit zone.

For instance, if a character is using a flashlight that illuminates up to 10m, the character can see clearly up to 10m away. They also have the ability (with the -40 modifier) to see up to, but not beyond, 15m away.

Night Vision: With Night Vision, characters can see clearly up to 30m on a starlit night and up to 150m from the light of a full moon. In an interior setting, with artificial illumination, the character can see clearly up to double the normal radius of the lighting. Characters can also see dimly (-40 to Perception rolls) an additional distance equal to the illumination of the light source. Their color vision may be impaired in poor illumination.

For instance, if a character is using a flashlight that illuminates a 10m distance, the character can see clearly up to 20m away. He also has the ability to (with the -40 modifier) to see up to, but not beyond, 30m away.

Dark Vision: With Dark Vision, characters can see clearly up to 15m on a starlit night and up to 60m from the light of a full moon. Also, characters with Dark Vision can see a limited distance in complete darkness, but unfortunately cannot distinguish between colors; instead, everything is seen in varying shades of grey. In an interior setting, using artificial illumination, the character can see clearly up to the normal radius of the illumination. A character using Dark Vision can also see clearly up to his normal range beyond the radius of illumination as well. If the illumination is equal to or greater than the range of the character's Dark Vision, they can see dimly (-40 to Perception rolls) an additional distance equal to the original radius of illumination of the light source.

Thus, if a character is using a flashlight that illuminates a 10m distance, and the character has dark vision up to 6m, the character can see clearly up to 16m. They also have the ability (with the -40 modifier) to see up to, but not beyond, 26m away.

Characters who don't have Water Vision can see 30m underwater (15m in freshwater) during daylight, and 10m (5m freshwater) at night. For every 3m of depth, the range of Normal Vision is reduced by 3m. For every 6m of depth, the visual range for characters with Night Vision and Dark Vision is reduced by 3m.

With Water Vision, the pigments in the character's eyes are adapted to the available light spectrum, namely blue wavelengths in the sea and oceans, but green and/or brown wavelengths in rivers and lakes because of vegetation and algae. Some species can alter their color bias. Characters with Water Vision can see normally underwater, but *may* have difficulties distinguishing colors above the water and limited range due to the intensity of light on land (unless anti-glare goggles are worn). On land, characters can see up to 10m on starlit nights and up to 50m on moonlit nights. In an interior setting, using artificial illumination (such as a flashlight), a character can see clearly within the limits of the lighting, and is able to see dimly (-40 to Perception rolls) to a distance equal to one half of the illuminated radius or cone.

For instance, if a character is using a flashlight that illuminates up to 10m, the character can see clearly up to 10m away. They also have the ability (with the -40 modifier) to see up to, but not beyond, 15m away.

Characters with Telescopic Eyes, like those possessed by many birds of prey on Earth, can enhance a feature in their field of vision, magnifying it several times (much like a camera's telephoto lens) at the expense of everything else in the field of view. The process takes a round to focus in on the target and grants a +20 bonus to Perception maneuvers involving the target. While focused, the character suffers a –20 modifier to Perception maneuvers relating to other features or targets.

Characters with Motion Sensing have an acute ability to register even slight movements within their normal visible range. Characters receive a +20 bonus to Perception maneuvers against moving objects or people.

Sound and Hearing

Hearing is perhaps the second most important sense for intelligent species. Humans can only hear sounds in a limited range of frequencies; human ears are very poor at picking up and distinguishing sounds underwater. Some races have much more sensitive auditory senses, such as Infrasound Hearing and Ultrasound Echolocation. Sound does not travel in a vacuum.

Infrasound Hearing detects sounds at very low frequencies that are far below human hearing. For avian races, Infrasound Hearing enables them to hear the different sounds caused by air movement over the land and sea. Their brains convert this information into auditory "maps" of the terrain, granting them a +20 bonus to Navigation. For aquatic races, the ability to send and hear infrasound frequencies enables them to communicate over hundreds of kilometers underwater. Infrasound can be detected and interfered with by special equipment.

Ultrasound Echolocation is the ability to send ultrasound pulses (very high frequencies above human hearing) and detect the reflected pulses as they bounce off surfaces. This is the process used by terrestrial bats and dolphins for hunting and navigation. Characters with Ultrasound Echolocation have a range of 0.5 km in air and 1 km in water. Their brains interpret the pulses as a three-dimensional image. Note that ultrasound pulses can be detected and interfered with by special equipment.

Other Exotic Senses

While humans have smell, taste, and touch to complete their repertoire of senses, other races have developed more exotic senses such as Heat Sense, Heat Vision, Magnetic Sense, and Electrical Sense.

Characters with Heat Sense are able to detect the presence of creatures and objects, which have temperatures higher or lower than the surroundings. Range is limited to up to 10m.

Characters with Heat Vision have more effective "heat pits" (like terrestrial pit vipers but better) or even eyes tuned to infrared wavelengths. They can see the world as a mosaic of hot and cold regions, identifying anything that is even a fraction of a degree above or below ambient temperature.

Characters with Magnetic Sense are able to detect magnetic fields. Some species (such as terrestrial birds) can use this as an internal compass to orient themselves on the sun. Magnetic Sense gives a +20 bonus to Navigation on worlds with a magnetic field.

Electrical Sense allows characters to perceive electricity, whether it is the electrical fields generated by equipment or the electrical impulses in living creatures. These characters can "see" the patterns of the fields and impulses. This ability provides a +10 bonus to any maneuvers where direct observation of the electrical field would be useful (e.g. Engineering to repair electrical devices, Electronic Bypass, Demolitions for spotting the live wires, etc.) and may make Perception maneuvers to locate hidden individuals or objects by spotting their electrical fields. Range is normally limited to 5m.

Sensors, Scanners and Countermeasures

Personal Scanners

Information can be vital to the survival of adventuresome PCs, and a variety of devices exist to obtain and analyze data on their behalf. Utilizing the same principles as the sensor suites that serve as automatic sentries in the homes and premises of the wealthy, personal scanners have the advantage of being handheld portable devices. Bioscanners, Chemanalyzers, DNA Scanners, Medical Scanners, Palm Print Analyzers, Poison Sniffers, Radiation Detectors, Retinal Scanners, Tactical Scanners, and Techscanners all have their place. Descriptions of what information each item can provide, their ranges, and the time to complete a scan are given in the respective entries of the Equipment chapter. The mechanics of using them will be explained later in this section.

Sensor Suites and Systems

Planetary vehicles, particularly military and scientific craft, need sensors with a greater range than handheld scanners. Compared to starships and space stations, most planet-based vehicles are relatively small and lack the volume required for large Sensor Systems. Instead they are equipped with Sensor Suites whose ranges are limited by line-of-sight obstructions, atmospheric disturbances and planetary curvature.

Starships, space stations, orbital habitats and the ground-based installations of the military and megacorporations boast complex sensor arrays, capable of detecting electromagnetic radiation in most or all portions of the spectrum, gravity waves, and other phenomena at great distances. The lightspeed limit means that the sensors perform as passive detectors except at very close ranges. Active sensing, where signals are emitted towards a target and the reflected patterns and/or particles are later retrieved, is reserved for ranges on the order of a few light-seconds (300,000km) and for automated sensing arrays providing long-term data for patient scientists. Within the confines of a planetary atmosphere or when landed on a world, Sensor Systems are considered "planetbound", where their effective range is essentially line of-sight to the horizon and depends on planetary curvature and the elevation of the sensor array above sea level.

Sensor Suites and Sensor Systems can perform a variety of detection tasks, which can be grouped according to the targets sensed. Sensor Suites can be used for Biological and Construct Analysis. Sensor Systems can be used for

Biological, Construct, Planetary and Stellar Analysis.

Biological Sensor Systems and Sensor Suites can perform Biological Analysis to detect the presence of life, determine approximate populations of large or widespread creatures, and obtain very general information on identified species. More specific information (i.e. Body Structure, Health, and Diet) requires the use of handheld bioscanners or medical scanners.

Construct Analysis (by Construct Sensor Suites and Systems) is used to detect natural and artificial structures, such as vehicles and buildings. Power emanations, electromagnetic radiation, construct components (weapons systems, drives, etc.), and the physical structure can all be collected or identified. World-sized constructs such as asteroidal bubbleworlds, Ring City around Earth, Ringworlds, and Dyson Spheres can also be found by Stellar Analysis.

Planetary Analysis provides gross detail on the atmosphere, geology, oceanography and geography of a studied planet. Planetary Analysis normally requires at least one complete orbit of the world under scrutiny and so takes much longer than the usual one minute for other tasks.

Stellar Analysis is the observation of stars and the location of associated planets, moons, and asteroids. It is also used to locate the major Lagrange Points and gravity waves.

Sensor analysis tasks usually require one minute to complete.

Using Scanners and Sensors

Successfully using a scanner or sensor suite/system requires a maneuver roll by the character. The appropriate skill depends on the type of scanner or sensor. The distance between the scanning device and the target will impose range penalties; likewise intervening barriers (such as a brick wall or a layer of lead) will shield the target, also represented as penalties to the maneuver. Narrowing the scan either in terms of information sought or area scanned will give a bonus to the maneuver. If the maneuver roll is a success (i.e. a result of 101 or more), then basic information will be obtained. If the roll succeeds by more than the minimum, further information may be obtained.

Scanner and Sensor Skills

Using a medical scanner is resolved as a Hard First Aid or Medium Medical Practice All-or-Nothing skill maneuver for Medical Scanners (owing to the specialist knowledge required to interpret their results).

All other scanners require a Medium All-or-Nothing Machine Operation: Scanners maneuver is required.

All Sensor Suites and Sensor Systems require a Medium All-or-Nothing Signaling: Scanners and Countermeasures maneuver.

Personal Scanner Ranges

Personal scanners have relatively limited ranges at which they are fully effective. Beyond this, their efficacy degrades quickly. Each scanner has a characteristic Range Increment (RI). For each full Range Increment that the target is from the scanner, the scanning maneuver is modified by –10 up to five range increments. For each range increment beyond the fifth, the penalty is doubled. A Range Increment of Touch means that the scanner must actually be touching the target to be scanned or be used within a few centimetres of the target.

Table 9.11 Scanner Ranges

Scanner	Range Increments		
	Early	Mature	Advanced
Bioscanner	10m	20m	40m
Cashcard Scanner	Touch	1m	2m
Chemanalyzer	Touch	1m	2m
DNA Scanner	Touch	Touch	Touch
Electronic Surv. Detector	5m	10m	20m
Medical Scanner	1m	2m	4m
Palm Print Analyzer	Touch	Touch	1m
Poison Sniffer	1m	1m	2m
Radiation Detector	10m	20m	40m
Retinal Scanner	Touch	Touch	Touch
Tactical Scanner	10m	20m	40m
Techscanner	1m	2m	4m

Example: *Using a Mature Electronic Surveillance Detector (with a Range Increment of 10m), Inspector Thornhill has the following modifiers due to range on his scanning maneuvers:*

0m-10m: +0 (RI 0)
11m-20m: -10 (RI 1)
21m-30m: -20 (RI 2)
31m-40m: -30 (RI 3)
41m-50m: -40 (RI 4)
51m-60m: -50 (RI 5)
61m-70m: -100 (RI 6)
71m-80m: -200 (RI 7)

Sensor Suite and Sensor System Ranges

Sensor Suites and Sensor Systems are effective over much longer ranges. Each suite and system has a characteristic Range Increment (RI). For each full Range Increment that the target is from the sensor, the sensing maneuver is modified by –10 up to five range increments. For each range increment beyond the fifth, the penalty is doubled. The Range Increments for different technological stages are given in the table below (1 light second = 300,000 km, 1 astronomical unit (au) = 150,000,000 km or 500 light seconds).

Table 9.12 Sensor Ranges			
	Range Increments		
Type	Early	Mature	Advanced
Biological Sensor Suite	0.5 km	1 km	2 km
Construct Sensor Suite	1 km	2 km	5 km
Biological Sensor System	0.5 Light Seconds	1 Light Second	2 Light Seconds
Construct Sensor System	0.5 Light Seconds	1 Light Second	2 Light Seconds
Planetary Sensor System	1 Light Second	2 Light Seconds	5 Light Seconds
Stellar Sensor System	5 au	10 au	20 au

When one of these suites or systems is "planetbound", i.e. landed on the surface of a world or in an atmosphere, the maximum range will be the distance to the horizon, which can be determined by the following equation:

$$d = \sqrt{(2Rh+h^2)}$$

where d is the distance to the horizon, R is the radius of the planet and h is the elevation of the observer (person's eyes, sensor suite, etc.) above "sea level". If the elevation is small compared to the planetary radius, then the h squared term can be ignored. If you are computing the "horizon" for an orbiting satellite or the world is a small asteroid, then use the h squared term.

Example: *An observation station has been established on a mountain on a newly discovered world. The radius of the planet is 7,000 km. The observation station is at an elevation of 5 km above sea level. This is tiny compared to the planetary radius, so the distance to horizon is the square root of 70,000 (2 x 7,000 x 5), or 264.5 km.*

Material Shielding

Intervening barriers between a scanner or sensor and its target may partially or completely prevent information being acquired about the target. The degree of obscuration depends both on the sensor type and the nature of the barrier. For instance, an optical telescope camera mounted on an orbiting reconnaissance satellite will be unable to see inside buildings when using visible light and may not even be able to see the buildings at all if there is sufficient cloud cover. Using infrared imaging and thermal imaging, the same spy satellite will be able to penetrate the cloud cover and possibly detect isolated hot spots that might be generators, moving vehicles, even people with sufficient resolution. Active scanning methods such as ground-penetrating radar can project microwave pulses into the ground, producing an image of the subsurface revealing buried objects, voids, and changes in material. Perversely such radar is better at seeing through concrete than it is through moist and clay soils.

SysOps will need to apply common sense when considering the effect of barriers on scanning tasks. Visible light scans will be blocked by anything that isn't transparent or translucent. For other portions of the electromagnetic spectrum (infrared, microwave, X-ray), the following table of suggested penalties for intervening materials versus scanners and sensor suites may be used:

Table 9.13 Material Modifiers			
Material	Scanner	Sensor Suite	Sensor System
Water	-5 per 10cm	-5 per 1m	-5 per 5m
Glass	-5 per 10cm	-5 per 1m	-5 per 5m
Paper	-5 per 10cm	-5 per 1m	-5 per 5m
Cardboard	-10 per 10cm	-10 per 1m	-10 per 5m
Plastic	-10 per 10cm	-10 per 1m	-10 per 5m
Soil	-10 per 10cm	-10 per 1m	-10 per 5m
Wood	-10 per 10cm	-10 per 1m	-10 per 5m
Fiberglass	-15 per 10cm	-15 per 1m	-15 per 5m
Brick	-15 per 10cm	-15 per 1m	-15 per 5m
Concrete	-20 per 10cm	-20 per 1m	-20 per 5m
Stone	-20 per 10cm	-20 per 1m	-20 per 5m
Iron	-25 per 10cm	-25 per 1m	-25 per 5m
Steel	-25 per 10cm	-25 per 1m	-25 per 5m
Starship hullmetal	-30 per 10cm	-30 per 1m	-30 per 5m
Lead	-40 per 10cm	-40 per 1m	-40 per 5m
Magneto-grav shield	-40	-40	-40
Planetary Atmosphere	N/A	N/A	-20 to -60

For Early technology, halve the material thickness required to incur the listed penalty. For Advanced technology, double the material thickness required to incur the listed penalty. Note the Planetary Atmosphere penalty is applied when using a Sensor System to scan for

something through an entire planetary atmosphere – use –40 for an Earthlike atmosphere, -20 for a more rarified atmosphere (like preterraformed Mars) and –60 for denser or more exotic atmospheres (such as preterraformed Venus).

Example: *Inspector Thornhill is trying to determine if there are any hidden recording devices on a playboy's yacht. The yacht is made of fiberglass with partitions and internal hull structures up to 10 cm thick in places. Thornhill's scans will suffer a –15 shielding penalty to detecting listening devices hidden by the fiberglass supports.*

Focused Scanning and Sensing

A character can choose to narrow his scanning or sensing attempts in order to focus his efforts on a much smaller area, e.g. Inspector Thornhill could choose to only scan part of the playboy's cabin. The character receives a +20 bonus to the maneuver roll. The downside is that if the information is to be found elsewhere, e.g. the listening devices were fitted to the cabin door and the Inspector only checked the light fittings, then a successful maneuver won't reveal that information.

Similarly a character can choose to only look for one type of information, e.g. a physician might perform a medical scan purely to find out if a patient was afflicted with a particular disease and not be interested in checking for broken bones or other injuries. A character who narrows the search this way also receives a +20 bonus to the maneuver roll. The disadvantage is that even if the maneuver is successful, the character will only find out the particular information that he was specifically looking for, instead of other facts that are easier for a scan to discern.

Other Factors

The SysOp may choose to apply other bonuses or penalties according to circumstances. DNA evidence may be degraded over time, biological samples may be contaminated by exposure to nonsterile environments, devices may be deliberately constructed to emit minimal electromagnetic radiation, etc.

Putting It All Together

The resolution of the scanning maneuver is as follows:

d100 (open-ended roll)

- + one of Machine Operation: scanners, Medical Practice, First Aid, or Signaling skill bonus
  - degree difficulty (this is –20 if using First Aid, otherwise 0)
  - range penalty
  - material shielding penalty
- + 20 (if scan is focused in a particular area/volume)
- + 20 (if scan is limited to one specific type of information/signal)
  - any miscellaneous factors

As with all All-or-Nothing skill maneuvers, a final result after all modifications of 101 or more constitutes a success. If the character achieves a higher final result, the scan may produce additional information. Consult the appropriate table below for the scanning device and match the maneuver result with the target numbers. If the maneuver result is equal to or exceeds the target number, then the character obtains the all the listed information. The only exception to this is if a character has chosen to limit a scan to a particular type of information or signal – in this case, the character obtains **only** that information and only if the maneuver result equals or exceeds the specific target number.

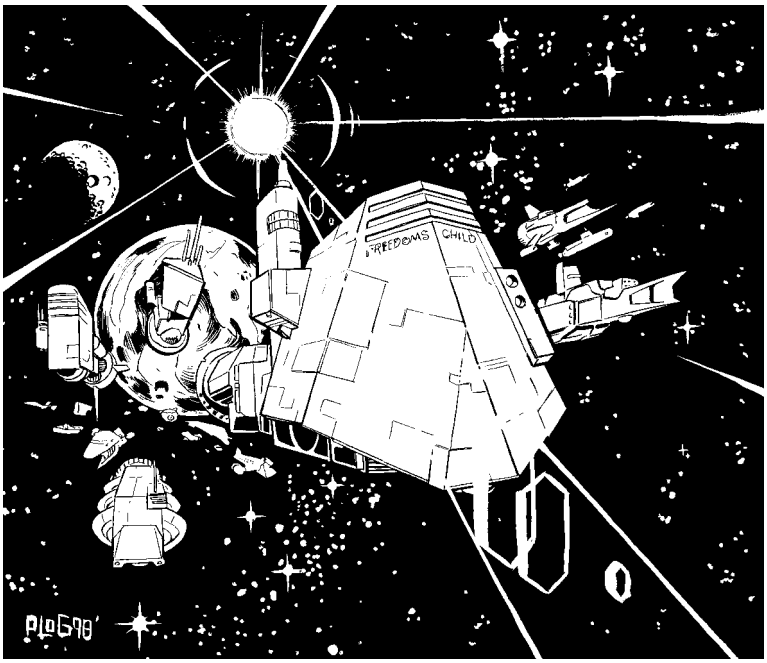


Table 9.14 Scanner Functions		
Task	**Target Number**	**Note**
Bioscanner		
Detect Lifeforms	101	Must be of known type and size must be Medium or larger
Detect Lifeforms	121	Must be of known type and size must be Small or larger
Detect Lifeforms	141	Must be of known type and size must be Tiny or larger
Detect Lifeforms	161	Must be of known type – microbial life can be detected
Determine Bio-Kingdom	101/121/141/161	Flora/Fauna/Fungi/etc. Target number varies according to size: Medium or larger / Small / Tiny / Microbial
Determine Distribution	121/141/161/181	Must have data on life form. Target number varies according to size: Medium or larger / Small / Tiny / Microbial
Determine Chemical Base	121/141/161/181	Must be of a known type Target number varies according to size: Medium or larger / Small / Tiny / Microbial
Determine Body Shape/Size	111/131/151/171	Target number varies according to size: Medium or larger/Small/Tiny/Microbial
Determine Body Temp	111/131/151/171	Target number varies according to size: Medium or larger/Small/Tiny/Microbial
Determine Body Structure	121/141/161/181	Skeleton/Organs; Target number varies according to size: Medium or larger/Small/Tiny/Microbial
Determine Health	141/161/181/201	Must have physiological data; Target number varies according to size: Medium or larger/Small/Tiny/Microbial
Determine Diet	141/161/181/201	From waste matter in body; Target number varies according to size: Medium or larger/Small/Tiny/Microbial
Cashcard Scanner		
Read a cashcard	101	Must be of known/recognised type
Chemanalyzer		
Perform elemental analysis (5%)	101	Must be of known elements – can only identify concentrations of 5% or higher
Perform elemental analysis (1%)	121	Must be of known elements – can only identify concentrations of 1% or higher
Perform elemental analysis (0.1%)	141	Must be of known elements – can only identify concentrations of 5% or higher
Perform isotopic analysis	121	Must be of known isotopes of elements and identified constituents
Perform molecular analysis (5%)	121	Can identify specific known compounds within material at concentrations of 5% or higher
Perform molecular analysis (1%)	141	Can identify specific known compounds within material at concentrations of 1% or higher
Perform molecular analysis (0.1%)	161	Can identify specific known compounds within material at concentrations of 0.1% or higher
DNA Scanner		
Read/record a DNA pattern	101	Must be of a known type of DNA or equivalent
Electronic Surveillance Detector		
Detect power emanation (normal)	101	From a power minicell or larger
Detect power emanation (miniature)	121	From non-microscopic power cells or electromagnetic fields associated with cabling/wiring
Detect power emanation	161	From nanotech devices
Detect transmission	121	Radio and similar wireless communications

Table 9.14 Scanner Functions

Task	Target Number	Note
Medical Scanner		
Identify external wounds	101	Open cuts, burns, frostbite, etc. Must have species-specific database
Detect external abnormalities	101	Can detect variations from species-normal and identify if in database. Must have species-specific database (e.g. extra fingers, etc.)
Identify skeletal injuries	121	Must have species-specific database
Identify tissue injuries	141	Includes muscles, tendons and blood vesels. Must have species-specific database
Identify organ and internal injuries	141	Must have species-specific database
Identify nerve injuries	141	Must have species-specific database
Identify brain injuries	161	Must have species-specific database
Identify genetic issues	121	Must have species-specific database
Identify infections	141	Includes known bacteria, viruses, and prions. Must have species-specific database
Identify internal abnormalities (e.g. extra organs, etc.)	141	Can detect variations from species-normal and identify if in database. Must have species-specific database
Palm Print Analyzer		
Read/record finger/palm prints	101	Reading/recording actual fingers and/or palms
Read/record finger/palm prints	121	Recording actual palmprints and fingerprints left on surfaces
Poison Sniffer		
Detect chemical toxin (5%)	101	Must be of a known type and present at 5% or greater concentration
Detect chemical toxin (1%)	121	Must be of a known type and present at 1% or greaterconcentration
Detect chemical toxin (0.1%)	141	Must be of a known type and present at 0.1% or greaterconcentration
Detect biological toxin (1%)	121	Must be of a known type and present at 1% or greater concentration
Detect biological toxin (0.1%)	141	Must be of a known type and present at 0.1% or greaterconcentration
Detect biological toxin	161	Must be of a known type and present at any dangerous concentration
Radiation Detector		
Detect radiation	101	Amount and type of radiation
Retinal Scanner		
Read/record a retinal pattern	101	Must be of a known retinal type or equivalent
Tactical Scanner		
Overlay schematics/maps	101	Must be downloaded into scanner
Overlay friend-or-foe ids	101	Friend-or-Foe identification must be available and match downloaded records
Detect lifeforms	101	Must be Medum or larger size
Detect lifeforms	121	Must be Small or larger size
Detect lifeforms	141	Must be Tiny or larger size
Techscanner		
Detect power emanation (normal)	101	From a power minicell or larger
Detect power emanation (miniature)	121	From non-microscopic power cells or electromagnetic fields associated with cabling/wiring
Detect power emanation	161	From nanotech devices
Perform elemental analysis (5%)	101	Must be of known elements – can only identify concentrations of 5% or higher
Perform elemental analysis (1%)	121	Must be of known elements – can only identify concentrations of 1% or higher
Trace circuit (millimeter)	101	Circuit must be on millimeter or larger scale
Trace circuit (microns)	141	Circuit must be on micron scale
Trace circuit (nano)	181	Circuit must be on nanometer scale

Table 9.15 Sensor Functions		
Task	**Target Number**	**Notes**
Biological Analysis (Sensor Suite/Sensor System)		
Detect Lifeforms	101	Must be of known type and size must be Large or Huge
Detect Lifeforms	121	Must be of known type and size must be Medium or larger
Detect Lifeforms	141	Must be of known type and size must be Small or larger
Detect Lifeforms	161	Must be of known type and size must be Tiny or larger
Determine Bio-Kingdom	101/121/141/161	Flora/Fauna/Fungi; Target number varies according to size: Large or Huge/Medium/Small/Tiny
Determine Distribution	121/141/161/181	Must have data on life form; Target number varies according to size: Large or Huge/Medium/Small/Tiny
Determine Chemical Base	121/141/161/181	Must be of a known type; Target number varies according to size: Large or Huge/Medium/Small/Tiny
Determine Body Shape/Size	111/131/151/171	Target number varies according to size: Large or Huge/Medium/Small/Tiny
Determine Body Temp	111/131/151/171	Target number varies according to size: Large or Huge/Medium/Small/Tiny
Construct Analysis (Sensor Suite/Sensor System)		
Artificial or Antigravity Field	141	Determines gravity level and extent
Atomic Structure	141	Known Elements
Communication: Civic	101	Includes Band/Frequency and interception of communication signal
Communication: Personal	141	
Communication: Vehicle	121	
Computer Complexity	161	
Damage / Integrity	121	Determine if construct retains its integrity and/or level of damage
Drive	141	Includes acceleration and maneuvering capabilities
Detect Electronic Warfare	161	
Analyze Electronic Warfare	181	
Fuel	181	Determine type and amount
Detect Missiles and Torpedoes	121	Known "type" only
Analyze Missiles and Torpedoes	181	Known "make" only
Molecular Analysis	121	Known Alloys and Compounds
Detect Open Spaces	101	Bays, Holds, Crew Modules
Power Use: Civic	101	Determines type of energy supply
Power Use: Personal	121	
Power Use: Vehicle	101	
Detect Sensors	141	
Detect Shields	121	
Silhouette	101	Identifies external shape of construct
Structure	121	Identifies internal structure of construct
Detect Weapons	121	Vehicle size or larger
Analyze Weapons	141	On or off-line

Table 9.15 Sensor Functions		
Task	**Target Number**	**Notes**
Planetary Analysis (Sensor System)		
Atmospheric Makeup	121	Known compounds/gases
Climate	141	Requires a complete planetary orbit
Mean Planetary Density	121	
Geological Makeup	161	Known elements/ores
Gravity/Escape Velocity	101	
Hydrosphere	101	Requires a complete planetary orbit
Meteorological Patterns	141	Requires a complete planetary orbit
Planetary Circumference	101	
Precipitation	121	Requires a complete planetary orbit
Rotation Period	101	
Mean Surface Temperature	121	
Current Surface Temperature	101	
Visual Display of Area	101	
Stellar Analysis (Sensor System)		
Locate Asteroid Belt	121	
Estimate number of asteroids	141	
Locate Specific Asteroid	161	
Locate Planet	121	
Locate Stellar Ecosphere	121	By Species
Locate Moons	121	
Locate Major Lagrange Points	121	
Locate Empty Orbit	141	
Determine Orbital Period	121	
Locate Star	101	
Locate Black Hole	101	
Locate Gravity Distortion	181	
Analyze Gravity Distortion	201	Can be used to identify where a starship is heading as it enters hyperspace
Star' s Spectral Type	101	
Star' s Stellar Brightness	101	
Star' s Stellar Class	101	
Star' s Stellar Mass	101	
Star' s Stellar Radius	101	
Star' s Stellar Temperature	101	

Example: *The crew of the Faffin' Around have captured Carlos Vicenza, a megacorp boss suspected of being responsible for supplying warships to space pirates. They have reason to believe that Vicenza may have unusual cyberware or other augmentation. Dack decides that he will perform a medical scan on Vicenza, looking only for deviations from human norms (giving a +20 bonus). Dack has a Medical Practice skill of 68. Dack's player rolls 51. As Dack conducts his scan within touching distance of Vicenza, there are no range penalties and no intervening barriers, so no shielding penalties. The result is 51 (roll) + 68 (Medical Practice) + 0 (no range penalties) + 0 (no shielding penalties) +20 (limited scan) equals 139. The SysOp consults the Handheld Scanners table for Medical Scanners. 139 exceeds the 101 target for external abnormalities. It is 2 short of the 141 target for internal differences from human norms. Although 139 is also enough to beat the targets for external injuries, skeletal damage, and genetic issues, the scanner won't report on these because the scan was focused on abnormalities only. The SysOp informs Dack's player that Vicenza has a subdermal pouch whose opening is masquerading as a appendectomy scar, but the scanner has not detected any cyberware.*

Example: *Mungo is exploring the tunnels of a ruined Madji city. He has a combined Bioscanner/Tactical Scanner, which he is currently running in Tactical mode. He runs a tactical scan of the area, attempting a 40-meter radius sweep. Tactical scanners have a 20m Range Increment, so 40m is Range Increment 1, so –10 penalty. The SysOp rules that there are multiple intervening brick walls (-15 for 10cm of brick), so the SysOp rules this will constitute a –30 penalty. Mungo isn't focusing or limiting his scan, so no bonuses. Mungo's player rolls the dice getting 72, plus 75 (Machine Operation: scanners) – 10 (range) –30 (shielding), yielding 107. That's greater than 101, so his scanner displays his position, his teammates's positions, and the location of several unknown medium-sized creatures approaching slowly from a side tunnel. Mungo switches to Bioscanner mode and makes a focused scan in the area of the creatures. The new result is 80, plus 75 (Machine Operation: scanners) – 10 (range) –30 (shielding) + 20 (focused scan), yielding 131. That's more than enough to exceed both the 101, 111, and 121 target numbers, and just enough to hit the 131 target. Beating the 101 target means that the scanner picks up the medium-sized creatures previously detected and that they are animals. Beating the 111 target reveals their body temperature and a reasonable image of their body shape. Beating the 121 target means that the scanner also picks up the presence of several smaller specimens, identifies their chemical base, and the (exo)skeletal body structure of all the larger animals. Meeting the 131 target reveals that the smaller lifeforms have the same body shape and temperature as their larger counterparts. Mungo's player decides to make a quick Biology maneuver, succeeds and positively identifies the creatures as shadowcrawlers, an indigenous species of aggressive omnivorous scavengers that look like giant armored centipedes. He signals to his team to ready their blasters.*

Sensing Vs Countermeasures

The actual mechanics of making a sensor scan depends on whether anyone or anything is attempting to counter the scan.

Unopposed Scanning: If there are neither active nor passive countermeasures in use, the rules as presented above are used to resolve the scanning attempt.

Passive Defense: Spacecraft, in particular, are often designed with electronic warfare countermeasures. If operated in the passive mode, the Electronic Warfare Rating is applied as an additional negative modifier to the scanning maneuver.

Example: *The Faffin' Around is pursuing an unidentified ship at a distance of 800,000 km (or 2.66 Light Seconds). The crew decides to scan the other craft to identify it by its silhouette. Weaver's player makes a Signaling maneuver, rolling 83 on the dice, adding 60 for skill, subtracting 20 for being at Range Increment 2, subtracting 40 because the other ship has its magneto-gravitic shield up, a further 20 (as the other ship is using passive countermeasures and has a EW Rating of 20), but adding 20 for focusing only on the detected ship and a further +20 for limiting the scan to silhouette only. The total is 103, 83(toll) +60 (skill) –20 (range) –40 (shielding) –20 (EW Rating) +20 (focus) +20 (limited), just enough to succeed by beating the target number of 101. An image of the Silhouette is captured and quickly identified as that of a Silth gunboat.*

Active Defense: The traditional alternative to passive defense is to use active electronic countermeasures, deliberately generating high intensity signals to interfere with scans and mask the actual signature. This technique is not subtle – anyone with an antenna pointing in the right general direction will know that something is there. However, it should be difficult to pinpoint the source or derive any information about it.

This method is resolved as follows: The communications officer of the vessel that wishes to avoid being scanned makes a Signaling maneuver, adding the vehicle's EW Rating, and looks up the result on the Bonus column

of the Maneuver Table. The result is then applied as a negative penalty to the scanner's maneuver (in place of the passive EW Rating). Note that if the result from the Bonus column is actually a negative number, then this becomes a bonus to the scanning maneuver.

Example: *The Silth gunboat has fled the Faffin' Around and is about to enter hyperspace. Their communications officer uses active countermeasures to obscure their gravitational wake and prevent the Faffin' Around identifying their destination. The SysOp rolls a miserable 8, adds 50 for skill and 20 for EW Rating, for a total of 78. Consulting the Bonus column, this is a result of –15, which means Weaver will receive a +15 bonus to her scanning maneuver. Weaver attempts to analyze the gunboat's gravity distortion, focusing solely on that vessel (+20 bonus) and limiting her scan to gravity distortions (+20 bonus). Range is now a million kilometers, which is well within Range Increment 0 for Stellar Analysis (so +0) and the gunboat still has shields up (-40). The roll is 92 + 60 (skill) +0 (range) –40 (shielding) +15 (messed up active defense) + 20 (focus) +20 (limited) = 167. The target number is 201, so 167 is not enough to identify where the gunboat plans to exit hyperspace. The Silth gunboat enters hyperspace and escapes.*

Silent Running: Another method of avoiding detection is enter "silent running" mode. This involves switching off engines and powering down all nonessential systems, like weapons, shields, and artificial gravity (-60 penalty to all scanning attempts). In extremis, some crews will climb into their spacesuits and shut down life support (-100 penalty to all scanning attempts). This makes it much harder to locate, but it is not foolproof as an optical telescope might spot a vessel (painting the hull black actually hinders you if your ship is blocking off light from well-known stars.) If discovered, a powered down starship is in obvious trouble.

Holographic Camouflage: This technology enables ships to generate a holographic field to conceal them from visual identification on the surface of a world by disguising the ship as a typical terrain feature, such as a hillock, sand dune, rocky atoll, etc., or even "invisible". This gives a –100 modifier to all Perception and visual observations to spot the camouflaged vehicle. Holographic camouflage is unusable when a craft is moving and members of advanced civilizations will have equipment to detect power emanations.

Magneto-gravitic Cloaking: The magneto-gravitic shield can protect against physical and energy attacks. In normal operation, the frequencies of the shield are cycled so that the spaceship can send and receive signals without perceptible diminishment of quality. The shield can be operated in a total mode where all electromagnetic radiation is simply absorbed. Nothing passes in, nothing passes out. It is *almost* the perfect cloaking mechanism. An active shield does use magneto-gravitic principles and its presence can be deduced from the gravity waves generated. Any craft wrapped in a magneto-gravitic cloak has its Shield Rating doubled, and can only be detected gravitationally (increase the shielding penalty from -40 to -80), but any piloting is at –100 (because it really is blind) and it is unable to communicate with or scan beyond the shield. Some starship crew have likened raising the cloak to climbing into a private black hole and hoping the universe will go away while you wait.

Special Combat Conditions

Combat is a chaotic environment. Weather, visibility, terrain, and random events all have an effect on the outcome of any battle. It is impossible to anticipate every possible variable condition that can occur during a combat, but the following section explains how to handle the most common situations.

Table 9.16 Terrain versus Combat Table

Terrain Condition	OB Mod	DB Mod
Heavy brush or thicket	-10	NA
Light brush or forest	-5	NA
Ice on ground	-5	NA
Knee-deep snow, water, or soft sand	-10	1/2 Quickness Bonus
Waist-deep snow or water*	-20	Negates Quickness Bonus
Shoulder-deep snow or water*	-50	Negates Quickness Bonus

* While crossing water or snow this deep, a character will not be able to perform Martial Arts Sweeps, kicks, or any maneuvers that require low attacks or use of the legs.

Limited Visibility

Combats do not always take place with adequate visibility. Darkness, fog, rain, and the like can make it difficult to attack opponents and defend yourself. Combat modifiers are cumulative, so if your character is fighting in moderate rain with light fog, the effects for each are combined. The following condition descriptions give vision ranges based upon normal vision.

Full to half moon: A –5 OB to all attacks. Visibility is reduced to 50m and any shots fired at a greater distance are considered blind fire.

Less than half full: A –10 OB to all attacks. Visibility is reduced to 25m and any shots fired at a greater distance are considered blind fire.

Starlight, new moon, or heavy clouds blocking moonlight: A -20 OB to all attacks. Visibility is reduced to 10m. All ranged attacks at targets beyond 10m are considered blind fire.

Light fog: Visibility up to 15m. A -5 OB to ranged weapons.

Moderate fog: Visibility up to 8m. A -10 OB to ranged weapons.

Heavy fog: Visibility to 3m. All ranged attacks beyond 3m considered blind fire.

Light rain: A -5 modifier to all Maneuver Rolls and Attack Rolls.

Moderate rain: A -10 modifier to all Maneuver Rolls and Attack Rolls. All fumble ranges are increased by 2 points (i.e. fumble range of 01-04 is now 01-06). Visibility is restricted to 50m or less. All ranged attacks beyond that are considered blind fire.

Heavy rain: A -20 modifier to all Maneuver Rolls and Attack Rolls. Fumble ranges are increased by 3 points (i.e. fumble range of 01-04 is now 01-07). Visibility is restricted to 25m or less. All ranged attacks beyond that are considered blind fire.

Light snow or flurries: A -5 modifier to all Maneuver Rolls and Attack Rolls.

Moderate snow: A -10 modifier to all Maneuver Rolls and Attack Rolls. All fumble ranges are increased by 2 points. Visibility is restricted to 25m. All ranged attacks beyond that are considered blind fire.

Heavy snow: A -20 modifier to all Maneuver Rolls and Attack Rolls. Fumble ranges are increased by 3 points. Visibility is restricted to 10m or less. All ranged attacks beyond that are considered blind fire.

Gun flashes: If a shooter uses a projectile firearm without a flash suppressor, the shooter suffers a –50 penalty (moonlight, starlight, darkness) to all Attack Rolls and all Maneuver Rolls (requiring vision) for the round immediately after firing.

Example: *Aaron has hidden himself in the branches of a sargassan tree. It is nighttime (full moon) and there is heavy rain and a light fog. These three factors are combined for the following effects: Light fog restricts the visibility to 15m (you can't combine visibility distances, so you use the more severe effect). Ranged attacks have a -30 OB modifier (-20 for rain, -5 for fog, -5 for moonlight) and any missile fire beyond 25m is considered blind fire. Melee attacks are at -25 (-20 for rain, -5 for moonlight) and the fumble range is increased by 3 points.*

Fighting "Blind"

As visibility decreases, the situation often arises that attacks are considered "blind fire." When a character cannot see his target, he receives a -100 to all attacks. This modifier can be offset with the use of the skill Blindfighting. By using the Blindfighting skill, this modifier is reduced by his bonus with this style automatically without a Maneuver Roll. (i.e. a total skill bonus of 80 means that the -100 modifier is reduced to -20 (-100 +80)). This skill can only reduce the -100 penalty for being blind to zero. The SysOp may determine that conditions are not optimum for use of this skill and require that a difficulty modifier be applied against the skill. (i.e. a many confusing noises in the area may make Blindfighting a Very Hard task, so the SysOp assigns the Very Hard modifier (-40) to the use of this skill. This means that this skill bonus has the -40 applied to it prior to the skill bonus being applied to the -100 for being blind.)

Fighting Underwater

Fighting underwater is a difficult business as water impedes easy movement and renders many weapons ineffective, the lighting conditions are poor, and the battlefield is a three-dimensional arena. Characters who aren't adapted to breathe water or failed to equip themselves with breathing gear will have to fight and hold their breath simultaneously.

Holding One's Breath: Characters can hold their breath underwater during combat for 3 rounds per positive Constitution modifier point, i.e. a character with a +2 Co stat bonus can hold their breath for six rounds (+2 x 3). Characters with negative Constitution bonuses can hold their breath in underwater combat for 1 round; those with a zero Constitution bonus can manage 2 rounds. Any character still underwater must then make Stamina Resistance Rolls as described in the subsection on Drowning or drown.

Combat Modifiers: In terms of melee combat, only piercing weapons (those using the Puncture Table) and nets can be used effectively, but they still suffer a –20 modifier. All other melee weapons suffer a –50 modifier. Archaic missile weapons, electroguns, lasers, flamers, and firearms do not function underwater. In particular, lasers and flamers simply boil the water closest to the firer. Sonic weapons and needle weapons function normally, if designed for total immersion in water (x2 cost).

When parrying with a melee weapon, the character only receives half the normal Defensive Bonus (i.e. a character who parries with 50 points of OB only gains 25 to DB.) The Defensive Bonus from shields is halved due to difficulty of moving them. All Defensive Bonuses from other sources, e.g. Quickness bonuses, armor design or material, etc. is also halved.

Movement and Initiative: Characters moving underwater have to swim, so their Initiative is reduced by –10 and they forfeit any Quickness bonuses to DB. Dodge, Sudden Dive, and Sudden Dodge Combat Actions all suffer –20 modifiers to their respective maneuvers. Characters evolved for aquatic environments do not suffer these penalties.

Fighting on Water

Combat on board marine craft is significantly easier than fighting underwater. Characters on powered vessels such as hydrofoils and speedboats are more insulated from the constant motion of the water than those on sail-powered or oar-powered craft. Larger vessels of either kind are more stable. The tables below gives modifiers to maneuvers based on ship size, ship type and sea conditions. These modifiers affect all Quickness and Agility-based maneuvers and are cumulative.

Table 9.17 Maritime Maneuver Modifiers

Ship Type and Size	Maneuver Modifier
Unpowered Small (6m long or less)	Extremely Hard
Unpowered Medium (7m to 16m long)	Very Hard
Unpowered Large (17m or longer)	Hard
Powered Small (6m long or less)	Very Hard
Powered Medium (7m to 16m long)	Hard
Powered Large (17m or longer)	Medium

Table 9.18 Sea Conditions Modifiers

Condition	Unpowered	Powered
Anchored Vessel	-5	0
Calm Seas	-10	-5
Moderate Waves (2m or less)	-20	-10
Severe Waves (greater than 2m)	-30	-20

Example: *Jung is exploring an inland sea on a newly discovered world in the comparative safety of his speedboat. The speedboat is 12m long (resulting in Hard maneuver difficulty, -20) and the waves are only 1m high (-10), leading to a total maneuver modifier of –30.*

Occupational Hazards and Hostile Environments

Life is fragile even in the most benign environments. Adventurers faring out into the high frontier must pit their wits and their lives against unknown perils on new worlds and the unforgiving laws of nature. This section details a number of hazards that might be encountered, along with rules for handling them.

Gravity

Gravity is a force of mutual attraction between every particle and body with mass in the universe. It keeps the stars and the planets in their orbits. Gravity prevents Earth losing all of its atmosphere and people from floating off into space. Gravity is responsible for weight, the force exerted upon an object or person by being in a gravitational field. The mass of an object or person is constant; the weight varies in proportion to the strength of the gravitational field. Prolonged stays in stronger gravitational fields (higher gravity) than a character's native gravity can be life threatening; the dangers of low gravity are more insidious but equally injurious.

For the purposes of **HARP SF**, Earth's gravity of one "gee" (g) is taken as the standard gravitational field and the default for all game mechanics that are affected by gravity. In the Tintamar universe, the magneto-gravitic drive and related technologies have given the starfaring races the ability to nullify gravity ("antigravity") and create it ("artificial gravity") in localized areas.

High Gravity

There are worlds where gravity is higher than on Earth. Many of these worlds are massive gas giants, such as Jupiter and Saturn in the Solar System. Elsewhere there may be rocky worlds, like Earth, but smaller and denser. Gravitational forces or "gee" forces are also exerted on rapidly accelerating objects – thus astronauts on twentieth-century rockets effectively experienced high gravity conditions as their spacecraft ascended into space.

In high gravity conditions, everything weighs more. For living beings, this means that their hearts must work harder to circulate blood around their bodies. This stress can cause damage to the cardiovascular system, potentially leading to heart attacks. In very high gravity, the inability to force enough blood to the brain can cause loss of consciousness. Carrying objects is harder because

they weigh more. Objects fall faster and falling is more likely to result in serious injury.

Negative modifiers are applied to any character (unless in an appropriate acceleration couch or gravitic chair) who attempts any maneuver in high-gravity as follows: -5 for every 0.1g (-50 per 1g) greater than the character's native gravity.

Example: *A normal Earth human, whose native gravity is 1g, boards a Silth raider, where the artificial gravity is maintained at a steady 1.1g. The difference is 0.1, so the Earthling is at –5 to all maneuvers. The Silth troopers are just fine.*

If the character is strapped into an acceleration couch (designed to alleviate the gee forces and assist in blood circulation), then the penalty to any maneuver attempted in high gravity is –2 per every 0.1g (-20 per 1g) greater than the character's native gravity. The character will be extremely limited in terms of physical maneuvers that can be undertaken in an acceleration couch – characters with neuralware implants (see Cyberware chapter) may be able to remotely control devices. Cyberware will be covered in more detail in HARP SF Xtreme.

If the character is seated in a gravitic chair (designed to partially counter gravity) then the penalty to any maneuver attempted in high gravity is –1 per every 0.1g (-10 per 1g) greater than the character's native gravity. Of course, there are limits to the actions that can be performed while in a gravitic chair.

Example: *If our Terran explorer entered the Silth ship in his gravitic chair, then he would only be at a –1 penalty to all maneuvers. He would be a sitting duck for trigger-happy Silth, however.*

At high gravity, there is a possibility that a character will fall unconscious. In game terms, this can happen whenever the gravitational penalty is greater than –200 (i.e. more than 4 extra g for someone moving around, more than 10 extra g in an acceleration couch, more than 20g in a gravitic chair). The character must make a Stamina RR (100) every round or fall unconscious. Any penalty above –200 is applied to the Stamina RR. Once unconscious, treat the character as if he was being asphyxiated.

Example: *The Silth turn on their ultragrav trap once enough Terrans have boarded the raider. They raise the artificial gravity field to 10g. Any Terran trying to walk in that gravity is at –450, 10g – 1g = 9 extra g, which is –50 x 9. –450 is way more than –200, so a –250 modifier is applied to the Stamina RRs of the Terrans every round. Our Terran in his gravitic chair is at a mere –90, but does not need to make Stamina RRs.*

Note that the Natural Astronaut and High Gravity Training Talents can reduce the severity of these penalties. Where a character has both Talents, halve the penalties using Natural Astronaut first and then reduce whatever remains using the High Gravity Training.

Living and working in a high-gravity environment also takes its toll. For game purposes, only gravity that is at least 0.25g higher than a character's native gravity will have a long-term adverse effect.

For every week (or part of a week) spent in a high-gravity environment (at least 0.25g above native gravity) a Stamina CRR must be made.

- CRR(100): No damage
- CRR(75): Lose 1 Constitution stat point temporarily
- CRR(50): Lose 1 Constitution stat point permanently
- CRR(25): Lose 2 Constitution stat points permanently
- Failure: Lose 5 Constitution stat points permanently

For every 0.25g above native gravity, apply a –10 modifier. For taking cardiac assistance drugs (e.g. Cardiatine), apply a +20 modifier. For spending the time in a gravitic chair and/or resting in bed, apply a +30 modifier.

Temporary Constitution damage will recover naturally once the character has returned to his native gravity field.

See the subsections below on Encumbrance, Falling, and Jumping, for other issues related to high gravity.

Low Gravity

On many worlds, such as Mars and Earth's Moon, the gravitational field is weaker than on Earth. Here objects fall slower, objects can be thrown further and higher, and everything weighs less.

Characters from a stronger native gravity have an edge in low gravity because their muscles have evolved to counter a greater gravitational field. In game terms, this translates as a +5 bonus to all Strength maneuvers and skills, which use the Strength stat, for every full 0.5g difference between the low gravity field and the character's native gravity.

Example: *Martian gravity is one-third that of Earth, approximately 0.33g. Thus native Earth humans would have a +5 bonus to all Strength-based maneuvers, notably Climbing, most Combat skills, and almost all Physical skills.*

Example: *A character from a much higher gravity world, say a 2.5g world like Jupiter, would have a +20 bonus. (2.5 – 0.33 = 2.17g difference.)*

The problem with low gravity is muscle mass loss and bone mass loss. With less gravity to fight against, muscles will be exercised less, and will gradually lose tone, strength, and size. Likewise the reduced load on the skeleton leads to changes in bone density and loss of calcium. Bones become weaker and more susceptible to fracture.

For game purposes, only gravity that is at least 0.25g lower than a character's native gravity will have a long-term adverse effect. Note that zero-gravity (0 to 0.05g) has more severe effects, see below.

For every week (or part of a week) spent in a low-gravity environment a Stamina CRR must be made.

- CRR(100): No damage
- CRR(75): Lose 1 Strength and 1 Constitution stat point temporarily
- CRR(50): Lose 2 Strength and 2 Constitution stat point temporarily
- CRR(25): Lose 1 Strength and 1 Constitution stat points permanently
- Failure: Lose 2 Strength and 2 Constitution stat points permanently

For every 0.25g below native gravity, apply a –10 modifier. For taking gravity assistance drugs (e.g. Contrazeegee), apply a +20 modifier. For undertaking vigorous exercise (at least one hour per day), apply a +30 modifier.

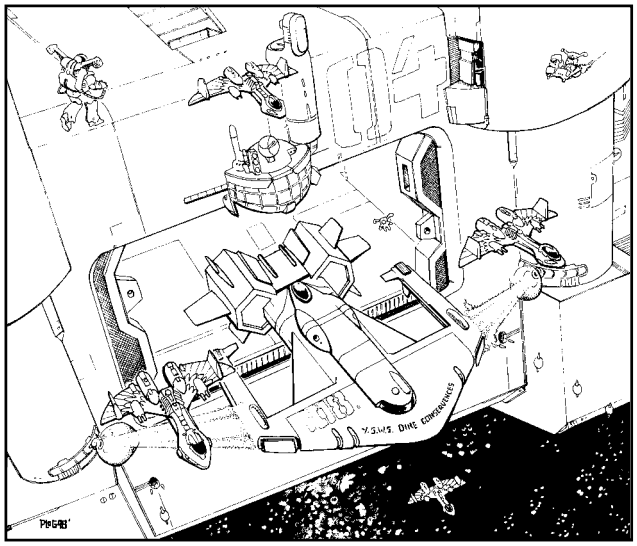
Temporary Strength and Constitution damage will recover naturally once the character has returned to his native gravity field.

Characters with the Space Adaptation Talent do **not** suffer from the adverse effects of low gravity as their bones and muscles have evolved (or been reengineered) not to change density or lose mass.

See the subsections below on Encumbrance, Falling, and Jumping, for other issues related to low gravity.

Zero and Micro Gravity

Zero gravity, or more correctly micro-gravity, is an extreme form of low gravity. It can be experienced on comets, moonlets, and the smaller asteroids, and in orbital habitats and space itself. In a zero gravity environment, everyone experiences "weightlessness", while objects float or drift rather than fall to the surface. Mass and inertia remain, however.



For game purposes, micro-gravity is any gravitational field less than 0.05g. Zero gravity is considered to be 0g.

Any character, who wishes to attempt any physical maneuver in micro-gravity or zero-gravity suffers a –75 penalty to the action or skill. This penalty may be reduced by training in the Zero-G Maneuvering skill.

Characters from a stronger native gravity have an edge in zero or micro-gravity because their muscles have evolved to counter a greater gravitational field. In game terms, this translates as a +5 bonus to all Strength maneuvers and skills, which use the Strength stat, for every full 0.5g difference between the micro-gravity field and the character's native gravity.

Micro-gravity has all of the long-term dangers associated with low gravity, except these effects occur much faster. Micro-gravity also has the short-term risk of space adaptation sickness, which induces disorientation, malaise, irritability, drowsiness, loss of motivation and infrequent bouts of sudden vomiting.

On entering a micro-gravity environment, any character who does not have the Zero-Gravity Talent or at least one skill rank in Zero-G Maneuvering must make a Stamina CRR:

- CRR(200): Character is unaffected by space sickness.
- CRR(150): Character suffers brief bout of mild space sickness and is at –20 for d10 hours.
- CRR(100): Character suffers brief bout of moderate space sickness and is at –40 for d10 hours.
- Failure: Character suffers prolonged bout of severe space sickness and is at –60 for d10 days.

As with low gravity, a Stamina CRR must be made to determine if Strength or Constitution damage occurs during prolonged stays in micro-gravity. However, this CRR must be made each day or part of a day that the character is in a micro-gravity field.

Characters with the Space Adaptation Talent do **not** suffer from the adverse effects of zero gravity and micro-gravity.

Encumbrance and Gravity

In Chapter 7, "weight" ranges and associated encumbrance penalties are given. The ranges are for standard Earth gravity. High gravity makes carrying objects harder, reducing the amount of mass that can be lifted. Low gravity makes carrying easier.

To determine the gravitational effect on encumbrance ranges, divide the entries given in the table by the gravitational effect in gees. Thus for lunar gravity (0.17g), the

Table 9.19 Encumbrance & Gravity			
On Earth (1g), the base ranges are:			
Weight Ranges	**Encumbrance**	**Modifier**	**Max Pace**
0 kg - 88 kg	None	+0	Dash
89 kg - 176 kg	Light	-10	Sprint
177 kg - 264 kg	Medium	-20	Fast Run
265 kg - 352 kg	Heavy	-30	Run
On Jupiter (2.5g), the base ranges are			
Weight Ranges	**Encumbrance**	**Modifier**	**Max Pace**
0 kg - 6 kg	None	+0	Dash
7 kg - 12 kg	Light	-10	Sprint
13 kg - 18 kg	Medium	-20	Fast Run
19 kg - 24 kg	Heavy	-30	Run

base ranges are (with some rounding):

Note: In a zero gravity or micro-gravity environment, inertia and momentum serve as a limit on how much mass can be moved by a character. For game purposes, treat any gravity field of less than 0.05g as 0.05g.

Note: For simplicity, the normal increases to encumbrance ranges (+1 kg per +2 bonus) are applied without adjustment for gravity.

Falling Damage and Gravity

Pits can open up beneath characters; floors in old buildings can give way; accidents can happen while climbing. Characters can fall and suffer injury. The amount of damage depends on the distance fallen and the strength of the gravitational field. Note that in a true zero-gravity environment, falls don't happen, and they pose limited risks in micro-gravity.

To calculate the damage, multiply the distance fallen in meters by three times the strength of the gravitational field in gees, and use the result (rounded down) as the Offensive Bonus for an "attack" roll using the Crush Critical Table in Chapter 10.

Example: *On Earth with its 1g gravity, a 15m fall produces a +45 bonus (15m x 3 x1). On Jupiter where the gravity is 2.5g, the bonus would be +112 (15m x 3 x2.5). On Earth's Moon where the gravity is 0.17g, the bonus would be +7 (15m x 3 x 0.17).*

Falling characters do not receive any non-magical Defensive Bonuses (DB) from armor or shields. They also do not receive their Quickness bonus. Instead, the character receives their Agility bonus plus any magical Defensive Bonuses against the fall. Characters with Acrobatics/Tumbling may attempt a maneuver, using the Bonus column, adding the result to their Defensive Bonus against the fall.

The distance of the fall determines the size and severity of the critical received upon impact. Use the following Table to determine the size of the critical.

Height of Fall	Critical Size
0m – 6m	Tiny
7m – 16m	Small
17m – 33m	Medium
34m – 66m	Large
67m+	Huge

Terminal Velocity

In atmosphere, falling objects are subject to the gravitational force pulling them down and air resistance, or drag, which acts to counter the gravitational force. As the object accelerates, the drag increases in proportion to the velocity until eventually the two forces cancel each other out and the object falls at a constant velocity, known as terminal velocity. For simplicity, this factor is ignored in calculating falling damage. However, SysOps may find it useful to know how long it takes an object or person to fall, particularly in low gravity or very long falls, as there may be sufficient time for a character to escape his predicament, e.g. by releasing a parachute.

In Earth's atmosphere and at 1g, terminal velocity is around 70m/s and is reached in 7 seconds (just under 4 rounds.) To calculate an approximation to the terminal velocity for other worlds, multiply the terminal velocity of Earth by the square root of their gravity and divide by the square root of their atmospheric pressure. This approximation ignores factors such as atmosphere temperature and density.

Example: *An unterraformed Mars has a surface gravity of 0.33g and an atmospheric pressure of 1% of Earth's. Martian terminal velocity is 70 x 0.58 (square root of 0.33) / 0.1 (square root of 0.01), which is 406m/s.*

Example: *Inside a lunar base with gravity of 0.17g, but at Earth standard pressure, terminal velocity inside the dome is 70 x 0.4 (square root of 0.17), or 28 m/s.*

$$\text{Terminal Velocity} = 70 \times \left(\frac{\sqrt{\text{gravity}}}{\sqrt{\text{pressure}}} \right)$$

To calculate the time in seconds needed to reach terminal velocity, divide the terminal velocity (in meters per second) by ten times the surface gravity (in gees).

Example: *On an unterraformed Mars, terminal velocity is 406 m/s and the gravity is 0.33g. Time to reach terminal velocity is 406 / (10 * 0.33) = 123 seconds or just over 61 rounds.*

Example: *Inside the lunar base where terminal velocity is 28m/s and gravity is 0.17g, the time to reach terminal velocity is 28 / (10 * 0.17) = 1.65 seconds or just under a round.*

Jumping and Gravity

In Chapter 6, the Jumping skill has an associated table for determining the difficulty of broad jumps from standing or running starts and of pole vaults. These figures are for standard Earth gravity. High gravity makes jumping harder; low gravity assists jumps and pole vaults.

To determine the gravitational effect on a jump or pole vault, divide the entries given in the table by the gravitational effect in gees.

Example: *On Earth (1g), a running jump of Body Length x 2.0 is considered a Light maneuver. On Jupiter (2.5g), dividing 2.0 by 2.5 gives 0.8, so a running jump of Body Length x 0.8 would be a Light maneuver on Jupiter. An Absurd jumping maneuver is needed to jump twice one's body length on Jupiter (Body Length x5 / 2.5).*

Note: In a zero gravity or micro-gravity environment, jumping per se is impractical as there is insufficient gravity to pull the jumper down to the surface in any reasonable timeframe.

SysOp's Choice

Some SysOps may find gravity calculations and associated medical effects to be a distraction from the natural flow of gaming. For modest changes in gravity, i.e. from 0.75g to 1.25g, SysOps can simply ignore these rules. In the Tintamar setting, gravity control means that many locations that would otherwise be low-gravity or high-gravity environments can be deemed to be at or near Earth gravity. Characters can also eliminate the problems of lower gravities by the Space Adaptation Talent. Thus SysOps should be able to ignore gravity most of the time, if they so choose.

SysOp's Note

SysOps should note that all other effects described in this chapter assume a standard one gravity environment. SysOps who are using the gravity effects will need to adjust maneuver rolls etc. as appropriate for lower and higher gravity.

Radiation

Radiation comes from many sources, both natural and artificial. Natural sources include cosmic rays – charged particles traveling at velocities close to lightspeed, gamma rays released from radioactive minerals, and radioactive isotopes occurring in food, water, and air. Artificial sources include X-ray from X-ray examinations, emissions from fission nuclear power plants, and nuclear fallout.

Radiation can be classified as either fast-moving particles or electromagnetic rays traveling at lightspeed. Radiation poses a danger when these particles and rays strike atoms in a living organism, causing the removal of electrons from those atoms and hence the disruption of biological processes and possible mutation of DNA.

Under normal circumstances such as everyday life on a terrestrial planet such as Earth, the annual dose of radiation is negligible and living organisms are usually able to repair any damage caused. The Van Allen radiation belts surrounding the Earth (and many other worlds) prevent most solar and cosmic radiation from reaching the Earth itself.

For player-characters who travel into space or whose activities bring them into close contact with nuclear facilities, radiation is a serious hazard. Fortunately it is possible to shield against radiation. Ten centimeters of water or high-density plastics (such as polyethylene) can block almost all particle radiation. Blocking X-ray and gamma radiation requires many centimeters of lead or concrete.

One of the spinoffs of magneto-gravitic technology is the magneto-gravitic shield. Any structure or vehicle that has a functional magneto-gravitic shield is protected against both particle and wave radiation. Shielded spacecraft can travel without harm to their crew through planetary Van Allen Belts or during solar storms.

Radiation damage can be caused by receiving large doses of radiation over a short period of time or through receiving smaller doses over a prolonged period. In game terms, unprotected characters must make a Stamina Cascading Resistance Roll. The target number will vary according to the radiation source. Effects will be determined by rolls on the Radiation Critical Table (Chapter 10). The Stamina CRR has the following levels:

- CRR(Target): No effect
- CRR(Target - 25): 1d100–20 on the Radiation Critical Table
- CRR(Target - 50): 1d100–10 on the Radiation Critical Table
- CRR(Target - 75): 1d100 on the Radiation Critical Table
- CRR(Target - 100): 1d100+10 on the Radiation Critical Table
- Failure: 1d100+20 on the Radiation Critical Table

The following table gives the target numbers and frequency of CRRs that must be made in the presence of events and environments that pose radiation hazards.

Table 9.20 Radiation Hazards		
Event or Environment	**Target Number**	**Frequency of CRR**
Undecontaminated area that has received a nuclear blast within 5 years	100	Once per day
Damaged microfusion generator	75	Once per day
Damaged fission reactor	125	Once per hour
Radioactively contaminated air/food/water	100	Once per day
Within ten radii of a nuclear blast	250	Once
Within fifty radii of a nuclear blast	200	Once
In space	50	Once per day
In a Van Allen Belt	150	Once per day
In space during a solar flare	150	Once per hour

Example: *The Faffin' Around's magneto-gravitic shielding has temporarily failed. Unfortunately this technical hitch has coincided with a massive solar flare. Looking at the table, the SysOp notes that the target number for solar flares is 150. Although the ship's hull is relatively thick, this flare is really big, so the SysOp decides that the target number is appropriate. All the crew must make a Stamina CRR every hour while the flare lasts and the shield is down. If the players can beat 150 with their rolls, then their characters will suffer no ill effects. Rolls of 125-149 will require a d100 –20 roll on the Radiation Critical Table (equivalent to a Tiny crit). Rolls of less than 50 (i.e. Failure results) will necessitate d100+20 rolls on the Radiation Critical Table (Huge Radiation crits). Now did anyone remember to purchase some supplies of Antirad medicine?*

Explosive Decompression and Vacuum

Space is empty, cold, and unforgiving. Starfarers are protected from its harsh hostility to life only by the thin skins of environmental domes and spacecraft. A breach in a starship hull or a puncture through a dome wall can spell disaster as precious atmosphere vents to vacuum. Even small holes threaten survival as left unchecked all of the atmosphere will flow outwards into space. Spacecraft and colony domes are designed with sensors to detect punctures by abnormal air movement and pressure drop, and emergency bulkheads to seal off compromised areas until repairs can be made by sealing the hole(s).

Explosive Decompression

When a spacecraft hull or environment dome is ruptured by a meteoroid strike or other puncture, the affected area will suffer an explosive decompression event. This will have the following effects:

There will be a loud bang as air at different pressures meet.

Air will start streaming out of the hole at the speed of sound. Unsecured objects will be sucked out through the hole. All characters who are not secured must make Very Hard Agility maneuvers to maintain their position. Raise all maneuvers by one degree of difficulty if a character wishes to attempt to move against the escaping wind. Depending on the flying items, the SysOp may make an attack roll (d100 open-ended with no OB bonus) on the Impact Critical Table (capped at Tiny size) on characters in their path to represent buffeting. If the hole is big enough, characters may be sucked out.

The reducing pressure and any temperature fall will cause water vapor from the atmosphere to form as fog. Treat as moderate fog for visibility purposes.

If the external environment is colder than the inside (as is the case with space usually), then the temperature will plummet as well. Characters without suitable clothing or armor will take a Tiny Cold Critical (roll d100-20).

The loss of pressure can cause damage to any character with obstructed air ways as internal pressure builds up quickly in their lungs and causes them to distend and rupture, injecting bubbles into the circulatory system, which transports them into vital organs such as brain and heart. Breathing via an oxygen mask does not constitute an obstructed air way, but holding one's breath *does.* Characters without breathing apparatus must make a Will RR (100) – success means that they can choose to exhale, failure means panic and an instinctive reaction of holding one's breath. Characters without breathing apparatus must then make a Stamina CRR with a +50 modifier if they exhaled:

- CRR(150): No effect
- CRR(100): Diaphragm suffers some distension from stomach gases. –20 penalty and 5 Hits
- CRR(50): Damage to lungs from their expansion in chest cavity. –40 penalty and 20 Hits.
- Failure: Lungs rupture, air bubbles propagate into circulatory system. –60 penalty, 3 hits per round of internal bleeding, and 30 Hits.

Vacuum

After an explosive decompression event in space, the next threat to character survival is vacuum itself.

- Every round that a character is in vacuum without breathing apparatus, he must make a Stamina Resistance Roll and achieve 100 or more. Failure to do so means that the character has fallen unconscious.
- Once unconscious, the character's body will swell up

to twice its normal size. His body will cool with ice forming on nose, mouth and eyeballs. Circulation will slow down eventually causing the heart to stop in d10 rounds + Constitution stat bonus.

- If the character is repressurized before the heart stops, then the character will regain consciousness. Blindness from frozen eye fluid will disappear in d10 minutes.
- Once a character's heart has stopped in vacuum, the character is dead. However, even a dead character can be resuscitated with a Sheer Folly (-80) First Aid maneuver.

SysOp's Choice: Alternative Vacuum Effects

The normal vacuum effect rules are consistent with actual experience of explosive decompression and vacuum exposure. Some SysOps may hearken to more cinematic effects such as blood boiling and bodies blowing up in vacuum. To simulate these results, characters exposed to vacuum must make a Stamina CRR each round and applying the effects from the Vacuum Critical Table. The CRR is as follows:

- CRR(150): No effect
- CRR(100): Roll d100-20 on the Vacuum Critical Table.
- CRR(75): Roll d100-10 on the Vacuum Critical Table.
- CRR(50): Roll d100 on the Vacuum Critical Table.
- CRR(25): Roll d100+10 on the Vacuum Critical Table.
- Failure: Roll d100+20 on the Vacuum Critical Table.

High and Low Pressure

Many creatures have evolved for particular atmospheric pressures. Humans, for instance, suffer from altitude sickness in the reduced pressure of airy mountain skies. This is partly due to the lessened oxygen content in the air and partly due to the hemoglobin in the blood being less effective at combining with oxygen. Likewise the human body, as with most land-based animals, is ill equipped to handle the extra pressure underwater.

Low Pressure

The severity of the problems arising in low-pressure environments depends inversely on the atmospheric pressure. The lower the pressure (or the higher the altitude), the more severe the effects. Even relatively modest drops in pressure will cause reduced night vision, a false sense of euphoria, and poor judgment. Further reductions in pressure will induce mountain or altitude sickness, which has various symptoms including vertigo, nausea, weakness, loss of coordination, slowed thinking, and dimmed vision. As the pressure falls further, too little oxygen will reach the brain and the character will pass out and possibly die.

Characters with access to breathing gear such as a respirator and purified oxygen can ignore the effects of reduced pressure (within reason!) Otherwise, characters must make Stamina RRs with the effects varying according to pressure or altitude. Once a resistance roll is failed, the effects will persist until the character is returned to normal pressure or receives pure oxygen. Where the resistance roll is a cascading RR, fresh rolls must be made at the set durations – the character's condition can worsen.

At altitudes of between 1500m and 3000m (pressure between 0.81 and 0.66 atmospheres), characters must make a Stamina RR(100) or suffer a –40 modifier to Perception and a –20 modifier to all other maneuvers. The character will be euphoric. A roll must be made every hour that the character is in this environment.

At altitudes up to 5000m, (pressures of 0.5 atmospheres or more), characters must make a Stamina CRR every thirty minutes.

- CRR(200): No effect
- CRR(150): Characters have a -40 modifier to Perception and a –20 modifier to all other maneuvers, and are euphoric.
- CRR(100): Characters will suffer a -40 modifier to Perception and a –30 modifier to all maneuvers, and are euphoric.
- Failure: Characters will exhibit symptoms of mountain sickness, including nausea and vertigo (if appropriate). Characters will be at –40 to all actions and will feel euphoric.

At altitudes from 5000m to 8000m (pressures down to 0.33 atmospheres), characters must make a Stamina CRR every ten minutes in this environment. Apply a –10 modifier for every 1000m above 5000m (-10 for every 0.05 atmosphere below 0.5 atmospheres). The roll must be made every minute at altitudes above 8000m and atmospheric pressures below 0.33 atmospheres.

- CRR(150): Character is at –30 to all actions and is gripped by a sense of euphoria.
- CRR(100): Character is at –50 to all actions and feels euphoric, belligerent, and/or disoriented.
- Failure: Character lapses into unconsciousness.
- Any character who falls unconscious due to low pressure is considered to be "dying" and only has a number of rounds equal to his Constitution stat plus 5 to live.

High Pressure

Landbound species, particularly humans, are poorly adapted to increases in atmospheric pressure. This is especially noticeable underwater where a column of water ten meters tall generates a pressure equivalent to one atmosphere –human lungs are incapable of inhaling air through a snorkel at that depth underwater. Any character who tries to breathe in an environment where the pressure is one full atmosphere pressure or more above their normal pressure (e.g. 2 atmospheres for humans) will asphyxiate (see Asphyxiation, below).

Instead, human divers rely on self-contained underwater breathing apparatus and pressurized oxygen in combination with other gases such as nitrogen or helium. This

allows trained human divers to reach depths of 60m (7x atmospheric pressure.) Similar equipment allows explorers to investigate the surfaces of worlds where the atmospheric pressure is up to 7x Earth's. Nonhuman characters may use similar equipment at up to 7x their native atmospheric pressure. For greater depths and pressures, explorers must use environment suits, which keep their wearer inside at normal pressure, or submersibles.

For humans and other species not evolved or enhanced to cope with high pressure, the pressurized gas mixes are absorbed into the body at a faster rate than normal. Secondly as the diver ascends or the explorer returns to normal pressure, these gases exit body tissues and form micro bubbles in the blood. If the ascent or pressure restoration is sufficiently slow, then the bubbles will be safely passed out through the lungs. If not, decompression sickness is likely. This has symptoms ranging from skin rashes, extreme fatigue, joint pain (such as in knees or elbows), visual and balance disturbances, breathing difficulties, lack of strength, numbness, paralysis, to unconsciousness and death.

To avoid decompression sickness, characters must reduce pressure at a rate no faster than 1 atmosphere per minute (ascend 10m per minute). Otherwise characters must make a Stamina CRR, with a –10 modifier for every full hour spent at high pressure.

- CRR(150): Character has a skin rash and is extremely fatigued (so will require 50% more rest in next 24 hours.
- CRR(125): As CRR(150), but character also experiences joint pain (-10 for next 24 hours).
- CRR(100): As CRR(125), but character also suffers –10 penalty to visual Perception and a total penalty of –20 to all Strength, Agility, and Quickness maneuvers for 24 hours.
- CRR(75): As CRR(100), but character has difficulty breathing and has a total penalty of –40 to all Strength, Agility, and Quickness maneuvers for 24 hours.
- CRR(50): As CRR(75), but character is paralyzed for 24 hours.
- Failure: Character lapses into unconsciousness and is considered to be "dying" and only has a number of rounds equal to his Constitution stat plus 5 to live.

Decompression sickness can be treated by recompressing the patient or through specific medications (e.g. Repressurine).

Asphyxiation

A further issue for explorers in alien environments is the need for breathable air. For humans, this means oxygen, preferably in combination with nitrogen and small amounts of water vapor.

When characters run out of breathable air, they are in danger of unconsciousness and death. A character can hold his breath for a number of rounds equal to two times the sum of his Constitution stat and Constitution bonus. Once this time has expired, the character must begin making Stamina Resistance Rolls every round. This Resistance Roll requires the character to obtain a total equal to or greater than 100. However, once a roll is failed, the character immediately falls unconscious.

Once a character falls unconscious from lack of breathable air, the character is considered to be "dying" and only has a number of rounds equal to his Constitution stat plus 5 to live.

Traps and Security

Traps are artificial hazards created to capture or kill a target, and come in two distinct types where resolution is concerned: OB (Offensive Bonus) and RR traps. On high-tech worlds, the emphasis is on detecting and forestalling crime before it happens using a panoply of surveillance cameras, automatic sensors, and identity scanners. However, lethal traps are occasionally employed on "civilized" worlds.

OB traps, when sprung, "attack" the unfortunate target. Examples include such things as primitive projectile hazards (that fire an arrow, spear, or bolts), concealed energy weapons (firing a beam at where an interloper is standing) as well as traps that use swinging blades to surprise and wound their targets. Traps that shoot jets of acid at their victims, electrified surfaces, and snares also fall into this category.

RR traps are those that, when sprung, require the target to make a Resistance Roll or a Maneuver Roll in order to avoid the damaging effects. Poison-based traps, pit traps, pressure-sensitive antipersonnel mines, and ultragrav are examples of this category.

In the sample traps below, each is given a difficulty rating for successfully detecting and disarming it. The difficulty ratings included are for when a character is actively searching for traps. Characters not actively searching have the difficulty increased by one level (e.g. a Hard detection maneuver becomes Very Hard, etc.). Once a trap is detected, it may then be disarmed normally (taking into account the difficulty rating listed), using either the Locks & Traps skill for mechanical traps or the Electronic Bypass skill for electrical devices. The SysOp should vary the difficulty of locating and disarming these sample traps according to the situation and skill of the designers.

Sample Devices

Arrow Trap: This primitive mechanical trap fires a projectile (such as an arrow or crossbow bolt) at a target. The attack has an OB of +75. Locating the trap is a Hard Maneuver for any character actively searching. It is Very Hard to disarm it if the trap is triggered by the opening of a door, or a trip wire outdoors.

Crushing Room Trap: A modern improvement on the Falling Block trap (see below). When triggered, this trap

normally seals the room and then either the ceiling lowers or the walls move inwards to crush everyone and everything inside to a pulp. It takes d10 rounds before the walls or ceiling is close enough to cause injury. Thereafter they do +50 Huge Crush criticals every round until the trap is reset. It is Extremely Hard to detect and disarm this style of trap – it may require help from outside to override the controlling mechanism.

Dart Storm Trap: Used by many primitive cultures, this mechanical trap ejects a barrage of several hundred darts within a 2m radius of the trigger. Characters unfortunate enough to be within this area take 2d10 Tiny Puncture attacks from the darts. Often these darts are also coated in poison, so characters will have to resist against poison as well. Dart storm traps have a Medium difficulty to detect, but are Extremely Hard to disarm in most cases.

Electrified Surface Trap: Frequently found in the form of electric fences, anyone who is not fully insulated and who touches any part of the trap becomes a conductor of electricity and is electrocuted. Damage varies, but an "attack" roll of +75 OB as a Medium Electrical critical every round of contact is average. If the trap is part of some nondescript surface, detecting it is Very Hard and requires a scanner or similar equipment to identify the power emanations. The easiest way to disarm one of these is to shut down the power. Anyone who is totally insulated can try cutting the wires on an electric fence to open a safe gap; alternatively drive a large enough creature to short out the fence and then clamber over the animal. All of these methods may attract attention.

Energy Beam Trap: This is the technological equivalent of the Arrow Trap. When triggered, an energy beam (normally a +75 Medium Laser) is fired at the target. Sometimes these are fired from the ceiling; other designers prefer firing horizontally to slice the target in half. Truly lethal designs may incorporate multiple or larger beams. Detecting this trap is Hard (characters may spot the weapon aperture(s)). Disarming can be Very Hard or worse as these traps are often triggered by opening doors, stepping on concealed pressure plates, or being registered by sensors.

Falling Block Trap: A huge stone block drops from the ceiling in this trap, attacking all (in a 2m radius) beneath it when triggered. The heavy block has an OB of +100 and does a Huge Crush critical, and can often be reset using a chain and winch attached to the top of the block to raise it back into position. It is Extremely Hard to detect and disarm this style of trap.

Identity Scanner Device: In themselves, these security devices are not traps per se, but failure to satisfy the scanner with a permitted identity may trigger alarms and worse. These scanners may check fingerprint, retinal, or DNA patterns. "Disarming" them requires presenting the appropriate biometric pattern (fingertip films imprinted with false fingerprints, special contact lenses, etc.), or an Extremely Hard Electronic Bypass of the device itself, or an Extremely Hard Computer Hacking maneuver to subvert the communications channel between device and its database or to falsify data in the database.

Laser Lattice Trap: This trap consists of one or more invisible laser light beams, usually guarding an object or area of a room. Anything that passes through a beam breaks the transmission of the beam interrupting its receipt at a contact point and setting off an alarm (audible or silent). Unless a character's eyes are naturally tuned to the beam's frequency or the intrepid burglar has a suitable scanner or aerosol to reveal the beams, detecting the contact points is Extremely Hard. "Disarming" this trap requires hacking the software controls (Very Hard or worse) or powering it off completely. Alternatively contortionist thieves may be able to twist their way through the lattice.

Minefield Trap: This trap involves seeding an outdoor area with pressure-sensitive mines placed a little way under the

ground. When a person or object with sufficient mass stands on the area above the mine, the mine explodes. Anti-personnel mines may be treated as +100 Medium Ballistic Shrapnel attacks; see Chapter 8 for anti-vehicle mines. Primitive mines are armed when seeded and cannot be "switched off" – they can remain lethal for years. Mines can be radio-controlled, allowing them to be remotely armed and disarmed. Detecting a mine or mines is Very Hard; some designs have little metal content concealing them against metal detectors. Scanners capable of functioning as ground penetrating radar will be useful here. Disarming a mine manually is Very Hard; disarming radio-controlled mines by subverting their communications frequency is also Very Hard but much safer. An old-fashioned method is to drive a flock of sheep across the field to clear the mines by detonating them. Sheep are expensive on colony worlds.

Pit Trap: The bane of many interstellar explorers, a pit trap is a simple hole, normally covered outdoors with foliage and a false floor indoors to prevent easy discovery. These traps use normal falling rules to resolve, with the OB of the "attack" being equal to the distance fallen. Upon being triggered, characters standing above the pit may make a Hard Acrobatics/Tumbling roll in order to avoid plummeting. Characters without the skill may make a stat-based Maneuver Roll (with the difficulty increasing one severity level), adding in both their Agility and Quickness bonuses. Pit traps can also hinder wheeled vehicles – normally the trap gives way beneath a single wheel, entangling the vehicle and requiring a Hard Driving maneuver for successful extrication. Occasionally pit traps are sufficiently large that small vehicles can fall into them and digging a ramp out or getting a crane is the usual solution. Detecting pit traps, while actively searching, is a Medium maneuver, and an Extremely Hard maneuver when not. Disarming a trap of this nature is often an Extremely Hard maneuver and usually involves falling in the pit. As such, it is much easier to just avoid the trap entirely.

Poison Gas Trap: A jet of poison gas (or a cloud of powdered External Poison) is released from an aperture when this trap is triggered. The poison is usually enough to fill a 2m radius, affecting all caught within, with Resistance Roll difficulties determined by the type of poison used. Some designs use ventilation systems to flood an entire chamber with poison gas, particularly if the room can be sealed. This type of trap is Extremely Hard to detect and Very Hard to disarm.

Poison Needle Trap: Often hidden around locks and on chests and other valuables, this old-fashioned mechanical trap is sprung when careless characters attempt to open or unlock such items hastily or incorrectly. Once triggered, the trap shoots a poisoned needle into the character. Characters may make a Resistance Roll to shake off the effects of the poison, with the difficulty determined by the poison used. Detecting a poisoned needle trap is a Very Hard maneuver, while disarming it is a Hard maneuver.

Sensor Device: A family of security devices that are not themselves traps, but can trigger alarms or traps. Sensors include pressure pads to detect the weight of intruders, motion detectors, thermal detectors to pick up heat from living beings, air samplers to identify exhaled carbon dioxide or equivalent exhalations from nonhumans, audio pickups, and the old standby of surveillance cameras. Detecting such sensors can range from Medium to Sheer Folly depending on the degree of concealment. Shooting out a sensor might make you feel good, but the best ways of "disarming" them is not to provide them with the information that they are designed to detect and to subvert the communications channel between the sensors and the control software or security guard, by providing it with a loop of information indicating no intrusion. Such loopbacks can be detected by their very repetitiveness by alert observers.

Scything Blade Trap: Found mostly on lower technology worlds or in the anachronistic fortresses of aristocratic families, this deadly trap has a murderously sharp blade that swings down out of the ceiling or out of the wall to slice the unfortunate soul that triggers the trap. The swinging blade has an OB of +120, and causes a Large Slash critical. This trap requires a Very Hard maneuver to detect and is Hard to disarm.

Spear Trap: This mechanical trap launches a spear (with an OB of +100) at the target that triggers it. This trap is often triggered in a similar fashion to the Arrow Trap above.

Spiked Pit: This particular trap differs from the ordinary pit trap in that its floor is peppered with sharpened spikes. Refer to the description of the Pit Trap for details on handling or avoiding the fall. Characters unfortunate enough to fall in not only take normal falling damage, but also take 1d10 Small Puncture attacks as they are impaled upon the spikes. The OB for the spike attacks is equal to twice the distance fallen. For instance, a 10m deep pit would have a +30 falling attack and 1d10 +60 Small Puncture attack. Discovering and disarming this type of trap is the same as for the Pit Trap, above.

Ultragrav Trap: This subtle trap is often deployed to repel boarding attempts on starships and orbital habitats. When enough invaders have entered a particular section, the artificial gravity field is suddenly increased to five, ten or even more gees. Anyone caught in the area needs to make a Sheer Folly Acrobatics/Tumbling maneuver (increase difficulty to Absurd for ten gees

plus) to prevent themselves falling to the ground and breaking bones. Success means that they have stabilized their position (probably a prone one if they are in heavy battle armor.) With the boarders pinned, automatic weapons or defenders outside the field can pick them off. Impossible to "detect" as such, ultragrav can only be disarmed by switching off the field, and the off switch is probably in a very safe, very distant control room.

Watery Hazards

If your character is in a boat or cruising above the surface in an aircar, then rivers and lakes are interesting scenery. When your character is on foot, then they can represent delay and even danger when they must be crossed.

Characters may freely wade through water that is not above their heads at a speed of one quarter their Base Movement Rate without being required to make a Maneuver. Should the water level actually be higher than the head of the character, the Swimming skill is required. Swimming across a slow stream or river is a Light maneuver while swimming across rapids is a Sheer Folly maneuver, as this can easily force the character far downstream. Even keeping one's head above water in churning rapids is considered a Very Hard maneuver.

If the character is wearing archaic armor, the difficulty for swimming increases one level for each armor base worn (soft leather is +1 difficulty level, while studded leather is +2 difficulty levels, etc.). If the character is wearing futuristic armor, then the penalty is –10 for every 20 points of Maximum Maneuver Penalty possessed by the armor (rounding up.)

Drowning

A character is able to hold his breath for a number of rounds equal to two times the sum of his Constitution stat and Constitution bonus. (Note holding one's breath in combat is much harder) Once this time has expired, the character must begin making Stamina Resistance Rolls every round. This Resistance Roll requires the character to obtain a total equal to or greater than 100. However, once a roll is failed, the character immediately falls unconscious. The round following unconsciousness begins the drowning process with death coming in 1d10 rounds. A character can drown in substances other than water, including quick sand, fine dust, sand, or even a silo full of grain, so aquatic characters can still "drown".

Quick Sand

The bane of many wilderness explorers, quicksand can be found in locations where sand and water mix daily - jungles, deserts, coasts and sandy stream beds. Its depth can range from ten centimeters to meters. Quicksand behaves like water; anyone stepping into quicksand immediately begins to sink as if slipping under water. Characters caught in shallow quicksand can leave by retracing their steps. They do not have to make a Maneuver Roll to exit an area of shallow quicksand.

Characters immersed in deeper quick sand can float, and may gently and carefully "dog paddle" to firmer terrain. Swimming through quick sand is a Medium maneuver (either "All or Nothing" or Percentage, depending on the situation). Even if an immersed character sinks to the bottom, they may not drown if they are standing upright - the quicksand may simply not be deep enough. Characters that panic and begin thrashing around are, however, likely to drown. Panicked characters will sink at the rate of 5cm per round, and once below the surface will drown using the Drowning rules found above. With nearby shrubbery, characters may attempt to pull themselves out. This act requires a Medium Strength-based Maneuver – characters may only add their Strength stat bonus once, not twice as normal owing to their lack of stability.

Characters trapped in quick sand may also be aided by nearby companions with rope or equipment sufficiently long enough to reach. This act of rescue is a Medium Strength based Maneuver; however, characters helping to pull out the sinking character may add twice their Strength bonus to the roll as normal. Characters may also attach a rope to a vehicle and tow their unfortunate comrade to safety – this will require a Light vehicular maneuver. Drivers should be careful not to land their vehicles into another patch of quicksand!

Starvation & Thirst

In a moderate climate on a terrestrial world, a character needs the equivalent of approximately three liters of water and half a kilogram of food each day. For every day that a

character goes without food or water, a Stamina Resistance Roll against RR (100) is required. Failure results in a -10 modifier to all actions (but not to RRs). Two RRs are required if the character is deprived of both food and water. This means that one day without food or water gives a total modifier of –20, if both rolls are failed. Once a character reaches a total modifier of -100, they will pass out and will be unable to wake, with death arriving 2d10 + Constitution bonus hours later.

Only the process of eating and drinking can save the character; if a character is unconscious, it will probably be necessary to hydrate and feed the character intravenously. Attaching the necessary tubes and ensuring correct nutrition and hydration is a Hard First Aid maneuver.

Once the starving character has obtained food and water, the modifiers will be reduced at a rate of -5 per hour until they are fully gone.

Some species may be so alien that they don't require water. However all races require sustenance of some form. Even photovores, creatures that are nourished by photosynthesis of sunlight, need their daily quota of light and, in some cases, trace elements.

Heat

On terrestrial worlds, the extreme heat of the desert daytime and the tropics can be deadly. On worlds closer to their suns or orbiting hotter stars, even mad dogs and Englishmen will think twice about going outside at noon. The habitable regions may be confined to the poles on such planets. Characters genetically adapted or whose species has evolved on hot worlds will be able to ignore the extreme heat; normal characters are potentially in big trouble.

When exposed to temperatures higher than 32 degrees Celsius (90 degrees Fahrenheit), a normal character is required to make a Stamina Resistance Roll against RR (80) once every hour or receive a -5 modifier to all actions. If the temperature is above 43 degrees Celsius (110 degrees Fahrenheit), the Stamina RR must be made once every ten minutes. The modifiers will remain until the character can cool off by locating shade, immersing himself in water, or until night falls. If the character is wearing heavy clothing or armor (**but** is **not** wearing a desert suit or other suitable environment suit), the Resistance Roll target number increases by a value of 10 for each archaic armor base worn (Soft Leather requiring a RR (90); Studded Leather requiring a RR (100), etc.), and by 10 points per every 20 points (round up) of Maximum Maneuver Penalty for modern/futuristic armors (e.g. Mature Light Body Armor has a Maximum Maneuver Penalty of –45, so requires a RR (110)).

If the temperature is above 54 degrees Celsius (130 degrees Fahrenheit), a character receives a Heat Critical every 10 minutes. Roll 2d10+20 to determine this critical. If the character is encased in metal archaic armor, heavy body armor, or combat armor, the critical receives an additional modifier of +50.

Note: Proper attire, such as loose robes and head coverings, offers a bonus of +20 to all Resistance Rolls. Characters with functioning desert suits or the correct type of environment or multi-environment suits may ignore the effects of heat. Note also that desert suits and environment suits can be integrated into suits of battle armor.

Cold

On an iceworld, characters can suffer from hypothermia and frostbite, and can literally freeze to death. Wrapping up tightly in furs can stave off the cold, but nothing beats a working coldsuit or a multi-environment suit for ignoring the icy elements. Some races have evolved in the frozen wastes, and are almost immune to natural cold.

If the temperature is below 4 degrees Celsius (40 degrees Fahrenheit), a normal character is required to make a Stamina Resistance Roll against RR (80) once every hour or receive a -5 modifier. If the temperature drops to below -18 degrees Celsius (0 degrees Fahrenheit), the Stamina Resistance Roll of RR (100) must be made once every ten minutes or characters receive a -5 modifier to all actions. The modifiers are cumulative and can only be negated by locating cover and warmth. The negative modifier is reduced at a rate of -1 for every minute the character enjoys the effects of warmth.

Should a character reach -100, a Stamina Resistance Roll against RR (100) is required. Failure results in the character falling asleep, with them freezing to death over the next 1d10 + Constitution bonus hours.

Other Dangers

Sadly the dangers described above are not the only threats to characters' lives.

Landslides/Avalanches: Whether of rocks or snow, landslides are always deadly. Characters on foot caught on the outskirts may attempt an Extremely Hard Acrobatics/Tumbling maneuver to try and escape the effects. Characters caught in the middle will take a +150 Crush attack every round until it passes. The hapless adventurer may attempt an Absurd Acrobatics/Tumbling maneuver to leap out of danger's path. Characters in vehicles may attempt to drive out of the way, if physically possible, by making a Very Hard Driving maneuver. Alternatively, they can attempt to outrun the landslide by making an Extremely Hard Driving maneuver. Vehicles, which fail to evade the landslide, will suffer a +50 Small Vehicle Crash attack every round until it passes.

Storms: Heavy winds will prevent archaic missile fire, disrupt thrown attacks, and impose a –1 modifier per km/hour on firearms, needlers and flamer weaponry. (Note: SysOps should ignore the effects of windage in anything less than a howling gale or a storm.) As long as the firer is braced, windage is ignored for laser, sonic, and electrical weapons. Storms can also bring thick sheets of rain that reduce the distance a character can see clearly, sometimes down to a handful of meters. In rain or electrical storms, there is a chance of being struck by lightning, or drowning (also with sand storms), or even freezing to death in a blizzard. Strong winds from a tornado may even lift a character from the ground. Characters are best advised to wait out really inclement weather and take cover immediately if possible.

Cave-ins: Sometimes the interesting areas of a world are underground. Ceilings of caves and tunnels, natural and artificial, can be unstable and prone to sudden collapse under the right stimuli. Grenades, explosives, and reckless use of energy weapons can produce cave-ins. Characters unfortunate enough to be caught in a cave-in are treated as if they are caught in a landslide, though the area is usually much smaller and the collapse does not take as long.

Lava: This is liquid rock, so hot that even characters adapted to extreme heat will treat it with caution. Exposure to lava (being hit by it or touching it) causes both a Heat critical and an External Poison critical. Characters that happen to fall into or be immersed in lava, receive both criticals each round with a bonus of +50 to each critical roll.

Smoke: Smoke can obscure vision and cause breathing problems for characters. An area filled with smoke causes all Perception rolls to increase from 1 to 5 difficulty levels, depending on the volume of smoke. For every round that a character must breathe the polluted air, they receive a -5 modifier to all actions. This modifier is reduced at a rate of -1 per minute once the character is no longer exposed to the smoke.

Acid: There are several varieties of acids that a character can encounter. All acids use the External Poison critical table (see Chapter 10), but vary depending on the strength of the acid. Very weak acids might only require a roll of 2d10+20, while extremely strong acids will require a roll of 1d100+20.

Injury, Healing, & Death

During the course of the game, your character is going to get hurt. Damage is classified into three severities, based upon the total amount of damage a character has received from all wounds. This means that any and all damage from Criticals are added together to determine the severity of damage that the character has taken. It is the overall severity of damage that determines how long it will take a character to heal from his wounds naturally. The following list defines the three different severities.

Light – Any injury or injuries with a total penalty of –25 or less. Bleeding wounds totaling 5 Hits per round or less also fall into the Light severity. The character has taken less than 25% of his total Hits in damage.

Medium – Any injury or injuries with a total modifier between –26 and –50, a bleeding wound between 6 and 10 points per round, or any fractured bones all constitute medium severity. The character has taken more than 25%, but less than 50% of his total Hits in damage. Medium damage can also include injured muscles, tendons, and organs.

Severe – Any wounds with modifiers totaling greater than –51, bleeding more than 10 Hits per round, any shattered bones, or destroyed muscles, tendons, nerves or organs all make up severe damage. The character has taken more than 50% of his total Hits in damage. Injuries can also include damaged muscles, tendons and nerves.

Healing Concussion Hits and Stat Loss

All characters will heal naturally over the course of time. If the character has a Constitution bonus of 1 or greater, he will heal a number of Concussion Hits equal to his Constitution bonus plus 1 for every full eight hours of rest that he gets. If the character has a Constitution bonus of zero or below, he will still heal at least one Concussion Hit for every 8 hours of rest.

Bleeding injuries must first have the bleeding stopped through the use of the First Aid skill before the damage caused by the bleeding can heal.

Stat losses may be regained at a rate of one point per stat for each full day of rest.

Other Damage

All damage, except Concussion Hits and stat loss, uses the following table to determine how fast the injuries heal, based upon the severity of the damage. Multiple wounds have their damage combined prior to consulting this table. To determine how long it will take a character to heal, roll d100 and add the character's Constitution bonus to the roll. If another character is using, or has used the First Aid or Medical Practice skill on the patient, then add in the Bonus Result of that maneuver as well.

Table 9.21 Healing & Recovery

Roll	Severity of Damage		
	Light	Medium	Severe
01-15	5 days	25 days	45 days
16-35	4 days	18 days	34 days
36-65	3 days	12 days	24 days
66-90	2 days	7 days	15 days
91-100	1 day	3 days	7 days

The SysOp may require that the character wait until the full time has elapsed before any maneuver or other penalties are gone. Alternatively, he may reduce the penalties by an amount equal to the total penalty divided by the number of days required for it to heal (rounded down) each day.

Technological and Psionic Healing

Advances in medicine and technology have led to the development of devices that can substantially speed up the healing process. Specific examples are listed in the Equipment chapter, with notes on recuperation times and the skills (either First Aid and/or Medical Practice) required to use them safely.

Some characters with psionic abilities can also heal. These abilities will heal injuries as noted in the descriptions of the psionic disciplines, see the Psionics chapter.

Death

Death is part and parcel of the adventuring life. While PCs hope that untimely ends overtake their enemies, death can strike them down too. There are several primary causes for the death of an adventurer. These include overwhelming specific wounds (criticals), massive shock (Concussion Hit damage), the draining of vitality (Constitution stat deterioration), poisons, diseases, radiation, prolonged exposure to vacuum, and certain psionic effects. Only rarely does this ever involve a natural cause as mundane as old age, and medical scientists intend to eliminate that one day as well.

Critical damage is one of the most common methods of character death. Criticals can provide massive amounts of damage in a single blow, including the loss of limbs, impairment of movement, death in a number of rounds, and occasionally instant death.

Using an Extremely Hard First Aid maneuver, a medical practitioner can stabilize a patient who has suffered a critical result indicating death in xx rounds. Success in this maneuver will stabilize the patient for a number of minutes equal to the original number of rounds that the character still had to live. Unless the patient is placed in a Life Support Unit or a Regeneration Tank or **all** of the patient's injuries are treated, the patient will die at the end of the stabilization period.

If the patient can be placed in a Life Support Unit, the character will remain alive for up to an hour. During this time, it is necessary to treat the patient's injuries. By successfully treating any part of the injuries (hit loss **or** bleeding **or** penalties, etc.), the patient will "come off the critical list" and continue in a stable state until all of the damage can be healed. However, the patient must remain in the Life Support Unit (or be transferred into a Regeneration Tank) until all of the damage is healed.

If the patient is placed in a Regeneration Tank, then the tank will keep the character alive until all the damage is healed.

A character is unconscious when his Concussion Hits reach zero or below. So long as his Hits do not fall below a negative number equal to the character's Constitution stat (not the stat bonus, but the stat itself), the character will heal naturally. The character will wake up once his Concussion Hits have risen above zero. If the character's Hits fall below a negative number equal to his Constitution stat, he is then near death and dying.

The character then has only a short time left to live (a number of rounds equal to his Constitution stat plus 5). At the end of the last round, he will die. Religious characters say that this is the moment when the soul or spirit leaves the body. First Aid (made as an Extremely Hard maneuver) and the psionic Healing disciplines can stabilize dying characters. Once stabilized, the character remains unconscious and in a coma until the damage (Hits or critical damage) that put him below zero Concussion Hits are repaired, and is once again above zero.

With advanced technology (i.e., with the character in a Life Support Unit and, depending on the cause of death, a Regeneration Tank), great skill, and a lot of luck, it is possible to resuscitate a dead character. For characters who have suffered a single trauma, such as a heart attack, a Sheer Folly (-80) First Aid maneuver is required. For multiple traumas, an Absurd (-100) First Aid maneuver is necessary. Such extreme medical procedures may only be carried out in the first minute after death – each attempt requires five rounds. (SysOps may allow doctors with access to even more advanced technology to attempt such revivals up to ten minutes after death.) Psionic healing may be used to bring characters back to life at any point during the first ten minutes.

In most settings, the only chance for a character to be brought back from the dead once the ten-minute mark is reached would be to place the patient in cryogenic suspension and hope that doctors centuries or even millennia further in the future can supply a miracle cure.

Ten minutes of game time after the death of a character (i.e. after the soul leaves the body), the character's stats will start deteriorating. Every minute after the ten minutes have lapsed, one of the character's stats will lose 1 point (determine which stat randomly). Once any stat reaches zero, the character cannot be revived even if the damage has all been healed, until his stat is restored to be above zero. Characters who reach this state can only be saved in settings where magic or miracles are possible.

Combat

Science fiction, and space opera in particular, can involve frequent and intense action. Your **HARP S**F character is bound to face a combat situation. Whether a spaceport tavern brawl, leading an assault on a hostile alien installation, or a deadly space fighter battle in an unexplored solar system, effective preparation may save your character's life.

In **HARP SF**, combat can be very personal. Characters can slug it out with their foes with fists and knives, attempt to subdue them with sonic stunners, or attack them with deadly force using firearms, lasers and blasters. In HARP SF, characters can also fight their battles in armored speedsters, fighter jets, or starships. In vehicular combat, seat-of-the-pants driving and hotshot piloting is crucial in evading devastating damage. The best defense is an effective offense – gunners lock onto their targets with hunter-seeker missiles and gigawatt lasers.

This chapter will explain the rules for both Personal Combat and Vehicular Combat. Vehicles will be covered in more detail in HARP SF Xtreme.

The universe is a dangerous place. Fame, wealth, and sometimes even simple survival can hinge on the success of a combat. To the victor go the spoils of war. The vanquished may suffer loss of possessions, imprisonment, severe injury, and death. Your character can die in any battle. Combat should not be undertaken lightly – firearms and energy weapons are designed to kill.

Included below are some combat tips from experienced players that are useful in **HARP SF**:

1. Don't fight if you don't have to.
2. Good role playing and clever planning can often achieve your objective.

If you have to fight:

1. Think ahead. Combat is often unexpected, but that doesn't mean you can't be ready for it!
2. Weapons, extra ammunition, weapon cells, personal armor, medical kits, and anything else you might need in combat should be easily accessible. Always take your best weapon, your best armor, your best equipment into battle – it is no use to your character gathering dust in the starship armory.
3. Use the surrounding terrain to your advantage. Locate the best places to take cover and get into cover before the bullets and the energy blasts fill the air.
4. Any warrior character needs to be skilled with at least one ranged weapon attack such as a firearm or an energy weapon.
5. Practice teamwork and coordinate your attacks with fellow adventurers. Know what your comrades will do, don't get in their line of fire, and don't shoot them by mistake. Friendly fire isn't.

Combat Overview

The basics of making an attack in **HARP SF** are simple. Whenever you want to make an attack, do the following:

1) Make an attack roll. This is an open-ended percentile roll.

2) If the initial roll is within the fumble range for the weapon, the attack stops and you roll on the fumble table. If the initial roll is within the open-ended range (96-100), you roll again and add the two rolls together. If the second or any other subsequent roll is between 96-100, you roll again and add it to the previous total.

3) Add your character's OB (Offensive Bonus) to the final die result.

4) Subtract your foe's DB (Defensive Bonus) from the adjusted die total. This is your **Total Attack Roll**.

5) If the *Total Attack Roll* is 1 or higher, then you have hit your foe. Now that you have determined that you have hit, adjust your *Total Attack Roll* by adding or subtracting the size modifier for the weapon that your character is using. This is your **Adjusted Attack Roll**.

6) Look up your *Adjusted Attack Roll* on the proper Critical Table, as determined by the Attack Type for the weapon that you are using. This is the damage that you have done to the foe. All damage is applied immediately.

Armor – What the character is wearing. **HARP** SF contains both a number of full sets of armor as well as enhancement add-ons that provide extra protection against hostile environments and specific attacks.

Attack Type – This is what determines the critical table to use in resolving the attack. There are 30 critical tables available in **HARP SF**. These cover both physical attacks, high-tech weaponry, and psionic energy attacks.

Concussion Hits (Hits) – This is the most common type of damage inflicted by a critical table. Every character has a number of Concussion Hits. This reflects how resilient a character is, representing his toughness and endurance. When a character reaches zero Hits, he is unconscious. A starting fighter-type character may begin with over 50 Hits. Characters can die from Concussion Hit loss, but this is uncommon.

Critical – The tables used to determine damage are known as Critical Tables. These provide the SysOp with an easy way to determine what damage has been done to or by a character.

Defensive Bonus (DB) – Basically, this is any factor that keeps a character from being hit and/or hurt. Many factors can contribute to DB: a character's quickness, armor bonuses, shield, special items, skills, maneuvers, cover, even a character's position.

Offensive Bonus (OB) – This is a measure of the character's offensive ability. Character OB is not always just the character's skill bonus with his weapon. It can include other factors such as stat bonuses, bonuses from other skills (combat styles) instead of weapon skill, special bonuses from weapons or other equipment, and sheer, dumb luck!

Weapon Size –Weapon size does not influence whether or not a character can hit a foe; instead it modifies how much damage is done by a hit.

The Combat Round

A **HARP SF** combat is divided into "rounds," each being equal to two seconds. Characters can usually only perform one action each round, with complex or unusual actions requiring multiple rounds to complete. The list below includes examples of a variety of actions available to characters and the length of time necessary to accomplish them. Should a character wish to perform an action not included in the following list, simply estimate the length of performance time (in seconds) and divide the estimation by 2. The result will determine the number of required rounds. Combat Actions details a number of special maneuvers/actions that characters may perform in lieu of a normal attack.

Table 10.1 Combat Actions

Action	Rounds
Activate a device	1
Activate Psi Discipline	1
Change clip or weapon cell	3
Climb (one-half Base Movement Rate)	1
Combat Perception (-50 to roll)*	0
Controlled Drop to the Ground	1
Disarm trap (per difficulty rating)	1
Draw Weapon (or drop /change weapon)	1
Electronic Bypass (per difficulty rating)	2
Leap out of a vehicle	1
Leap into a vehicle	1
Melee	1
Mount Riding Animal	1
Move Base Movement Rate (x Pace)	1
Pick Lock (per difficulty rating)	1
Quick Perception Roll (-20 to roll)	1
Rapid Dismount	1
Ranged Attack	1
Stand Up (from prone position)	1
Search 1 sq m Area**	4

*May be used while performing other actions
**For traps, secret doors, etc.

Breakdown of a Combat Round

A combat round generally proceeds as follows:

1. All players and the SysOp announce actions for the coming round. Each player is responsible for his/her character and any NPCs he/she may be controlling. The

SysOp controls the NPCs and creatures opposing the group, while also determining the actions of any innocent bystanders or NPCs caught in the crossfire.

2. Roll and record Initiative. Initiative determines the order in which characters and monsters act in the coming round. For more on Initiative, see below.

3. Resolve actions, psionic activations, maneuvers and combat in the order of initiative. Record the results of all injuries.

Determining Initiative

In a combat round lasting only two seconds, most actions occur very close together. **HARP SF** makes use of an Initiative system to assist the SysOp in keeping track of the order in which actions are taken by the Player Characters, creatures, and/or NPCs during the combat round.

All players must declare their actions for the round before rolling Initiative, and then roll to determine who actually gets to act first. Each player rolls a single ten-sided die adding in their character's Quickness and Insight bonuses, taking into account any situational modifiers. The character with the highest total acts first, then the second highest, and so on, until everyone has had the opportunity to act.

The SysOp must also roll Initiative for any monsters or other foes as well, adding their Initiative bonus to the result.

With this system, players are required to roll Initiative each round due to changing conditions, such as combatants entering or leaving the fray, wounds received, or even psionic effects. These uncontrollable instances can easily alter when characters will be able to take action.

Initiative Modifiers

Circumstances and situations (sometimes even those beyond their control) can modify a character's Initiative. The table below provides Initiative modifiers for a number of common situations.

Table 10.2 Initiative Modifiers

-10	Weapon Not Ready (first round only)
0	One Handed Weapon
-5	Two Handed Weapon
+5	Two Weapon Combination
+10	Pole Arm (only when closing to melee range)
-10	Pole Arm (when within melee range)
-5	Shield
-20	Surprised (first round only)
-5	Lightly Encumbered
-10	Medium Encumbered
-15	Heavily Encumbered
-25	Wounded More Than 50%

Surprised – When two or more groups come upon each other unexpectedly, the SysOp must determine if either is surprised. The Player Character with the best Perception skill makes a Maneuver Roll, while the SysOp rolls for the opposing group. The highest roll wins; the losing party suffers a -20 penalty to their Initiative value. A tie results in both groups being equally surprised, with neither side receiving the modifier. Should one group be aware of the other (but not vice versa), they will not be penalized by the Initiative modifier even if they fail the Surprise check. The second group would receive the modifier as usual should they fail the roll.

SysOp's Tip: Tracking Initiative

Keeping (and remembering) a firm order of Initiative can sometimes be confusing. As such, index cards can be an invaluable resource. Maintain one card for each player and one for each additional combatant in the melee. As Initiative is rolled, simply place the cards out in front of you in order from highest to lowest.

Cycle through the cards, one at a time, requesting each player to announce their actions, placing it on the bottom of the stack once their action is complete. When the first card in the stack is on top again, a new round has begun!

Combat Basics

Offensive Bonus

A character's Offensive Bonus (OB) is added to attack rolls against another character, an NPC, or a creature. However, a character's Offensive Bonus may also come from actions or skills not related to whichever weapon a character is currently wielding. For instance, a character may take the opportunity to use a combat style. With all combat styles, a character must **always** use the **lesser** of the two bonuses, whether combat style or actual skill with a particular weapon, **unless** otherwise stated.

The character's total OB consists of the following components:

Skill Rank Bonus – The skill rank bonus for the weapon skill or the combat style skill being used.

Stat Bonus – The character's combined Agility and Strength bonus.

Talent Bonuses – Any bonus received from a particular Talent.

Weapon Bonus – Any possible high-quality bonuses from superior materials, manufacture or technology received from the weapon being used. In some settings, this may include magical bonuses.

Positional Bonuses - Any bonus received for having an advantage in location over your foe (such as higher ground).

Range Modifiers – For ranged weapons only (e.g. primitive missile weapons such as bows, thrown weapons, energy weapons, and firearms), bonuses for being very close to the target and penalties for being distant from the target. (See Ranged Weapons for full details, p.194)

Special Modifiers – Any other modifiers to the character's OB, such as penalties from damage received or from psionic effects, or special combat actions that would

otherwise alter the OB. In science-fantasy settings, these may include spell effects.

All of the factors listed above are combined to calculate the character's total OB when making an attack. Most of the bonuses and modifiers are generally applied ahead of time (prior to rolling), with only Positional Modifiers, Range Modifiers and Special Modifiers being determined during the flow of combat.

The following table lists a number of possible Positional and Special Modifiers that may affect your OB during combat:

OB Modifier

- +10 Height (attacking foe from higher ground, foe may parry)
- +15 Flank (attacking from the side, foe may parry)
- +20 Rear (attacking from behind foe, foe may not parry normally)
- +20 Foe unaware of attack (foe may not parry)
- +20 Foe Stunned *
- +40 Foe Downed (melee attacks or point-blank ranged attacks only) *

*Only one may be applied at a time; all other modifiers are cumulative.

Defensive Bonus

Characters also have a Defensive Bonus (DB). This bonus is automatically subtracted from attacks made against the character. A character's DB consists of several factors, most of which will not change during the course of combat. The individual elements below are combined to give a total Defensive Bonus, and include the following list of possibilities:

Quickness Bonus x2 – The value of a character's Quickness bonus doubled. This number can be reduced to zero, but never below, based upon the maneuver penalty of the armor worn.

Armor Bonus – The bonus gained from donning armor. Primitive societies may still use historical types of armor such as chain mail. Futuristic armor is much lighter, easier to maneuver in, and provides greater protection overall. It may also be enhanced against specific weaponry. Each type of armor affords the character different bonuses.

Shield Bonus – The bonus gained from using a shield. The particular shield used and whether or not the character has been trained in its use determines the actual bonus. See Shields for more details.

Talent Bonuses – Any bonus received from a particular Talent.

Cover Bonus – Any bonus a character might receive from taking advantage of cover. Classified as Soft, Hard or Reinforced, cover is also either Half or Full. In firefights, characters should always try to reach cover. See the table below for details.

Maneuver Bonuses – The bonus gained from special maneuvers or combat actions like Parry or Dodge. See Combat Actions for more details.

Quality Bonus – Possible high-quality bonuses (from superior materials, manufacture, or design) from the armor worn or shields carried. In some settings, this can include magical bonuses.

Special Bonuses – Any other modifiers to the character's DB, such as penalties from damage received or from psionic effects, or special combat actions that would otherwise alter the DB.

All of these items listed above are combined to calculate the character's total DB. Note that it is possible to have multiple bonuses from a number of categories. Most of the bonuses to a character's DB are calculated ahead of time, with only the Cover, Maneuver, and Special bonuses being determined during the flow of combat.

A character may take advantage of a Cover bonus only when an appropriate item or terrain feature is present. Half cover covers approximately 50% of a character's body, and full cover covers 80% or more of the characters body. Soft cover is defined as something that hinders an attack, but not well enough to fully absorb the blow (such as a bush or a sheet hanging on a line to dry). Hard cover is defined as being so sturdy that most damaging effects cannot get through it immediately (such as a low wall, over-turned table, or full walls). Prolonged or concentrated burst fire from advanced weapons can degrade Hard Cover into Soft Cover. Reinforced cover is defined as being specifically hardened against attacks (such as blast doors, closed habitat domes, or starship hulls). While it is not impenetrable, even advanced personal weaponry will take a long time to reduce its efficacy.

The table below gives the bonuses for the type of cover being used:

Table 10.3 Cover

Type of Cover	Bonus
Half Soft Cover*	+20
Full Soft Cover*	+40
Half Hard Cover*	+50
Full Hard Cover*	+100
Half Reinforced Cover*	+50
Full Reinforced Cover*	+100
*Only one type of cover may be used at a given time.	

\Weapons

In **HARP SF**, there are three broad categories of weapons and weapons-like attacks, namely Physical, Projectile, and Energy.

Physical weapons and weapons-like attacks include all animal attacks, melee attacks using archaic weapons such as swords and maces or modern blackjacks and knives, martial arts and other unarmed attacks, thrown weapons such as javelins and spears, and missile weapons such as slings, crossbows and longbows. Physical attacks also include Heat, Cold, Impact, and Electricity damage, whether from the environment, psionic abilities, or even magical effects.

Projectile weapons are firearms and similar weapons, which fire one or more high-velocity physical projectiles at the chosen target. These include revolvers, pistols, submachine guns, machine guns, and rifles. Projectile attacks also include grenade attacks (whether thrown or fired using a launcher), needlers, and pacifier pistols. Futuristic armor and shields can receive kinetic enhancements that give greater defense against these attacks.

Energy weapons are advanced weapons, which direct electromagnetic radiation, superheated plasma, coherent particle bolts, or sound at their targets. Energy weapons include minilasers, laser pistols, blasters, flame pistols, electrostunners, and sonic stunners. Futuristic armor and shields can be specially enhanced against these attacks using ablative armor coatings and specialist neutralization accessories.

Armor

Characters who frequently enter personal combat will find that armor is the cornerstone of their defense. Armor and shields protect their wearer by deflecting blows and by reducing the deadliness of blows that do land. The armor of the future is equally effective at absorbing the impact of bullets and energy blasts. Futuristic armor can be integrated into spacesuits and multi-environment suits, adding protection against biological weapons, poisonous atmospheres, or the hard vacuum of space.

Choosing the right armor is a compromise between maneuverability and protection. Despite advanced lighter materials, suits of armor are still relatively heavy – the better they protect, the heavier they are and the more they restrict movement. Soldiers can perform acrobatic feats in combat armor, but they won't be as agile as someone wearing ballistic armor, or as quiet, or as inconspicuous.

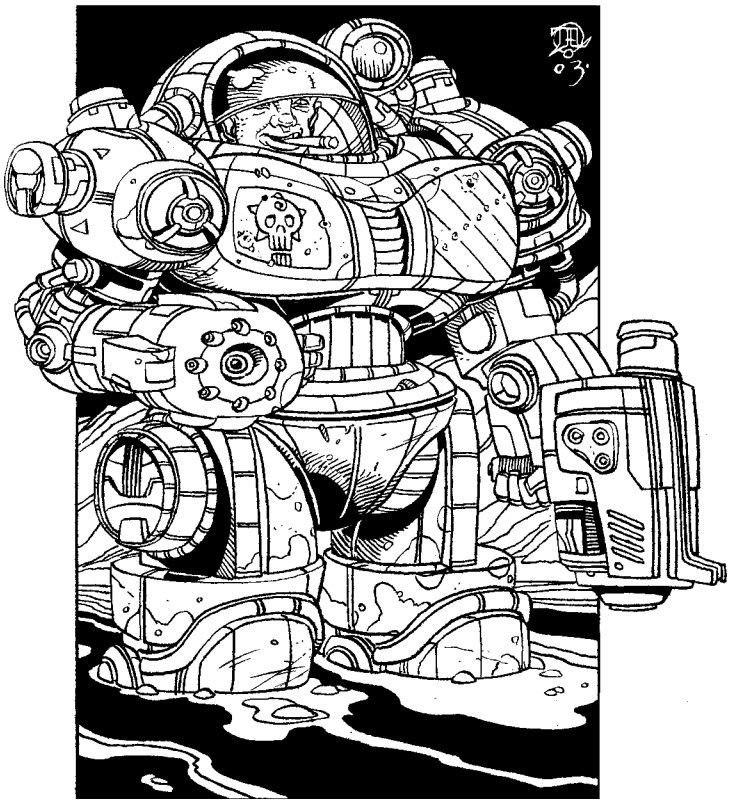
In science-fantasy settings where magic exists, heavier, more protective armors have higher spell casting penalties.

As with other forms of technology, armor effects depend on its stage of technological development (Early, Mature, or Advanced). More highly developed armor has better maneuverability.

Types of Armor

There are five categories of futuristic armor in HARP SF, as well as six types of protective suits and four armor enhancements. Each category represents a set Defensive Bonus, Casting Penalty, Bonus Increment, and Maneuver Penalty. The armor types are as follows:

Ballistic
Reinforced Ballistic
Light Body
Heavy Body
Combat
Chameleon Suit
Desert Suit
Environment Suit
Hazmat Suit
Spacesuit
Multi-environment Suit
Kinetic Enhancement – Minor, Lesser and Greater
Ablative Enhancement – Minor, Lesser and Greater
Dazzle Neutralizer
Sonic Neutralizer



Ablative Enhancement – This is a polymer-based coating, which is applied to the surface of suits of armor. When an energy blast strikes the ablative layer, the polymer absorbs the energy and sublimes off the armor as a cloud of vapor. The intense heat from the bolt is therefore transferred away from the wearer. Each absorbed blast burns off one ablative layer, requiring the armor to be regularly recoated. A typical coating has ten layers. Ablative Enhancement only protects against Energy attacks.

Ballistic – This is a light armored cloth, made from para-aramid fibers or similar materials. An extension of the original bullet-proof vest, it can be concealed underneath ordinary coats.

Chameleon Suit: This full body suit traps the wearer's body heat inside, so that the temperature of the outer surface equals the environment, rendering the wearer invisible to infrared detection. The suit also shifts visible color to match the surroundings. The wearer receives a +20 bonus to Stalking and Hiding maneuvers and DB from these masking capabilities.

Combat – This is the preferred armor of military professionals. It is a fused amalgam shell of advanced composites, ultra-hard ceramics, extremely durable plastics and alloys. Combat armor is almost always worn as a complete suit covering all of the body.

Dazzle Neutralizer – This device consists of a special light detector and a set of polarizing filters. It must be integrated into the visors or faceplates of helmets. It detects the light patterns emitted by Laser Dazzlers and alters the visor's opacity to prevent the patterns traveling through to reach the individual's eyes and optic nerve. As the Laser Dazzler's effect travels at lightspeed, the Neutralizer must continuously distort the outer surface of the visor, imposing a –10 penalty to all visual Perception maneuvers while the Neutralizer is active. A person protected by a Dazzle Neutralizer is immune to the effects of a Laser Dazzler.

Desert Suit: Specialized form of the environment suit, which has a builtin refrigeration unit and water reclamation unit (capable of recycling all moisture from respiration, perspiration, or excretion). These may be integrated into other forms of armor.

Environment Suit: Full body suit designed to protect the wearer against a specific hostile environment. Coldsuit versions are designed for arctic conditions and have a built-in heating system as well as superb insulation. These may be integrated into other forms of armor.

Hazmat Suit – Designed to protect against "hazardous materials" (hence "hazmat"), this is a lightweight, environmentally sealed, full-body suit. The material is highly resistant to punctures and easily cleaned. A hazmat suit incorporates a helmet and breathing apparatus to fully isolate its wearer from noxious substances in the environment. They are not designed for use in hard vacuum. Hazmat suits may be integrated into other forms of armor.

Heavy Body – This is a stronger version of Light Body Armor, which has additional layers in its weave, and has embedded metal plates to reinforce critical areas.

Kinetic Enhancement – This nanotech modification enables a suit of armor to absorb the kinetic energy of high-velocity projectiles – the armor goes completely rigid on an impact. This add-on has two disadvantages – it only provides its extra protection against Projectile attacks, and it takes a round for the armor to lose its rigidity after being struck. During this recovery round, the wearer forfeits his Quickness bonus (if any) to Defensive Bonus and cannot change facing.

Light Body – This pliable armor is a multi-layered weave of para-aramid fibers, advanced composites, and extremely durable plastics. The ensemble is effective at resisting bullet impact and absorbing energy blasts.

Multi-environment Suits – These full-body suits enable their wearers to function in extreme environments such as toxic planetary atmospheres, the pressure of oceanic depths, extreme heat or cold, and vacuum. They have the full life-support apparatus of a spacesuit, built-in temperature and pressure regulation and a shell made from advanced materials designed to resist the effects of hostile environments. These may be integrated into light body, heavy body, and combat armor

Reinforced Ballistic – Similar to Ballistic Armor, this is a heavier cloth that incorporates a number of lightweight metal plates for extra resilience. It can be concealed under coats, albeit with difficulty.

Sonic Neutralizer – This device consists of a sound detector, a sound generator and a set of earplugs, and may be integrated into helmets. It counters the stunning and paralyzing effects of Sonic Stunners and Sonic Stunrifles by detecting their special harmonics and setting up a counterharmonic to destructively interfere with them. A person protected by a Sonic Neutralizer is immune to sonic stun weaponry.

Spacesuit – Designed for use in the hard vacuum of space, this is a lightweight, completely sealed, full-body suit. The spacesuit incorporates a helmet, breathing apparatus, emergency water and nutrient tubes, and the necessary plumbing to handle bodily functions. Spacesuits may be integrated into other forms of armor.

Suits of Armor vs Part Armor

High-tech armor is normally manufactured as complete suits, custom-made for an individual. Characters wearing unfitted armor suffer a substantial movement penalty above the normal armor penalties. Even if characters of similar height and build exchange pieces of armor, the armor is automatically treated as unfitted armor. Characters may have unfitted armor fitted by paying 10% of the value of the armor, plus the cost of any additional required material. Additional material is required when the armor to be fitted is smaller than the person it is being fitted to.

Sometimes characters may just wish to wear an armored vest (protecting their torso – front and back, abdomen and groin) and/or a helmet (to protect the head). Both the level of protection and restrictions on maneuverability are reduced.

Table 10.4 Full Sets of Armor

Armor	DB	UF MaxMP	UF MinMP	MxMP	MnMP	CP*	IV
Ballistic Armor	30	-40	-5	-20/-15/-10	0/0/0	+2PP	5
Reinforced Ballistic Armor	45	-60	-10	-35/-30/-25	-5/0/0	+4PP	5
Light Body Armor	60	-80	-20	-50/-45/-40	-10/0/0	+6PP	5
Heavy Body Armor	75	-120	-30	-60/-50/-45	-15/-5/0	+8PP	5
Combat Armor	90	-160	-40	-80/-70/-65	-20/-10/-5	+10PP	5
Chameleon Suit	20	-20	-5	-15/-10/-5	0/0/0	+0PP	1
Desert Suit	5	-20	-5	-15/-10/-5	0/0/0	+0PP	1
Environment Suit	5	-20	-5	-15/-10/-5	0/0/0	+0PP	1
Hazmat Suit	5	-20	-5	-15/-10/-5	0/0/0	+0PP	1
Space Suit	10	-40	-10	-20/-15/-10	0/0/0	+1PP	2
Multi-Environment Suit	15	-60	-20	-30/-25/-20	-10/-5/0	+2PP	3
Minor Kinetic	+20*	-40	-5	-20/-15/-10	0/0/0	+2PP	5
Lesser Kinetic	+40*	-60	-10	-30/-25/-20	-5/0/0	+3PP	5
Greater Kinetic	+60*	-80	-20	-40/-35/-30	-10/-5/0	+4PP	5
Light Ablative	+20**	-60	-10	-30/-25/-20	-5/0/0	+2PP	5
Medium Ablative	+40**	-120	-30	-60/-55/-50	-15/-10/-5	+4PP	5
Heavy Ablative	+60**	-180	-50	-90/-85/-80	-25/-20/-15	+6PP	5

* Kinetic Enhancement's DB is only applicable versus Projectile attacks
** Ablative Enhancement's DB is only applicable versus Energy attacks

DB – The suit's total Defensive Bonus, which is added to a character's DB. Note that Kinetic and Ablative add-ons, only add their DB against Projectile and Energy attacks respectively.

UF MaxMP – The maximum movement and penalty maneuver representing restriction of movement and weight of the unfitted armor piece. The penalty is applied to all skills with Agility or Quickness as one of the modifying stats. Note this unfitted penalty is not reduced by improvements in technology.

UF MinMP – The minimum movement and maneuver penalty representing restriction of movement and weight of the unfitted armor piece. The penalty is applied to all skills with Agility or Quickness as one of the modifying stats. Even utilizing the character's *Armor* Skill, a character cannot reduce the penalties for the armor worn below this value. Note this unfitted penalty is not reduced by improvements in technology.

Maximum Maneuver Penalty (MxMP) – The penalty representing restriction of movement and weight of the armor worn. The character's *Armor Skill* can reduce this penalty. The Maximum Maneuver Penalty is applied to all skills with Agility or Quickness as one of the modifying stats, and also modifies any DB gained from the Quickness stat bonus. However, this penalty cannot reduce the bonus gained from the Quickness stat below zero. For modern armor types, the Maximum Maneuver Penalty varies according to the stage of technological development (first number is Early, second is Mature, third is Advanced).

Minimum Maneuver Penalty (MnMP) – The penalty applied to all skills with Agility or Quickness as one of the modifying stats. Even utilizing the character's *Armor* Skill, a character cannot reduce the penalties for the armor worn below this value. For modern armor types, the Minimum Maneuver Penalty varies according to the stage of technological development (first number is Early, second is Mature, third is Advanced).

Casting Penalty (CP) – Armor of all kinds interferes with manipulating the energy used to fuel spells. This special penalty requires a caster to spend more Power Points per spell while encased in armor.

Increment Value (IV) – All manufacture, material and magical (if any) item bonuses are measured in increments. The Increment Value of armor sets and individual pieces of armor is used to calculate the additional bonuses of superior armor. The Manufacture or Material Bonus is multiplied by the Increment Value to

determine the additional bonus of the armor. For example, a set of superior combat armor with a Manufacture Bonus of 2 would have the total following DB: 2x5 +60=70.

Armor Skill Refresher: Emilia begins her career in the planetary defense forces of Celeste, equipped with the standard military-issue heavy body armor. Consulting the table above, Emilia's player notes that the max maneuver penalty (at Mature tech development) for heavy body armor is -50, while the minimum penalty is -5. So to maneuver effectively in heavy body armor, the player will need to invest 9 ranks in Emilia's Armor Skill to reduce the penalty to -5 (50-5=45), assuming that Emilia had +0 in both Strength and Agility bonuses. Later in her career, Emilia becomes a marine in the service of the Terran Federation, where combat armor is the norm. At Mature technology development, combat armor has a max maneuver penalty of -70 and a min maneuver penalty of -10, which would require 15 ranks in the Armor Skill to wear effectively (70-10=60). Since Emilia has already invested 9 ranks in the Armor Skill to wear her heavy body armor, she only needs to add 6 ranks to her Armor skill to reduce the penalty of wearing heavy body armor to -10.

Table 10.5 Part Armor

Armor	DB	UF MaxMP	UF MinMP	MxMP	MnMP	CP*	IV
Ballistic Armor Helmet	3	-4	0	-2/-2/-1	0/0/0	+0PP	0.5
Ballistic Armor Vest	9	-12	-2	-6/-5/-3	0/0/0	+1PP	1.5
Reinforced Ballistic Armor Helmet	4	-6	-1	-4/-3/-3	-1/0/0	+0PP	0.5
Reinforced Ballistic Armor Vest	13	-18	-3	-11/-10/-8	-2/0/0	+2PP	1.5
Light Body Armor Helmet	6	-8	-2	-5/-5/-4	-1/0/0	+0PP	0.5
Light Body Armor Vest	18	-24	-6	-15/-14/-12	-3/0/0	+3PP	1.5
Heavy Body Armor Helmet	7	-12	-3	-6/-5/-5	-2/-1/0	+1PP	0.5
Heavy Body Armor Vest	22	-36	-9	-18/-15/-14	-5/-2/0	+4PP	1.5
Combat Armor Helmet	9	-16	-4	-8/-7/-7	-2/-1/-1	+1PP	0.5
Combat Armor Vest	27	-48	-12	-24/-21/-20	-6/-3/-2	+5PP	1.5
Minor Kinetic Helmet	+2*	-4	-1	-2/-2/-1	0/0/0	+0PP	0.5
Lesser Kinetic Helmet	+4*	-6	-3	-3/-3/-2	-1/0/0	+0PP	0.5
Greater Kinetic Helmet	+6*	-8	-2	-4/-4/-3	-1/-1/0	+0PP	0.5
Minor Kinetic Vest	+6*	-12	-2	-6/-5/-3	0/0/0	+1PP	1.5
Lesser Kinetic Vest	+12*	-18	-3	-9/-8/-6	-2/0/0	+1PP	1.5
Greater Kinetic Vest	+18*	-24	-6	-12/-11/-9	-3/-2/0	+2PP	1.5
Light Ablative Helmet	+2**	-6	-1	-3/-3/-2	-1/0/0	+0PP	0.5
Medium Ablative Helmet	+4**	-12	-3	-6/-6/-5	-2/-1/-1	+0PP	0.5
Heavy Ablative Helmet	+6**	-18	-5	-9/-9/-8	-3/-2/-1	+0PP	0.5
Light Ablative Vest	+6**	-18	-3	-9/-8/-6	-2/0/0	+1PP	1.5
Medium Ablative Vest	+12**	-36	-9	-18/-17/-15	-5/-3/-2	+2PP	1.5
Heavy Ablative Vest	+18**	-54	-15	-27/-26/-24	-8/-6/-5	+3PP	1.5

* Kinetic Enhancement's DB is only applicable versus Projectile attacks
** Ablative Enhancement's DB is only applicable versus Energy attacks

Assembling a Custom Set of Armor

To create a custom set of armor (such as armor with an integrated spacesuit), decide whether the armor will be fitted or unfitted, and then total the following: the DB, Maximum and Minimum Maneuver penalties, cost, and Casting Penalty of each armor component.

Example: *Later in Emilia's career with the Federation, she becomes a pilot and is issued with a fitted set of combat armor with an integrated spacesuit and a lesser kinetic enhancement. This gives her a DB of 100 (90 from combat armor and 10 from the spacesuit) against Physical and Energy attacks and a DB of 140 (40 from the Lesser Kinetic Enhancement) against Projectile attacks. The combo has a MaxMP of –110 (-70-15-25) and a MinMP of –10 (-10-0-0) thanks to the Federation's Mature technology. If magic existed in the Tintamar setting, she would have a casting penalty of 14.*

Note: When dealing with part armor, all decimals of .5

are rounded up to the nearest whole number, and all decimals of .4 and below are rounded down to the nearest whole number. In addition, when totaling Maneuver Penalties always round up to the nearest 5 or 10's digit for the purpose of calculating how many armor ranks are required to reduce the Maneuver penalty.

Shields

Blast Shield - This military-grade shield is typically rectangular or oval in shape and may be up to 2m tall, depending on the size of the person using it. It is designed to be rested on the ground or on top of a boot and completely cover the defender. Regardless of the species of the wielder, the blast shield gives the same Defensive Bonus. This shield may be designed to lock directly into an armored arm – otherwise it may be gripped with a forearm strip and a long bar running the shield's width. It is normally made from a combination of alloys and advanced composites.

Riot Shield - This shield is normally oval or rectangular in shape, and is commonly used by police forces in riot situations. Typically the shield covers the defender from the shoulder to just above the ankle, and is up to 1.5m tall and 1m wide. The defender grips this shield by a single handle and a forearm strap. Riot shields are normally made from advanced composites and fiberglass-like materials – many are transparent so as not to hinder the defender's vision.

Ablative Add-on – This is an ablative layer that can be added to either blast or riot shields to increase their protection against Energy attacks. The layer will degrade completely after taking ten blasts, and must be replenished.

Kinetic Add-on – This is a nanotech enhancement that can be added to either blast or riot shields to increase their protection against Projectile attacks.

SysOp's Choice: Hit Locations

Characters may perform a "called shot," hitting a specific part of the body. This can easily be accomplished, using the following option.

In determining the area of the body struck, consult the "ones" die from the attack roll. If the result is open-ended, then use the ones result of the final roll.

For example, a roll of 37 would be read as a 7 on the following Hit Location Table.

1 Foot/Calf
2 Knee
3 Thigh
4 Groin
5 Abdomen/Lower Back
6 Chest/Upper Back
7 Neck
8 Face/Skull
9 Shoulder/Upper Arm
10 Forearm/Hand

* An odd value on the "tens" results in a hit to the side of the body wielding the weapon; an even value strikes the off-hand side.

** In melee combat, if a character attacks a foe two or more sizes larger than the PC, subtract 5 from the total of the one's die (to a minimum result of 1).

Called Shots: Characters making called shots must subtract 10 from their OB in order to adjust the location amount by +/-1 point. A character may reduce their OB by increments of 10 to gain a maximum of +/-5 points to strike the desired location.

SysOp's Choice: Armor Options for Extra Realism

Kinetic enhancements to armor cause the impact of a projectile to be spread over a large area rather than punching a hole through the target's body. SysOps may wish to represent this by allowing Ballistic Puncture attacks from firearms to be resolved as Ballistic Impact criticals instead. Likewise, kinetic enhancement armor will protect against Shrapnel attacks – the SysOp can allow these to be resolved as Impact critical attacks instead.

Ablative enhancements to armor soak up much of the energy from an energy weapon. Some may still reach the target, but the effects are more likely to be a surface burn rather than the internal injuries or deep tissue burns of lasers and plasma weaponry. To simulate this, SysOps can resolve Laser and Plasma attacks against targets wearing ablative armor as Heat critical attacks.

Table 10.6 Shields

Shield Type	Untrained	Trained	Notes
Blast Shield	+20	+40	Weighs 9 – 12 kg; 1.5m to 2m tall
Riot Shield	+15	+30	Weighs 5 – 8 kg; 1m to 1.5m tall
Ablative Add-on	+10	+10	Adds 2 kg; Only protects against Energy attacks (10 blasts)
Kinetic Add-on	+10	+10	Adds 1 kg; Only protects against Projectile attacks
Unusual objects	+0 - +15	+10 - +30	GM' s discretion.

Combat Actions

In the chaos of combat, characters are usually concerned only with dealing out damage to their foe. There are, however, a variety of other actions that a character may perform during combat. Called Combat Actions, the list below describes some of the most common and useful actions a character may attempt to perform. Each example also includes advice on the best resolution method for the situation. Some of these actions are most suited to close melee engagements; others are appropriate to ranged attacks.

Note: Combat Actions may be used in conjunction with individual attacks and with Combat Styles. However, many Combat Actions will replace the attack(s) gained by the style with those of the Combat Action. These Combat Actions are marked by an asterisk next to their names.

Note: Certain combat actions can permit normal weapon attack sizes to be increased. These are Aimed Burst, Power Strike, and Well-aimed Shot. Successful uses of the Ambush, Dirty Fighting, and Sniping skills allow all damage cap limits to be ignored.

Aimed Burst*: This action requires a projectile or energy weapon capable of burst fire. When fired in burst mode, the weapon attack size is increased by 1 step and the firer receives an OB bonus equal to the weapon's Burst Bonus minus the weapon's Recoil Penalty (if any). If the weapon is supported on a tripod or otherwise braced against recoil, the Recoil Penalty is ignored. Only one attack roll is made. This Combat Action requires a full round.

Careful Aim: If the character carefully aims a ranged weapon (modern or archaic) at a specific target, this Combat Action reduces any range penalties incurred by the character by 5 per full consecutive round of aiming. All rounds of aiming must be consecutive (no interruptions or breaks from Aiming), the target may not be moving faster than 5 meters per round, and the shooter must be able to maintain visual line-of-sight on the target at all times. Range penalties cannot be reduced below zero using this Combat Action.

Combat Crawl: Using this Combat Action, a character may move by rapid crawling at half Base Movement Rate (but treat as Run in terms of exhaustion) and retain the benefits of any cover or terrain. If there is no suitable cover, the character still receives a +10 bonus to Defensive Bonus due to reduced target area. It requires a full round to get into position to perform a Combat Crawl, unless the character has already used the Minimize Exposure Combat Action, in which case the character is already suitably positioned to begin a Combat Crawl.

Charging*: This special maneuver combines movement with a melee attack, with powerful results. Characters performing a Charging Combat Action do not receive the normal penalty to their attack as they would for an attack made while moving. The character must declare the Charge and must be able to move in a straight line towards the foe. If the character's movement for the Charge involves turns or weaving around obstacles, then count only the movement distance after the last turn. A Charge requires that the character move at least a minimum of 3m during the dash towards the opponent. Every meter moved during the Charge gives the character a +5 modifier to their Offensive Bonus (OB) and a -5 modifier to their Defensive Bonus (DB). The character is limited to moving no faster than a Run (2x Base

Movement Rate), and the bonus from the Charge cannot exceed +50 OB/-50 DB. A Charge always ends with the character adjacent to the opponent charged.

Note: If the target of the charge is wielding a projectile weapon, an energy weapon, pole arm or spear and is aware of the charge, they may make one attack against the charging attacker before the maneuver is resolved.

Delay Action: Characters can choose to delay taking their action to a later point in the round, which can be useful for situations where their actions depends on the actions of another person. For example, a cop has just shouted "Stop or I'll shoot!" at a criminal. The cop's Initiative is higher than the criminal's, but the cop does not want to shoot unless the criminal fails to stop. The cop uses Delay Action to wait until the criminal starts acting – if the criminal reaches for a gun, the cop can shoot him at that point in the round, if the criminal puts his hands up, the cop can then move in for an arrest.

Disarm Foe*: Instead of attacking with a melee weapon, a character may try to disarm an opponent by making a Maneuver Roll, adding his Agility bonus and a value equal to the number of skill ranks with the weapon wielded. The foe is required to make a Resistance Roll (modified by his melee weapon skill bonus, plus an additional +10 modifier) against the value found on the RR column of the Maneuver Table. If the foe is wielding a firearm or an energy weapon, the foe is required to make a Resistance Roll (plus an additional +10 modifier but **without** adding in his melee weapon skill bonus) against the value found on the RR column of the Maneuver Table. A failed roll results in the foe's weapon landing 1-3 meters away in a random direction.

Note: A Combat Style & Maneuver exists with the same name. The action described above, however, is one that may be performed by any character, but is often less successful than when performed by a character with the appropriate skill.

Disengage from Melee*: This Combat Action is used by a character to withdraw from a melee combat without being open to a melee attack. It takes 2 rounds to perform. During the first round, the character cannot attack and must Parry with 50% of his OB (treat as a Full Parry for resolution). If he does not take damage from his foe during this round, the character will automatically get initiative on the next round and be able to make a Full Move away from foe (cannot use this to move past foe) without the foe being able to attack. The character may not purposely attack foe when performing this Combat Action.

Note*: This is not the only way to disengage from melee. Other methods and/or skills may be used to accomplish the same effect.*

Dodge: Any character may attempt to Dodge during their turn, using 2x their Agility bonus (or Acrobatics/Tumbling skill bonus, whichever is higher). The character makes a Maneuver Roll and then receives a +50 (modified by the Bonus result of the Maneuver roll) to their DB against one attack. The bonus received from a Dodge can never be lower than 50 (unless the character fumbles in which case the bonus is 0); ignore any negative results on the Maneuver Table. This Combat Action takes a full round to perform.

Dodging Fire: This Combat Action requires the character to have a full-sized shield (riot or blast shield), hard cover, or reinforced cover to duck behind. It simulates a character quickly moving (part of) his head and his weapon hand out of cover, snapping off a shot (not an aimed or spread burst), and then ducking behind the cover fast. The character may increase their Defensive Bonus against ranged attacks (including Projectile and Energy attacks) by allocating any amount of their OB to their DB. For every two points of OB transferred, the character gains 1 point of DB.

Escape Blast: This Combat Action is usable at any time when a character needs to escape the blast radius of a grenade, bomb, or similar device. The character must be aware that a blast is about to take place, normally by succeeding at a Combat Perception maneuver. If the character has not taken his action for the round, he may change that action from what has been declared to the Escape Blast action. If he has already taken his action for the round, he may still elect to perform the Escape Blast Combat Action. The character makes a Medium All-or-Nothing maneuver roll, adding 2x his Agility bonus (or Acrobatics/Tumbling skill bonus, whichever is higher), and a special bonus of +20 if he has not yet acted in this round. If the character succeeds, he can leap or dive up to 2x his Base Movement Rate away from his current location. If this is enough to take the character outside the blast radius, he will suffer no harm. If the character fails or the blast radius is too large, then the character suffers the ill effects of the blast. After attempting this action, the character must spend the following round reorienting himself and may take no offensive action.

Full Parry*: This full defensive maneuver places the total value of a character's OB (using a melee weapon or unarmed attack) towards their DB with an additional +10 bonus to the overall DB against all melee attacks from a single foe. (See also Parry below.) To successfully use a Full Parry, make a d100 roll. If the result falls within the fumble range of the wielded weapon, a fumble has occurred and the character does not gain the Parry or the special bonus. If the result is within the Open-Ended High range, another roll is made. The

total of both rolls is treated as an attack against a foe with no OB (i.e. perhaps the foe impaled himself on your weapon). In this particular instance the benefits of the Parry are still gained, but a sudden twist of fate ends with an unintentional attack against the foe!

Hold at Bay: There may be times when a character simply wishes to impede the progress of a foe rather than damage him. A character cannot be locked in melee combat with the foe and must have a melee weapon of greater length than the one wielded by the foe. Spears and pole arms receive an automatic +20 modifier to this Maneuver. The character must make a Maneuver Roll, adding his skill bonus with the weapon as a modifier to the roll, and consulting the RR column to determine the value the foe must resist.

The foe then has three options to select from:

Beat aside the weapon and attack – The foe makes a Maneuver Roll using some or all of their OB as the modifier in an attempt to surpass the RR column value of the Maneuver Table. A successful roll allows the foe to attack the character normally, using any remainder of his original OB.

Bypass the character – The foe uses either the sum of his Quickness and Agility bonuses, or his Acrobatics/ Tumbling skill bonus (whichever is higher), in an attempt to surpass the RR value from the Maneuver Table. A successful roll results in the foe bypassing the character and continuing on his way.

Tumbling Attack – For this Maneuver, the foe uses either half the total bonus of his Quickness and Agility bonuses, or half of his Acrobatics/Tumbling skill bonus (whichever is higher), in an attempt to beat the Resistance Roll. A successful roll allows the foe to attack the character with half of his OB.

Knockdown* – A character can make a Maneuver Roll, using the combined stat bonuses from Strength, Agility, and Quickness for this attack. If the Percentage result is 100 (or higher), the foe is forced to make a RR (adding 2x his Agility bonus) versus the result gained from the RR column of the Maneuver table. A failure results in the foe being knocked prone (treat as Foe Downed).

Minimize Exposure – A character can reduce his exposure to ranged weapon fire by hunkering down into a prone position, even without the benefit of cover or terrain. Getting into this position takes a full round (unless the character has just finished a Combat Crawl), but gives the character a +20 bonus to Defensive Bonus for as long as the character can maintain this position. If the character has just completed a Combat Crawl, he may adopt the Minimize Exposure pose without a preparation round. This Combat Action should not be used in melee combat.

Move & Attack* – This Combat Action allows the character to move and attack in the same round. The character receives a -5 modifier to his OB for every 1m or portion of 1m that is moved. If the character moves 5m and attacks, he receives a -25 to his OB for moving three increments (5m = -25). If the character is moving at a pace faster than a run, he receives another -10 for each Pace above a Run. If the character is moving at a Sprint (that is, 2 Paces above a run) he receives an additional -20 to his OB, in addition to the -25 for moving 5m.

Multiple Parry – This Combat Action may be used with any melee weapon. The character may divide his OB among multiple parries against melee or unarmed attacks. He may parry up to one attacker for every 10 ranks (or portion thereof) he has in his weapon skill. When making multiple parries, the character may not also attack in the same round. For each parry the character must assign a portion of his OB, which gets added to his DB against that one attacker. The character must make an unmodified roll for each parry. If the roll falls within the Fumble Range for the weapon, then the character has fumbled and may not make any more parries that round in addition to receiving the results of the fumble. If the roll is a 99 or 100, then treat it as open-ended, and make a second roll and use the total of both rolls as an unmodified attack against the person being parried. This also means that the character may not make any more parries for the round.

Parry – A character may increase their Defensive Bonus against melee attacks by allocating any amount of their OB to their DB. Characters transferring their entire OB are said to be attempting a Full Parry (as listed above). A character's Parry total is applied to all melee attacks directed at them from a single foe. Parrying characters need an (improvised) melee weapon or be using unarmed combat skills to parry.

Press & Melee – This combat action allows the character to move up to 2m and still make a melee attack. This attack is made with a -5 modifier.

Power Strike* – This Combat Action may be used with any melee weapon. The character gets a -20 to his attack for the round and if the attack is successful, he gets to add an additional +10 to the modification for weapon size. This modification may allow the critical result to exceed the normal damage cap for the weapon.

Shield Bash – A character bearing a shield can, in dire straits, use it as a weapon, making an attack roll using the DB value of the shield as the OB for the attack. (Do not count any Ablative Add-on or Kinetic Add-on bonus to the shield's DB.) Unfortunately, performing this sort of action negates the DB bonus for the shield for that round. This particular action may only be

performed by characters with the Shield Training Talent. The Shield Bash attack replaces a character's normal attack action for that round. Riot and Blast Shield Bashes do Medium Martial Arts Sweeps/ Unbalancing criticals.

Spread Burst – This action requires a projectile or energy weapon capable of burst fire. When fired in the spread burst pattern, the wielder may shoot at multiple targets within a 15 degree arc. Targets must be adjacent (with no one else between them). There must be no more than one target per three shots/bolts in the burst. A –30 OB penalty is incurred for each additional target (after the first). However, the firer receives an OB bonus equal to the weapon's Burst Bonus minus the weapon's Recoil Penalty (if any). If the weapon is supported on a tripod or otherwise braced against recoil, the Recoil Penalty is ignored. The weapon attack size is not increased in Spread Burst fire. Only one attack roll is made. This Combat Action requires a full round.

Subdual – At times, characters may wish to strike a foe using a melee weapon without utilizing their entire force for the blow, in an effort to disable or subdue a target. This action receives a -20 modifier to the attack roll. Should the attack still result in severe damaging effects, the character may adjust the result to any other lesser critical on the same table at their leisure.

Sudden Dive – This Combat Action is usable at any time whenever there is an object or terrain that a character may use as cover. The cover must be within 2x the character's Base Movement Rate. If the character has not taken his action for the round, he may change that action from what has been declared to this action. If he has already taken his action for the round, he may still elect to perform a Sudden Dive for cover. The character makes a maneuver roll, adding 2x his Agility bonus (or Acrobatics/Tumbling skill bonus, whichever is higher), and a special bonus of +20 if he has not yet acted in this round, looking up the result on the Percentage column of the Maneuver Table. The Percentage result is the fraction of the cover DB that the character may claim that round, e.g. Pieter gets 70% on an attempt to dive for half hard cover and can claim 70% of its +50 bonus or +35. Results over 100% are counted as 100%. The character must spend the next round reorienting himself in his cover after a successful use of this Combat Action. Fail or Fumble results represent a failure to reach the cover in time.

Sudden Dodge – This Combat Action is usable at any time. If the character has not taken his action for the round, he may change that action from what has been declared to this action. If he has already taken his action for the round, he may still elect to perform a Sudden Dodge.

However in doing so, he is also committed to performing a Sudden Dodge on the following round as well, giving up all other actions. Once a Sudden Dodge has been declared, the character makes a Maneuver Roll using 2 x his Agility Bonus (or Acrobatics/Tumbling skill, whichever is higher). The character then receives 25 plus the result from the Bonus column of the Maneuver Table to their DB. Treat all negative results from the bonus column as if they gave a bonus of zero.

Suppression Fire* – This action requires a projectile or energy weapon capable of burst fire, and can only be used at distances of up to two range increments.

- At point-blank range, a 45-degree arc is covered
- At up to 1 range increment, a 30-degree arc is covered
- At up to 2 range increments, a 15-degree arc is covered

The character makes a Suppression Fire maneuver using the weapon skill on the Bonus column of the

Maneuver Table. Anyone in the target area suffers an attack where the Bonus result is the OB (added to a standard attack roll).

This Combat Action requires a full round.

Well-aimed Shot* – This Combat Action may be used with any ranged weapon. It represents the character trying to hit a more vulnerable part of the target. The character gets a -20 to his attack for the round and if the attack is successful, he gets to add an additional +10 to the modification for weapon size. This modification may allow the critical result to exceed the normal damage cap for the weapon.

Player's Tip: Staying Alive in Melee!

Two of the most useful Combat Actions for melee combat in **HARP** SF are Parry, and Full Parry. Decreasing your OB while increasing your DB can easily be the difference between the life and death of a PC! The **HARP** SF rules assume that all PCs Parry to one degree or another.

Player's Tip: Staying Alive in a Firefight!

In a firefight, parrying does not work. Instead if there's cover available, use it. If the firefight has already begun, use the Sudden Dive action and reach that cover.

If you can't reach cover but you have a riot shield or a blast shield, get behind that shield and return their fire using the Dodging Fire Combat Action. That will encourage your opponents to be mindful of their own cover, while you find a better position.

If you can't reach cover and you don't have a shield, then use the Minimize Exposure Combat Action. Hopefully your character has a robust suit of armor. If you have a weapon capable of burst fire, use the Aimed Burst or Spread Burst Combat Actions – you might not hit your opponent(s) but you will discourage them from going all-out to attack you. If you don't have a burst-capable weapon, the Well-aimed Shot Combat Action might still eliminate one opponent.

If you have reached cover, you can either use the Minimize Exposure Combat Action (particularly if you have a burst-capable weapon or want to use Well-Aimed Shot) or Dodging Fire.

The battlefield is fluid. Positional advantages can ebb and flow. Cover can be degraded by sufficient firepower. Use the Combat Crawl action to move in and around a combat zone. Remember cover doubles as concealment, but concealment is not necessarily cover. Use your Combat Perception to be aware of what is happening and to locate your allies and your enemies.

Getting every scrap of possible Defensive Bonus can be vital to staying alive in a firefight, but it is only half the story. A good defense is a stout offense. Hit hard, hit low, and hit first. Use Aimed Burst, use Spread Burst, and use Well-aimed Shot to hit hard. Use Sniping to hit low. Use genetic, cyber, or psionic enhancements if you have any to boost your Initiative and shoot first. Use Careful Aim to make that first shot perfect (in combination with Sniping) if you have the advantage of a prepared position, time and an unsuspecting target. A dead opponent can't return fire; an injured foe may be at severe penalties.

Ranged Weapons

In the future as today, ranged weapons will be the decisive instrument in personal combat. HARP SF includes a variety of ranged weapons, such as archaic missile weapons, projectile weapons, and energy weapons, which characters may use in combat.

Among the defining characteristics of these ranged weapons is their Range Increment (RI), which determines the distance modifier for the weapon. For each full Range Increment that a target is from the attacker, the attack roll is modified by -10, up to a maximum of five range increments. For each range increment beyond the fifth, the penalty is doubled.

The following table lists a number of ranged weapons and their Range Increments, as well as their Point Blank (PB) bonus. A Point Blank ranged attack is one directed at a target that is equal to or less than one half of a Range Increment from the attacking character. The last column lists the various ranges of a Point Blank attack.

For a missile attack (using an archaic weapon such as a longbow or crossbow) to be effective, the shooter must be standing at least 25% of the Point Blank distance from the target. Otherwise the attack has no effect. For a ranged attack using a projectile weapon such as a firearm or using an energy weapon, there is no minimum distance, i.e. the weapon muzzle can be touching the target.

Example: *Using a Hunting Laser (with a Range Increment of 30m), Pieter has the following modifiers due to range.*

0m-15m	*+20 to attack (Point Blank)*
16m-30m	*+0 to attack (RI 0)*
31m-60m	*-10 to attack (RI 1)*
61m-90m	*-20 to attack (RI 2)*
91m-120m	*-30 to attack (RI 3)*
121m-150m	*-40 to attack (RI 4)*
151m-180m	*-50 to attack (RI 5)*
181m-210m	*-100 to attack (RI 6)*
210m-240m	*-200 to attack (RI 7)*

Table 10.7 Range Increments (Archaic)			
Weapon	**RI**	**PB**	**PB Range**
Composite Bow	16m	25	8m
Heavy Crossbow	24m	35	12m
Javelin	8m	10	4m
Light Crossbow	16m	25	8m
Long Bow	28m	20	14m
Short Bow	10m	10	5m
Sling	10m	15	5m
Spear	7m	15	3m
Thrown Weapons	2m	0	—

Table 10.8 Range Increments (Projectile and Energy)							
Weapon	**RI**	**PB**	**PB Range**	**Weapon**	**RI**	**PB**	**PB Range**
Assault Blaster	15m	30	7.5m	Machine Gun –heavy	100m	50	50m
Assault Laser	30m	20	15m	Miniblaster	2m	10	1m
Assault Rifle	40m	20	20m	Minilaser	5m	5	2.5m
Assault Rifle (recoilless)	40m	20	20m	Needle Pistol	10m	10	5m
Autoshotgun	10m	20	5m	Needle Rifle	40m	15	20m
Blaster Pistol	5m	20	2.5m	Pacifier Pistol	1m	0	-
Electrorifle	20m	15	10m	Pistol	10m	10	5m
Electrostunner	10m	10	5m	Pistol (recoilless)	10m	10	5m
Flame Pistol	5m	20	2.5m	Revolver	10m	10	5m
Flame Repeater	10m	30	5m	SAM Missile Launcher	200m	10	100m
Flame Rifle	10m	25	5m	Shotgun	10m	20	5m
Grenade Launcher	30m	20	15m	Sonic Stunner	10m	15	5m
Grenade Launcher Attachment	30m	20	15m	Sonic Stunrifle	20m	20	10m
Grenades	3m	-	-	Submachine Gun	20m	20	10m
Holdout Gun	5m	5	2.5m	Support Blaster - heavy	40m	60	20m
Hunting Blaster	25m	30	12.5m	Support Blaster – light	20m	40	10m
Hunting Laser	40m	20	20m	Support Blaster – medium	30m	50	15m
Hunting Rifle	50m	15	25m	Support Laser – heavy	80m	50	40m
Laser Dazzler	10m	15	5m	Support Laser – light	40m	30	20m
Laser Pistol	10m	10	5m	Support Laser - medium	60m	40	30m
Machine Gun - light	30m	30	15m	Tankbuster Missile Launcher	50m	10	25m
Machine Gun – medium	60m	40	30m				

Grenades and Grenade-like Attacks

Hurling a grenade into a tight formation of enemies can be an effective method of reducing their numbers. Chucking a grenade from around a corner and letting it explode is a sensible precaution, when you don't know how many enemies are round that corner and you don't want to poke your precious head around to have a look.

When thrown, grenades and other grenade like objects have a Range Increment of 3m with no point blank bonus. When fired using a handheld launcher, the Range Increment is determined by the launcher. These items affect at least a 2m radius from the point of impact – some grenades have a larger radius of effect.

Certain grenades have two concentric volumes of effect – an inner "primary" blast zone, which suffers the greatest damage and an outer "secondary" blast zone, which suffers a reduced degree of damage. The Mark number of a grenade gives both the radius of the primary blast zone and of its secondary blast zone (if any). Multiply the Mark number by 2 to give the primary blast radius and multiply the Mark number by 3 to determine the secondary blast radius. The primary blast zone is counted outwards from the point at which the grenade detonates. The secondary blast zone is counted from the end of the primary blast zone outwards. Both zones are spherical volumes for grenades.

Example: *A Mark III fragmentation grenade has a primary blast zone of six meters radius (III times 2 = 6) and a secondary blast zone of nine meters radius (III times 3). When it explodes, anyone within 6m of the detonation point is in the primary blast zone. Anyone who is between 6m and 15m is within the secondary blast zone.*

The type of damage done to the targets within that area depends on the item.

To make a grenade attack, use the following procedure:

Make an open-ended attack roll adding the character's skill in the Thrown Projectiles weapon class or the Handheld Launchers weapon class (as appropriate). Apply all the normal modifiers to OBs especially range modifiers.

If the result is 101 or more (equivalent to a Medium All-or-Nothing maneuver success), then the grenade strikes the intended target. Go to Step 5.

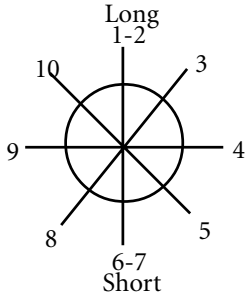
If the result is 100 or less (but not a fumble), then the grenade is off-target. Roll 1d10 to determine the direction of the miss and roll 1d10 to determine by how many meters the attack missed. If the roll for distance results in a 10, then roll a second time and add the two together. (Do not reroll any 10 result on the second roll.) Add 1m per every full 20 points by which the result missed the 101 target number. Use the diagram to the right to determine the direction of the miss . Go to Step 5.

If the original attack roll is a fumble, the grenade explodes in the character's hand. Go to Step 5.

The grenade explodes and everyone remaining within the primary blast radius is at risk of suffering the effects. Make an open-ended roll (remember this value) and add the grenade's Primary Blast Bonus, for the grenade's attack. Characters may claim their normal DB against critical damage (such as Shrapnel damage), subtracting their DB from the result of the grenade's attack roll. Characters may claim any cover between them and the grenade detonation point. Look up the results on the appropriate critical table, remembering to adjust for attack size according to grenade Mark rating. For grenades requiring RRs, resolve the RRs as normal.

If the grenade has a secondary blast radius, everyone within the secondary blast radius is at risk of suffering the secondary effects. Add the grenade's Secondary Blast Bonus to the value of the open-ended roll from the previous step to yield the secondary attack. Characters may claim their normal DB against critical damage, subtracting their total DB from the result of the secondary attack, including any DB from cover between them and the detonation point. Look up the results on the appropriate critical table, remembering to adjust for attack size according to grenade Mark rating. For grenades requiring RRs, the targets receive a bonus of +50 to their RRs.

Example: *The Silth have invaded the colony world of Tantallon and there are desperate firefights between Silth troopers and the citizens in the streets of Mitchell Base. In an attempt to slow the advance of one Silth squad, Karl Jung lobs a Mark IV fragmentation grenade around a street corner, hoping to disrupt their formation. Karl's player rolls a 06 (just missing a fumble!) and adds his Thrown Projectiles skill of 28 minus 20 for range penalties, giving 14, which is nowhere near 101, so the grenade misses. Karl's player rolls d10 for direction of the miss (6, so short) and d10 for distance missed (roll of 1, plus 4m for missing by more than 80 points, so 5m short). The good news is that the street will channel the explosion, so Karl is safe from being caught by his own grenade. A Mark IV fragmentation grenade has a primary blast zone of 8m radius (IV times 2) and a secondary blast zone radius of 12m (IV times 3). One of the Silth troopers is 7m away from the detonation point and fails to spot the grenade in time, so is caught in the primary blast zone. Karl's player rolls 70 for the grenade's attack, plus 75 for the Primary Blast Bonus, giving 145. The Silth on point has*



a DB of 60 but no cover. 145 –60 = 85, plus +10 from attack size (Mark IVs do Large Shrapnel), giving 95 to look up on the Shrapnel Critical Table (30 hits, bleeding at 6 per round, -20 penalty and stunned 3 rounds, arm disabled). Anyone within 8m to 20m of the explosion is within the secondary blast zone. Several Silth troopers qualify. The rearmost succeeds in an Escape Blast Combat Action so is unharmed, the second succeeds in a Sudden Dive towards a doorway and gets an extra +20 DB from partial cover, the third fails his Combat Perception maneuver. The secondary attack is 120 (preceding roll of 70 + 50 Secondary Blast Bonus). The Silth in the doorway has a total DB of 80 (60+ 20 from cover), so 120 – 80 = 40 plus 10 (attack size of Large), so look up 50 on the Shrapnel Critical Table (11 hits, bleeding at 1 per round). The Silth without cover has just 60 DB, so 120 – 60 = 60 plus 10 (attack size) yields 70 (or 15 hits, bleeding at 2 per round, -10 penalty).

The best way to survive a grenade attack is to be outside the blast radius! Any character who succeeds at a Combat Perception maneuver will spot the incoming grenade and may choose to make an Escape Blast Combat Action. If this action succeeds, then the character has dived out of harm's way. If not, the character must suffer the effects of the grenade blast. The character could also choose to make a Sudden Dive Combat Action if there is reachable cover inside or outside the blast radius – failing or fumbling this action will leave the character within the blast radius and without the benefit of the cover.

Missile and Ranged Weapon Use in Melee

Characters using missile weapons while in melee combat are at a distinct disadvantage. Their foes may attempt to disrupt the shot, by grabbing the weapon, striking a blow, or shoving the character's firing hand.

Being attacked while firing an archaic missile weapon results in a -100 modifier to the missile attack, even if the attack misses. Being attacked while firing a projectile or energy weapon results in a –50 modifier to the ranged attack, even if the attack misses. (Most modern weapons can be fired with a simple trigger squeeze and have no minimum range, so a foe trying to disrupt such fire is at a much greater risk of losing their arm.) Characters must be within melee range to disrupt a foe's ranged attack, and must be able to act (i.e. have a higher Initiative value) before the foe can fire.

Trying to deliberately disrupt a ranged attack without making an attack against the shooter is a Light Maneuver Roll (using the skill value of the weapon, if used, or the Strength and Agility bonuses if unarmed). The result is resolved on the Percentage column of the Maneuver Table. The value from the table is then used as the negative modifier to the OB of the character attempting to fire the ranged weapon.

Firing into Melee

Firing any form of ranged weapon (ancient or futuristic) into a melee is a risky practice at best. Characters missing their targets must roll a separate attack against the next potential target in the missile's (or energy blast's) path. A potential target is defined as any character, friend or foe, who is within 2m (within the weapon's line of fire) from the intended target.

Resolving Combat

Combat resolution is similar to skill resolution. Attacking characters roll open-ended, adding their Offensive Bonus (OB), and then subtracting the target's Defensive Bonus (DB) from the total value. Results of zero or below are considered missed attacks, or ones without enough force to actually cause harm. Positive results are considered successful hits; the same value is then modified by the weapon's size value and then applied to the proper critical table to determine the damage caused.

The effects of all attacks take effect immediately. Thus if a character with the initiative manages to instant kill or incapacitate a foe, the target loses his or her attack.

Weapon Sizes

Each weapon is given a specific size, ranging from Tiny to Large (see the equipment listings, Chapter 8 for more information). The size of the weapon will modify critical results from a successful attack. This modifier is only applied after an attack has succeeded, however. This modifier is never applied to the attack roll. It only influences the damage done – not the chances of success of an attack.

The following table determines the modifier for a weapon's size.

Table 10.9 Weapon Sizes

Attack Size	Critical Modifier	Damage Cap
Tiny	-20	80
Small	-10	90
Medium	0	100
Large	10	110
Huge	20	120

Note: Huge attacks are restricted to very large creatures and non-portable weapon systems.

Damage Cap

A weapon's size also determines the maximum damage that it can normally inflict. These are called Damage Caps. If an attack's result is above the Damage Cap for the weapon's size, then the Adjusted Attack Roll is reduced to the maximum allowed for the weapon's size.

If the player, when making an attack, rolls an unmodified 99 or 100 on the dice, then that particular attack is allowed to ignore the Damage Caps. Certain skills (i.e. Ambush and Sniping) and/or Combat Actions (Aimed Burst, Power Strike and Well-aimed Shot) may also allow an attack to exceed the maximums set by the Damage Caps.

Fumble Table

Use the condensed Fumble Table on the facing page to resolve all attack fumbles.

Table 10.10 Condensed Fumbles

01 – 25	**Combat (Melee)**	You lose your grip on your weapon and the opportunity to strike your foe.
	Combat (Ranged)	You are not sure whether the safety is on or off and spend the round fiddling with your weapon.
26 – 50	**Combat (Melee)**	You give yourself a minor wound. Take 1d10 hits. You are trying to hit the enemy, not yourself!
	Combat (Ranged)	In an attack of stupidity, you accidentally unload your weapon' s ammunition or energy cell.
51 – 75	**Combat (Melee)**	It is surprising that you still have all of your limbs attached! Roll 2d10 on the appropriate critical table.
	Combat (Ranged)	If using a firearm, you' ve just had a misfire – it' ll take a minute (at least) to repair. If using an energy weapon, you' ve drained the energy cell somehow.
76 - 100	**Combat (Melee)**	That will most definitely leave a mark! You shouldn' t try to harm yourself like that. Make a 1d100 roll on the appropriate damage table as you try this fancy form of suicide.
	Combat (Ranged)	If there is an ally in the vicinity (SysOp' s choice if more than one), you have just fired on him (make a new attack roll but ignore any fumble results) If not, shoot yourself instead (roll d100 on the appropriate critical table for damage).

Reading the Critical Tables

Each entry on the critical tables has two parts: the description of the attack, and its effects.

The description is included purely for dramatic flavor, and SysOps should feel free to modify the result to reflect the actual situation. For example, if a foe happens to be a giant alien insect, and the description mentions the foe's shield arm breaking, the result should instead be interpreted as one of the beast's legs shattering. Common sense should prevail, but have fun elaborating on the descriptions!

The second part of the attack description describes its effect. Attacks can have any of the following results:

Hits – This is damage that is subtracted from the target's total Concussion Hits. This represents minor damage, nicks, bruises, flesh wounds and the exertion of combat. You will notice that if the description describes an instant death, it still lists an amount of concussion hit damage. This damage represents the damage from the wound, and damage that must be healed should the individual be raised from the dead.

Example: *You roll a critical result of 110 on the Crush Critical table with the hit location of the Head and Neck. The result reads as follows: Side of foe's head is completely crushed making him almost 2 dimensional. Foe stands motionless for 2 rounds then dies. 25 Hits. If your target is a giant amoeba and has no head to crush, the amoeba would still be dead, merely crushed into an unappetizing goo.*

Stunned – If a target is stunned, they may not attack, although they may still parry melee attacks using up to one half of their Offensive Bonus. This parry is resolved in the same manner that a Full Parry is resolved. Any other action requiring a Maneuver roll receives a modifier of -50. Actions that do not require Maneuver rolls, such as swallowing medication, do not suffer penalties. Movement is limited to one-half BMR, maximum Pace of Run. When a character receives a result that says that they are Stunned for one or more rounds, the character will make a Stamina-based Resistance Roll. They must equal or beat a RR of 100 or they are stunned. If there is more than one round of Stun, the number to beat is raised by 10 for every round past the first.

Example: *If the character receives a critical that gives three rounds of Stun, then the character immediately makes a Stamina RR(120) or he is stunned for 3 rounds. (base of 100 + 10 for each round beyond the first = 120 total).*

Bleeding – This represents serious ongoing damage to the character. Such ongoing damage need not actually be bleeding or even visible damage, such as internal wounds. Up to 5 Hits per round of bleeding is considered a Light wound. Between 5 and 10 Hits per round is considered a Medium wound, and more than 10 Hits per round is considered a Severe wound.

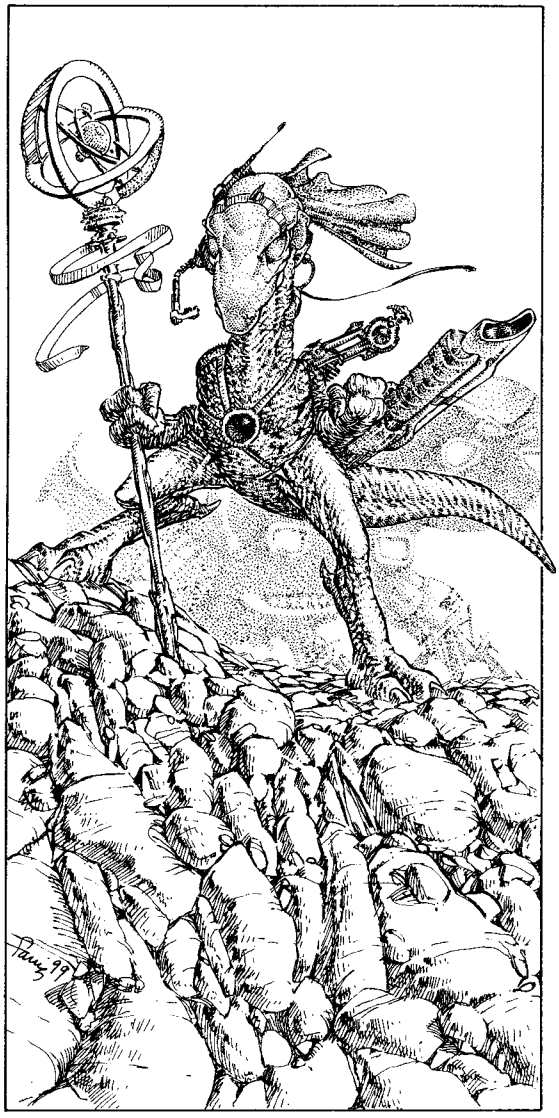
Penalties – These are penalties on all Strength, Agility and Quickness Maneuvers (including OB). These penalties may reduce a character's DB, but only their Quickness bonus to their DB, not Defensive Bonuses received from other sources. These penalties cannot reduce a character's Quickness bonus below zero. These negative modifiers are the result of the damage, shock, and pain of the wounds. If a character is stunned, combine the penalties from the stun with the penalties given separately. Once the Stun has worn off, its penalty (-50) is removed from those applied to all actions.

Crush Criticals	
(-19) – (-10)	Strike whistles past, barely nicking foe. 1 Hit.
(-9) – 0	I have seen kittens hit harder. 1 Hit.
01 – 10	Whoosh! 2 Hits.
11 – 20	You going for a Love Tap? 7 Hits.
21 – 30	I am so impressed, not! Foe takes 9 Hits.
31 – 40	Hefty strike bruises leg muscles and bones. Foe takes 11 Hits and is at -5.
41 – 50	Hard shoulder strike. Foe takes 13 Hits and is stunned 1 round.
51 – 60	You broke his collarbone. Foe takes 15 Hits, is stunned 1 round, and is at -10.
61 – 70	The sound of cracking ribs is music to your ears. Foe takes 17 Hits and is stunned 2 rounds.
71 – 80	Nice, hard blow to his side. 19 Hits. Foe is stunned 2 rounds and is at -15. Keep that momentum going.
81 – 85	Precise, well-placed blow destroys shoulder muscles and tendons. Foe takes 21 Hits and is stunned 3 rounds.
86 – 90	Strike knocks foe down. Foe takes 23 Hits, is stunned 3 rounds, and bleeds 1 per round.
91 – 95	Snap, crackle, pop–that' s 3 broken bones. Foe takes 25 Hits, is stunned 4 rounds, and bleeds 1 per round.
96 – 100	That' s gotta hurt–you broke his foot. Foe takes 27 Hits, is stunned 4 rounds, bleeds 1 per round, and is at -25.
101 – 105	Way to Crush!! One broken weapon arm and shoulder. Foe is now weaponless. Foe takes 29 Hits and is stunned 5 rounds.
106 – 110	That was sooo close–foe is nursing multiple fractures. Foe takes 31 Hits, is stunned 6 rounds, bleeds 2 per round, and is at -30. Death in 6 rounds.
111 – 115	Chest wound! Foe takes 33 Hits and bleeds 2 per round. He' s also unconscious for 6 hours before he dies.
116 – 119	Your blow to his armpit crushes his ribs and organs. Foe takes 35 Hits, is stunned 3 rounds, bleeds 3 per round, and will be dead in 3 rounds.
120	Yuck—are those brains? You crushed his skull and he' s dead. Foe takes 39 Hits.

Weapon	Attack Size	Fumble
Club	Medium	01-02
Nunchaku	(1h) Medium	01-05
	(2h) Large	01-06
Quarterstaff	Large	01-04
Sling	Small	01-04

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Sling	10m	15	5m
Thrown Weapons	2m	0	—



Puncture Criticals	
(-19) – (-10)	Try using the pointed end next time. 1 Hit.
(-9) – 0	Just a flesh wound. Remember to aim. 2 Hits.
01 – 10	Congratulations. You got his undivided attention. 4 Hits.
11 – 20	You drew blood! 6 Hits.
21 – 30	You neatly skewer his weapon arm. 8 Hits.
31 – 40	Cheap shot to the shin. 10 Hits.
41 – 50	Nasty puncture to foe' s chest. 12 Hits.
51 – 60	Your strike tears up foe' s armor and exposes skin. Foe takes 14 Hits and is stunned 1 round.
61 – 70	Forearm puncture leaves open wound. Foe takes 16 Hits, is stunned 1 round, and bleeds 1 per round.
71 – 80	That thigh wound drew blood. Foe takes 18 Hits, is stunned 2 rounds, bleeds 1 per round, and is at -5.
81 – 85	Shot destroys calf muscle. Foe takes 19 Hits, is stunned 3 rounds, and bleeds 1 per round.
86 – 90	Messy, but effective neck strike. Foe takes 21 Hits, is stunned 3 rounds, bleeds 2 per round, and is at -10.
91 – 95	Deep stab to foe' s side. Foe takes 23 Hits and bleeds 2 per round.
96 – 100	Awesome strike to chest. Foe takes 24 Hits, is stunned 4 rounds, bleeds 2 per round, and is at -15.
101 – 105	Major leg wound. Foe takes 27 Hits, is stunned 4 rounds, bleeds 3 per round, and is knocked down.
106 – 110	You impale foe in the lung–~~he~~' ll die in 12 gurgling rounds. Foe takes 29 Hits, is stunned 12 rounds, bleeds 3 per round, and is at -20.
111 – 115	Mortal wound to foe' s side. Foe takes 31 Hits, is stunned 9 rounds, bleeds 4 per round, collapses in 9 rounds, and dies 3 hours later.
116 – 119	You pierced his heart. Foe takes 33 Hits, is stunned 7 rounds, bleeds 5 per round, is at -25, and dies in 7 rounds.
120	You skewered him right between the eyes. He' s dead Jim. Foe takes 36 Hits.

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Composite Bow	Medium	01-03	None	N/A
Darts	Tiny	01-03	None	N/A
Foil	Small	01-03	None	N/A
Harpoon	Large	01-04	None	N/A
Heavy Crossbow	Large	01-02	None	N/A
Javelin	Medium	01-04	None	N/A
Light Crossbow	Small	01-02	None	N/A
Long Bow	Medium	01-03	None	N/A
Needle Pistol	Tiny	01-02	20	5
Needle Rifle	Small	01-02	30	10
Pacifier Pistol	Tiny	01-04	0	N/A
Pick	Large	01-03	None	N/A
Rapier	Medium	01-03	None	N/A
Short Bow	Small	01-03	None	N/A
Shuriken	Tiny	01-03	None	N/A
Spear	Large	01-04	None	N/A

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

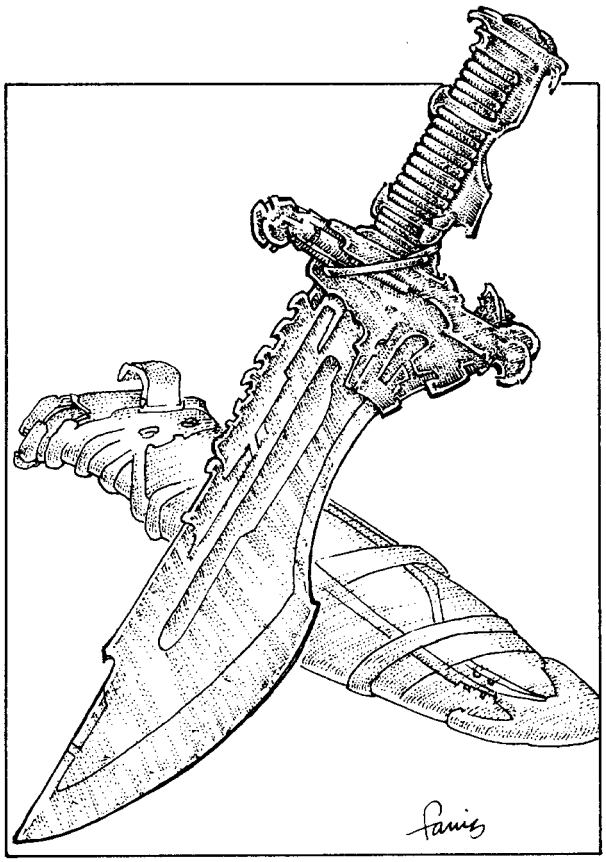
Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Composite Bow	16m	25	8m
Heavy Crossbow	24m	35	12m
Javelin	8m	10	4m
Light Crossbow	16m	25	8m
Long Bow	28m	20	14m
Needle Pistol	10m	10	5m
Needle Rifle	40m	15	20m
Pacifier Pistol	1m	0	-
Short Bow	10m	10	5m
Spear	7m	15	3m
Thrown Weapons	2m	0	—

Slash Criticals	
(-19) – (-10)	Stop embarrassing your friends. 1 Hit.
(-9) – 0	A little more practice, and you could be a barber. 3 Hits.
01 – 10	You nicked his arm. 5 Hits.
11 – 20	Nice rib slash. 7 Hits.
21 – 30	Solid blow to his back, but work on that follow through. 9 Hits.
31 – 40	Mighty blow breaks a rib. 12 Hits.
41 – 50	You hack at foe' s shoulder like you' re chopping wood. Foe takes 14 Hits and is at -5.
51 – 60	Slash to the abdomen. 16 Hits.
61 – 70	The idiot used his arm to parry. Foe takes 18 Hits, is stunned 1 round, and is at -10.
71 – 80	Blow to his elbow. Foe takes 20 Hits, is stunned 1 round, bleeds 1 per round, and is at -15.
81 – 85	Gashing slash destroys muscle. Foe takes 23 Hits, is stunned 2 rounds, and bleeds 1 per round.
86 – 90	Gory strike exposes leg muscles. Foe takes 25 Hits, is stunned 2 rounds, bleeds 1 per round, and is at -20.
91 – 95	Your slash opens a vein. Not a pretty sight. Foe takes 27 Hits, is stunned 3 rounds, and bleeds 2 per round.
96 – 100	Wicked slash to his shield arm. Foe takes 29 Hits, is stunned 3 rounds, bleeds 2 per round, and is at -25.
101 – 105	Major head wound. Foe takes 31 Hits, is stunned 5 rounds, bleeds 2 per round, and is at -30.
106 – 110	You sever foe' s leg muscles and tendons, and he' s down and dying. Foe takes 34 Hits, is stunned 8 rounds, and bleeds 3 per round. Death comes in 8 rounds.
111 – 115	You severed an arm. Foe is unconscious and dies in 6 rounds. Foe takes 36 Hits and bleeds 3 per round.
116 – 119	Slashing blow severs arteries. Foe takes 38 Hits, is stunned 5 rounds, and bleeds 4 per round. Foe dies in 5 agonizing rounds as his blood spurts like a fountain.
120	Instant Death. If you find enough pieces you might send them home to his mother in a trinket box. Foe takes 42 Hits.

Weapon	Attack Size	Fumble
Battle Axe	Large	01-04
Broadsword	Medium	01-03
Dagger/Knife	Small	01-02
Hand axe	Small	01-02
Katana	(1h) Medium	01-03
	(2h) Large	01-04
Saber	Medium	01-03
Scimitar	Medium	01-03
Vibroknife	Large	01-02
Vibrosword	Huge	01-03

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Thrown Weapons	2m	0	—



Grapple Criticals	
(-19) – (-10)	You lose your grip. 1 Hit.
(-9) – 0	Don' t be afraid to make contact. 2 Hits.
01 – 10	You had him and then you lost him. 3 Hits.
11 – 20	Foe slips from your grasp, but takes 4 Hits.
21 – 30	A rough push counts for something. 5 Hits.
31 – 40	Sneaky move trips foe. Foe takes 6 Hits and is at -5.
41 – 50	You got him! Foe must make a Routine Strength Maneuver to break free. Foe takes 7 Hits and is at -10.
51 – 60	Shake, rattle and roll…That' s 3 broken ribs. Foe takes 8 Hits and is at -15.
61 – 70	Your grip on his hand makes him think it' s broken. 9 Hits.
71 – 80	You get foe so tangled up he drops anything that he is holding. Foe takes 10 Hits, is stunned 1 round, and is at -20.
81 – 85	Your attack flings foe 5' in a random direction, tearing his arm muscles. Foe takes 11 Hits, is stunned 1 round, and is at -25.
86 – 90	You squeeze his leg–hard. Foe takes 12 Hits and is stunned 2 rounds. You gain +25 against him on your next 2 rounds.
91 – 95	You' ve pinned his arms, painfully. Foe takes 13 Hits, is stunned 2 rounds, and must make a Hard Strength Maneuver in order to break free. He is at -30 until free.
96 – 100	That "square knot" tore cartilage and tendon, and cracked a few bones Foe takes 14 Hits, is stunned 3 rounds, and is at -35.
101 – 105	You send foe into a twirling spin to land 5' away. He breaks 5 ribs on landing. Foe takes 15 Hits and is stunned 3 rounds.
106 – 110	You grapple foe, and send him flying 10', knocking him out for 1d10 hours in the process. Foe takes 16 Hits and is at -30 to all actions.
111 – 115	Your grapple snaps an arm bone and leaves foe in agonizing pain. Foe takes 17 Hits, is stunned 4 rounds, bleeds 1 per round, and is at -45.
116 – 119	You are a little over-zealous. You send him flying against the nearest hard surface, breaking one of his legs. Foe takes 18 Hits, is stunned 5 rounds, bleeds 2 per round, and is down.
120	You crush his windpipe–he dies in 12 rounds. Foe also takes 20 Hits, is stunned 12 rounds, bleeds 2 per round, and is at -50.

Martial Arts Strikes Criticals	
(-19) – (-10)	A pale piece of pig' s ear could do better than that. 1 Hit.
(-9) – 0	Remember! Proper breathing! 2 Hits.
01 – 10	Straighten your elbow next time. 3 Hits.
11 – 20	Blow to the shoulder. 5 Hits.
21 – 30	Glancing kidney strike. 7 Hits.
31 – 40	Nice blow to the chest. Foe takes 8 Hits and is at-5.
41 – 50	Foe falls back from the blow trying to recover. Foe takes 9 Hits and is at -10.
51 – 60	Bad bone bruise on his leg. Foe takes 10 Hits, is stunned 1 round, and is at -15.
61 – 70	Thunk. Nice, solid kick to the ribs. Foe takes 12 Hits and is stunned 1 round.
71 – 80	You slip inside his guard to deliver hard shoulder blow. Foe takes 13 Hits, is stunned 2 rounds, and is at -20.
81 – 85	Solid blow spins foe to face the opposite direction. Foe takes 15 Hits, is stunned 2 rounds, and is at -25.
86 – 90	Quick, hard chest strike knocks wind out of foe. He takes 16 Hits and is stunned 3 rounds.
91 – 95	Crunch! You heard foot bones break. Foe takes 18 Hits, is stunned 4 rounds, and is at -30.
96 – 100	Dislocate and break weapon arm. Foe takes 19 Hits, is stunned 4 rounds, and is at -35.
101 – 105	Foe flies head over heels to land on his face. Foe takes 20 Hits, is stunned 5 rounds, and bleeds 1 per round.
106 – 110	Kick to the solar plexus sends foe to the ground. Foe takes 22 Hits, is stunned 6 rounds, bleeds 1 per round, and is at -40.
111 – 115	Savage blow tears leg muscles and tendons. Foe takes 23 Hits, is stunned 6 rounds, bleeds 2 per round, and is at -45.
116 – 119	Your kick sends foe' s head bouncing off nearest hard surface. He is unconscious for 1d10 minutes before dying. Foe takes 25 Hits and bleeds 2 per round.
120	Precise combination of blows leaves foe in a dead, mangled heap. Foe takes 27 Hits.

Martial Arts Sweeps/unbalancing Criticals	
(-19) – (-10)	Try not to trip. 1 Hit.
(-9) – 0	A love tap? 2 Hits.
01 – 10	Dazzling. 3 Hits.
11 – 20	Your acrobatics are more effective this time. 4 Hits.
21 – 30	Your attack knocks foe to one knee, but he recovers quickly. 5 Hits.
31 – 40	Foe stumbles and takes 6 Hits.
41 – 50	Elbow to the face! Foe takes 7 Hits and is stunned 1 round.
51 – 60	Foe falls. Foe takes 8 Hits and is stunned 1 round.
61 – 70	Foe stays on his feet, but is badly bruised. Foe takes 9 Hits, is stunned 1 round, and is at -5. You gain a +10 against him next round.
71 – 80	Well done. You knocked him to the ground. Foe takes 10 Hits and is stunned 3 rounds.
81 – 85	Sweep sends foe to the ground hard. He fractures a few ribs in the fall. Foe takes 11 Hits, is stunned 4 rounds, and is at -10.
86 – 90	Perfect toss sends foe stumbling 5' away. Foe takes 12 Hits and is stunned 5 rounds.
91 – 95	You spring back to your feet after a quick roll with foe. He is still lying on the ground from the sudden attack. Foe takes 13 Hits, is stunned 6 rounds, and is at -15.
96 – 100	Sweep to the shin sprains foe' s ankle. Foe takes 16 Hits and is stunned 6 rounds.
101 – 105	Foe is flipped backwards and staggers away. Foe takes 15 Hits, is stunned 7 rounds, and is at -20.
106 – 110	Your spinning leg sweep sends foe crashing to the ground, breaking his shoulder. Foe takes 15 Hits, is stunned 7 rounds, and bleeds 1 per round. +25 to your action the next round.
111 – 115	With subtle grace you send foe rolling through the air to land in an unconscious, twisted heap. (1D10 minutes.) Foe takes 17 Hits, is stunned 8 rounds (upon awakening), and is at -25.
116 – 119	Snazzy throw breaks foe' s collarbone, shoulder and arm. Foe is unconscious 2D10 minutes. Foe takes 18 Hits, is stunned 8 rounds (upon awakening), bleeds 2 per round, and is at -30.
120	You smash foe against multiple objects. There is no telling which killed him. Foe takes 20 Hits. You gain a +30 to your actions for the next 2 rounds.

Large Criticals	
(-19) – (-10)	Foe is tougher than you thought; you break your weapon. 1 Hit.
(-9) – 0	Foe doesn' t notice your attack. 2 Hits.
01 – 10	Nice shot! He almost noticed you that time. 4 Hits.
11 – 20	Good head blow, but this could take a while. Foe is big! 6 Hits.
21 – 30	You' ve bruised his side. 8 Hits.
31 – 40	Blow to his forearm. 10 Hits.
41 – 50	You hit him in the back. 12 Hits.
51 – 60	Solid strike has visibly hurt foe. 13 Hits.
61 – 70	Nice slash to thigh. 15 Hits.
71 – 80	The fur is flying from that strike to his shoulder. Foe takes 17 Hits and is at -5.
81 – 85	Skillful strike to his abdomen. Foe takes 19 Hits and is at -10.
86 – 90	You miss his weapon arm but hit his knee. Foe takes 21 Hits and is stunned 1 round.
91 – 95	Strike to the abdomen knocks foe to the ground. Foe takes 23 Hits, is stunned 1 round, bleeds 1 per round, and is at -20.
96 – 100	Reverse thrust to the legs. Foe takes 24 Hits, is stunned 1 round, bleeds 1 per round, and is at -15.
101 – 105	Hard blow to the chest. Foe takes 26 Hits, is stunned 2 rounds, and bleeds 1 per round.
106 – 110	What a shot! Foe flips over backwards, cracking skull on impact. Foe takes 28 Hits, is stunned 3 rounds, bleeds 2 per round, and is at -25.
111 – 115	Blow injures major organs. Foe takes 30 Hits, is stunned 5 rounds, bleeds 2 per round, and is at -30. You gain a bonus of +25 to your action next round.
116 – 119	Your savage blow crushes his jugular vein. Foe falls and dies in 6 inactive rounds. Foe takes 32 Hits and bleeds 2 per round.
120	Massive head wound. Foe dies instantly. You gain a +35 to your action next round. Foe takes 35 Hits.

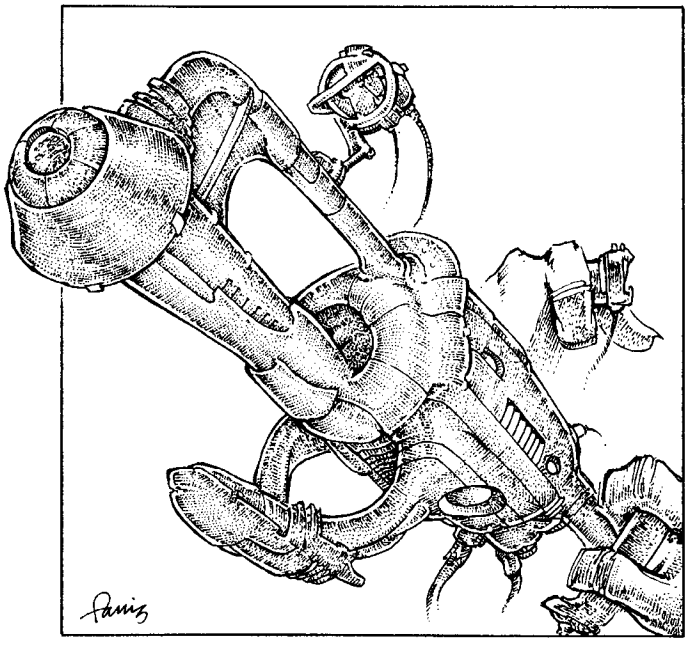
Huge Criticals	
(-19) – (-10)	You do some damage, but there is a lot of foe to damage. Your weapon breaks during the attack, but at least you give him 1 Hit.
(-9) – 0	You may have scratched foe' s hide, but it' s hard to tell. 2 Hits.
01 – 10	Foe thinks you are an insect and tries to swat you. 3 Hits.
11 – 20	This won' t be easy. Foe' s hide deflects all but the strongest blows. 4 Hits.
21 – 30	You hit him in the arm. 6 Hits.
31 – 40	Foe has a very hard head. 7 Hits.
41 – 50	Right on his nose. 8 Hits.
51 – 60	Strike to the ribs bruises the big fella. 10 Hits.
61 – 70	You strike at his exposed neck. 11 Hits.
71 – 80	Your strike staggers foe for a moment. 12 Hits.
81 – 85	Your strike penetrates his leg. Foe takes 12 Hits and is at -5.
86 – 90	A solid blow to his arm. 15 Hits.
91 – 95	Lucky shot cracks his ribs. Foe takes 16 Hits, is stunned 1 round, and is at -10.
96 – 100	Resounding blow knocks foe prone. Foe takes 18 Hits, is stunned 1 round, and bleeds 1 per round.
101 – 105	Strike to the neck draws blood. Foe takes 19 Hits, is stunned 1 round, bleeds 1 per round, and is at -15. You gain a +25 to your next 2 actions.
106 – 110	Messy chest strike leaves you covered in blood. Foe takes 20 Hits, is stunned 2 rounds, and bleeds 1 per round.
111 – 115	Classic strike cracks several vertebrae. Foe takes 23 Hits, is stunned 4 rounds, bleeds 2 per round, and is at -25.
116 – 119	Major abdominal wound. Foe takes 22 Hits, is stunned 4 rounds, bleeds 3 per round, and is at -30.
120	You' ve crushed his skull and his spine, and he dies instantly. Foe takes 25 Hits.

Heat Criticals	
(-19) – (-10)	Hot air singes foe. 1 Hit.
(-9) – 0	Is that a wisp of smoke? 3 Hits.
01 – 10	Strong heat gets foe' s attention. 5 Hits.
11 – 20	You trying to hurt foe or give him a hot foot? 8 Hits.
21 – 30	That was enough to light a torch. 10 Hits.
31 – 40	Minor burns. Foe takes 12 Hits, and is at -5.
41 – 50	Smoke from smoldering clothing blinds foe. Foe takes 15 Hits and is stunned 1 round.
51 – 60	Foe' s arms are slightly par-broiled by now. Foe takes 18 Hits, is stunned 3 rounds, and is at -10.
61 – 70	Foe' s chest is lightly browned. Foe takes 19 Hits, is stunned for 3 rounds, and is at-15.
71 – 80	Fiery blast knocks foe down. Foe takes 22 Hits, is stunned 4 rounds, and bleeds 1 hit per round.
81 – 85	Major burns all over foe' s body. Foe takes 24 Hits, is stunned 5 rounds, bleeds 1 per round, and is at -20.
86 – 90	Searing blast to abdomen. Foe takes 27 Hits, is stunned 5 rounds, bleeds 1 per round, and is at -25.
91 – 95	Flames engulf foes hair and face. Foe takes 29 Hits, is stunned 6 rounds, and bleeds 2 per round.
96 – 100	Blast burns foe' s lower body. Foe takes 31 Hits, is stunned 6 rounds, bleeds 3 per round, and is at -30.
101 – 105	Scalding blast roasts foe' s torso, burning away his clothing. Foe takes 34 Hits, is stunned 7 rounds, bleeds 3 per round, and is at -35.
106 – 110	Foes organs are destroyed and he dies in 12 stunned rounds. Foe takes 36 Hits and bleeds 4 per round.
111 – 115	Blast sets foe' s legs alight and spread to the rest of his body. Death in 5 inactive rounds due to shock and nerve damage. Foe takes 38 Hits and bleeds 7 per round.
116 – 119	Massive third degree burns to foe' s body kill him. Foe takes 41 Hits.
120	Fiery blast chars foe' s chest and abdomen, destroying organs and killing him instantly. Foe takes 45 Hits.

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Incendiary Grenade				
Mark I	Tiny	01-05	None	N/A
Mark II	Small	01-05	None	N/A
Mark III	Medium	01-05	None	N/A
Mark IV	Large	01-05	None	N/A
Mark V	Huge	01-05	None	N/A

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Grenades	3m	-	-
Grenade Launcher	30m	20	15m
Grenade Launcher Attachment	30m	20	15m



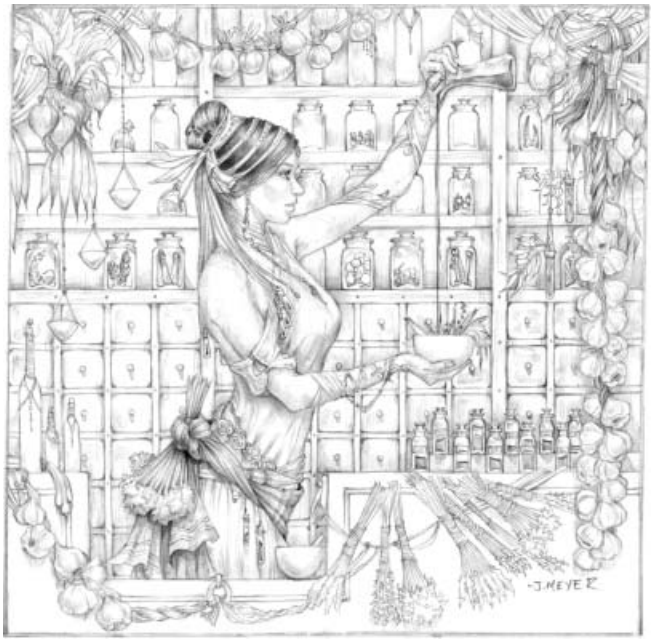
Cold Criticals	
(-19) – (-10)	Did you feel a draft? Foe takes 1 Hit.
(-9) – 0	You gave foe goose bumps. 3 Hits.
01 – 10	Foe is covered in a light frost. 5 Hits.
11 – 20	Light blast chills foe. 7 Hits.
21 – 30	Chilling strike to his leg. 9 Hits.
31 – 40	Frosty blast to torso. Foe takes 12 Hits and is at -5.
41 – 50	The arctic blast numbs foe' s arm. Foe takes 14 Hits, is stunned 1 round, and is at -10.
51 – 60	Chilly blast cracks ribs. Foe takes 16 Hits and is stunned 2 rounds.
61 – 70	Blast freezes lower leg. Foe takes 18 Hits, is stunned 3 rounds, and is at-15.
71 – 80	Blast send foe spinning. Foe takes 20 Hits, is stunned 4 rounds, and is at -20.
81 – 85	Icy blast produces frostbitten hands. Foe takes 23 Hits, is stunned 5 rounds, and bleeds 1 per round.
86 – 90	Arctic air pierces foe' s chest. Foe takes 25 Hits, is stunned 5 rounds, bleeds 1 per round, and is at -25.
91 – 95	Blast freezes foe' s weapon arm. Foe takes 27 Hits, is stunned 6 rounds, bleeds 2 per round, and is at -30.
96 – 100	Blast partially freezes foe' s leg. Foe takes 29 Hits, is stunned 6 rounds, and bleeds 2 per round.
101 – 105	Blast cracks hip and freezes muscles. Foe takes 31 Hits, is stunned 7 rounds, bleeds 3 per round, and is at -35.
106 – 110	Foe' s lungs are damaged. Foe takes 34 Hits, is stunned 7 rounds, bleeds 3 per round, and is at -40. He lapses into unconscious-ness in 7 rounds.
111 – 115	Required bodily fluids are frozen. Foe dies in 8 incapacitated rounds of agony. Foe takes 36 Hits and bleeds 5 per round.
116 – 119	Blast sends foe flying 10' and kills him. Foe takes 38 Hits.
120	Cold freezes foe' s heart, killing him in 1 round. Foe takes 42 Hits

Electrical Criticals	
(-19) – (-10)	The energy dissipates. 1 Hit.
(-9) – 0	The charge tickles foe. 3 Hits.
01 – 10	Look! Sparks! 6 Hits.
11 – 20	Bolt jumps from foe' s weapon into the ground. You have initiative next round and foe takes 8 Hits.
21 – 30	Foe' s hair stands on end. Frightening! Foe takes 11 Hits and is at -5.
31 – 40	Blast leaves foe' s sleeves smoldering. Foe takes 14 Hits, is stunned 1 round, and is at -10.
41 – 50	Jolt to the heart. Foe takes 16 Hits and is stunned 2 rounds.
51 – 60	Electrifying strike to the legs. Foe takes 19 Hits, is stunned 3 rounds, and is at -15.
61 – 70	Energy ripples over foe' s body. Foe takes 22 Hits, is stunned 4 rounds, and is at -20.
71 – 80	Chest strike. Foe takes 24 Hits, is stunned for 5 rounds, and is at -25.
81 – 85	You just invented the x-ray. The "patient" takes 27 Hits and is stunned 5 rounds.
86 – 90	Foe' s arm nerves are damaged. Foe takes 29 Hits, is stunned 6 rounds, bleeds 1 per round, and is at -30.
91 – 95	Strike injures major leg nerves and muscles. Foe takes 32 Hits, is stunned 7 rounds, bleeds 1 per round, and is at -5.
96 – 100	Massive shock to the nervous system knocks foe to the ground. Foe takes 35 Hits, is stunned 7 rounds, and bleeds 2 per round.
101 – 105	Blast causes convulsions. Foe takes 37 Hits, is stunned 8 rounds, bleeds 2 per round, and is at -40.
106 – 110	Incandescent energy engulfs foe as he writhes in agony. Foe takes 40 Hits, is stunned 8 rounds, bleeds 3 per round, and is at -45. Death in 8 rounds.
111 – 115	Blast overloads foe' s nervous system, killing him after 6 rounds of inactivity. Foe takes 43 Hits.
116 – 119	Blast envelopes foe in coruscating energies, killing him in 3 rounds. Foe takes 45 Hits and is unconscious. What a light show!
120	Blast rends foe' s body, shattering his spine and killing him. Foe takes 45 Hits.

Impact Criticals	
(-19) – (-10)	Stop tickling! 1 Hit.
(-9) – 0	Gentle tap. 3 Hits.
01 – 10	Firm strike causes foe to step back and get his bearings. 5 Hits.
11 – 20	A solid shot unnerves foe. 7 Hits.
21 – 30	Blast staggers foe. Foe takes 9 Hits and is at -5 to all actions. He must spend the next round just getting up off the ground.
31 – 40	Strike sends foe reeling 10'. Foe takes 11 Hits, is stunned 1 round, and is at -10.
41 – 50	Strike to back. Foe takes 13 Hits and is stunned 2 rounds.
51 – 60	Cruel blow to foe' s shoulder. Foe takes 15 Hits, is stunned 3 rounds, and is at -15.
61 – 70	Whack! Straight to the face! Foe takes 17 Hits, is stunned 4 rounds, and is at -20.
71 – 80	Chest blast staggers foe. Foe takes 19 Hits, is stunned 5 rounds, and is at -25.
81 – 85	Blast to legs knocks foe down. Foe takes 21 Hits and is stunned 6 rounds.
86 – 90	Blast to shoulder. Foe takes 23 Hits, is stunned 4 rounds, and is at -30.
91 – 95	Vicious blast knocks foe head over heels. Foe takes 25 Hits, is stunned 7 rounds, and is at -35.
96 – 100	Ripping blast tears foe' s arm muscles and tendons. Foe takes 27 Hits and is stunned 6 rounds.
101 – 105	Blast shatters rib and shoulder bones. Foe takes 29 Hits, is stunned 8 rounds, bleeds 1 per round, and is at -40.
106 – 110	Jarring strike sends foe airborne, rendering him unconscious for 1D10 hours. Foe takes 31 Hits, is stunned 8 rounds upon awakening, bleeds 1 per round, and is -45.
111 – 115	Blast cracks foe' s skull and jaw, rendering him unconscious for the 1D10 minutes it takes him to die. Foe takes 33 Hits and bleeds 1 per round.
116 – 119	Blast shatters every bone in foe' s body, killing him after 3 rounds of whimpering inactivity. Foe takes 35 Hits and bleeds 2 per round.
120	Blast breaks foe' s neck and crushes his windpipe, killing him instantly. Foe takes 35 Hits.

External Poison Criticals	
(-19) – (-10)	Foe looks just fine. 1 Hit.
(-9) – 0	Is that a rash? 3 Hits.
01 – 10	Foe shows signs of discomfort. 6 Hits.
11 – 20	Foe is sweating and shaking. 8 Hits.
21 – 30	Foe is covered in red splotches. Foe takes 11 Hits and is at -5.
31 – 40	Foe' s arms feel like they are burning! 14 Hits.
41 – 50	Foe screams from the sudden, searing chest pain. Foe takes 16 Hits and is at -15.
51 – 60	Jarring pain rips through foe' s nerves. Foe takes 19 Hits and is stunned 1 round.
61 – 70	Foe doubles over from piercing pain in his abdomen. Foe takes 22 Hits, is stunned 2 rounds, bleeds 1 per round, and is at -15.
71 – 80	Foe is staggering with intense leg pain. Foe takes 24 Hits, is stunned 3 rounds, bleeds 1 per round, and is at -20.
81 – 85	Foe loses a large patch of skin and flesh. Foe takes 27 Hits, is stunned 4 rounds, bleeds 1 per round, and is at -25.
86 – 90	Foe' s arm flesh melts. Foe takes 29 Hits, is stunned 4 rounds, and bleeds 2 per round.
91 – 95	Foe' s torso flesh looks leprous as bits and chunks begin to fall off. Foe takes 32 Hits, is stunned 5 rounds, bleeds 2 per round, and is at -30.
96 – 100	Foe' s body is a mass of open wounds. Foe takes 35 Hits, is stunned 5 rounds, bleeds 2 per round, and is at -35.
101 – 105	Foe screams as the skin on his face is burned away. Foe takes 37 Hits, is stunned 6 rounds, bleeds 3 per round, and is at -40.
106 – 110	Foe' s left foot and ankle melt away. He is writhing in helpless agony for the 12 rounds it takes him to die. Foe takes 40 Hits, is stunned 12 rounds, and bleeds 3 per round.
111 – 115	Foe dies after 12 helpless rounds of agonizing pain as his skin dissolves. Foe takes 43 Hits, is stunned 12 rounds, bleeds 4 per round, and is at -50.
116 – 119	Foe is covered in acrid smoke as his internal organs are destroyed. Foe dies in 6 rounds. Foe takes 45 Hits, is stunned 6 rounds, bleeds 3 per round, and is at -45.
120	All that remains of foe are his head and torso –and he is quite dead. Foe takes 55 Hits.

Internal Poison Criticals	
(-19) – (-10)	1 Hit.
(-9) – 0	Is it heartburn? 3 Hits.
01 – 10	Foe is green around the gills. 5 Hits.
11 – 20	Foe knows something is wrong now. Foe takes 8 Hits and is at -5.
21 – 30	Foe is woozy and light-headed. 10 Hits.
31 – 40	What a pretty shade of green. Foe takes 12 Hits, is stunned 1 round, and is at -10.
41 – 50	Foe is extremely nauseous. Foe takes 15 Hits, is stunned 2 rounds, and is at -15.
51 – 60	Foe is vomiting! Foe takes 17 Hits and is stunned 3 rounds.
61 – 70	Foe' s stomach feels like it is on fire. Foe takes 19 Hits, is stunned 4 rounds, and is at -20.
71 – 80	Foe is having severe cramps. Foe takes 22 Hits, is stunned 5 rounds, bleeds 1 per round, and is at -25.
81 – 85	Foe stumbles in agony. Foe takes 24 Hits, is stunned 6 rounds, bleeds 1 per round, and is at -30.
86 – 90	Foe coughs blood. Foe takes 29 Hits, is stunned 7 rounds, and bleeds 1 per round.
91 – 95	Foe begins bleeding internally. Foe takes 29 Hits, is stunned 7 rounds, bleeds 1 per round, and is at -35.
96 – 100	Foe has the funniest look on his face as he starts bleeding from his pores. Foe takes 31 Hits, is stunned 7 rounds, bleeds 2 per round, and is at -40.
101 – 105	Did he just cough up a lung? Foe takes 34 Hits, is stunned 8 rounds, bleeds 3 per round, and is at -45.
106 – 110	It takes 12 minutes for the fluids within his body to congeal and for him to die. Foe takes 36 Hits, is stunned 8 rounds before losing consciousness, and bleeds 3 per round.
111 – 115	Foe collapses and screams as his internal organs slowly liquefy. (Death in 1D10 minutes.) Foe takes 38 Hits and bleeds 3 per round. Foe is inactive.
116 – 119	Foe collapses and dies in 1D10 rounds as nervous system disintegrates. Foe takes 41 Hits, is stunned 9 rounds, bleeds 4 per round, and is at -55.
120	Poison dissolves foe' s brain, killing him instantly. Foe takes 41 Hits.



Ballistic Impact Criticals	
(-19) – (-10)	Foe will have a bruise tomorrow. 2 Hits.
(-9) – 0	Shot bruises side of arm. 4 Hits.
01 – 10	Low shot ricochets off leg. Foe almost stumbles. 6 Hits.
11 – 20	Shot to side causes momentary pain and big bruise. 8 Hits.
21 – 30	Stomach shot causes foe to double up in shock. Foe takes 10 Hits and is stunned 1 round.
31 – 40	Chest strike staggers foe backwards 1 m. Foe takes 13 hits and is stunned for 1 round.
41 – 50	Lucky shot cracks a rib. Foe takes 15 Hits, is stunned 2 rounds and is at –5.
51 – 60	Foe blinks back tears as shot strikes arm. Foe takes 17 Hits, is stunned 3 rounds and is at –5. Foe drops anything held by that arm.
61 – 70	Leg shot knocks foe down. Something sprained in the fall, but nothing broken. Foe takes 20 Hits, is stunned 3 rounds and is at –10.
71 – 80	Is that where the solar plexus is? Anyway, foe takes 23 Hits, is stunned 4 rounds, and is at –10.
81 – 85	Ouch! Groin shot. Foe takes 24 Hits, is stunned 4 rounds, and is at –15 from pain. Foe is very unhappy with you.
86 – 90	Excellent shot dislocates shoulder. Foe takes 26 Hits, is stunned 5 rounds, and is at –20. Foe drops anything held in that arm.
91 – 95	Shot to leg breaks bone. Foe takes 28 Hits, is stunned 6 rounds, and is at –20. Foe drops to the ground to reassess his options.
96 – 100	You can almost hear the snap as your shot breaks foe' s arm. Foe takes 30 Hits, is stunned 6 rounds, and is at –20.
101 – 105	Shot breaks several ribs, one of which punctures a lung. Foe takes 35 Hits, is stunned for 7 rounds, is at –30, and is bleeding internally at 1 hit per round. Foe should avoid strenuous activity (like combat) and seek medical attention.
106 – 110	Foe ain' t talking to you (or anyone else). Your bullet breaks his jaw. Foe takes 36 Hits, is stunned for 8 rounds, is at –30, and is bleeding at 2 hits per round. Probably bit his tongue.
111 – 115	Foe sees stars as a result of your head shot. Foe takes 38 Hits, is at –30, and drops to the ground unconscious for 1 hour.
116 – 119	Bullet hits foe' s neck. Foe takes 40 Hits, is stunned for 10 rounds, and is at –40 to those maneuvers still possible now that foe is paralyzed from the neck down. Medic!
120	Head shot hits the target and shatters part of skull. Foe takes 45 Hits and dies instantly.

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Assault Rifle	Medium	01-03	30	15
Assault Rifle (recoilless)	Medium	01-03	20	0
Holdout Gun	Tiny	01-03	None	N/A
Hunting Rifle	Medium	01-03	None	N/A
Machine Gun - heavy	Huge	01-05	60	60
Machine Gun – light	Large	01-05	40	20
Machine Gun - medium	Large	01-05	50	40
Pistol	Small	01-03	20	10
Pistol (recoilless)	Small	01-03	10	0
Revolver	Small	01-03	None	N/A
Submachine Gun	Medium	01-03	30	15

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Assault Rifle	40m	20	20m
Assault Rifle (recoilless)	40m	20	20m
Holdout Gun	5m	5	2.5m
Hunting Rifle	50m	15	25m
Machine Gun –heavy	100m	50	50m
Machine Gun –light	30m	30	15m
Machine Gun –medium	60m	40	30m
Pistol	10m	10	5m
Pistol (recoilless)	10m	10	5m
Revolver	10m	10	5m
Submachine Gun	20m	20	10m

Ballistic Puncture Criticals	
(-19) – (-10)	Was that a warning shot? 1 Hit
(-9) – 0	You barely scratched him. 3 Hits
01 – 10	Your bullet gouges a shallow scar. 5 Hits
11 – 20	Foe should stick to that diet. Bullet grazes foe' s side. 7 Hits
21 – 30	Just another flesh wound. 9 Hits
31 – 40	Bullet passes cleanly through foe' s shoulder. Foe takes 12 Hits and is bleeding at 1 per round
41 – 50	Nasty upper leg wound. Foe is stunned 1 round in pain, is bleeding at 1 per round and takes 15 Hits
51 – 60	Shot hits weapon arm, tearing muscle as it passes through. Foe is at –10, stunned 1 round, bleeding at 1 per round, and takes 18 Hits.
61 – 70	Low shot breaks bone in foe' s foot. Foe is at –10, stunned 2 rounds, bleeding at 2 per round, and takes 21 Hits. Foe falls down.
71 – 80	Foe takes bullet in side. Foe is stunned 2 rounds, bleeding at 2 per round and takes 24 Hits.
81 – 85	Bullet breaks one of foe' s ribs en route through foe. Foe is stunned 3 rounds, at –15 from pain, and bleeding at 3 per round. Foe also takes 27 Hits.
86 – 90	Foe is hit in the knee. Foe is stunned 3 rounds, at –20, bleeding 3 per round, and suffers 30 Hits.
91 – 95	Bullet catches foe near hip. Foe is stunned 3 rounds, bleeding 4 per round and takes 33 Hits.
96 – 100	Bullet gouges foe' s cheek and removes his ear. Foe is stunned 4 rounds, bleeding 4 per round and takes 36 Hits.
101 – 105	Bullet tears its way through foe' s weapon arm, breaking it. Foe is at –30, stunned 4 rounds, bleeding 5 per round and takes 39 Hits.
106 – 110	Agonizing stomach wound perforates intestines. Foe is at –40, stunned 5 rounds, bleeding 5 per round and takes 42 Hits. Foe will collapse in 12 rounds and die in 1 hour.
111 – 115	Bullet leaves a trail of destruction through foe' s vital organs. Foe takes 45 Hits, is stunned 5 rounds, bleeding at 7 per round and dies in 6 inactive rounds.
116 – 119	Bullet intersects foe' s heart. Foe is bleeding at 9 per round, takes 48 Hits, and dies in 3 inactive rounds.
120	Foe is shot between the eyes. Bullet destroys brain and foe dies instantly. 50 Hits

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Assault Rifle	Medium	01-03	30	15
Assault Rifle (recoilless)	Medium	01-03	20	0
Holdout Gun	Tiny	01-03	None	N/A
Hunting Rifle	Medium	01-03	None	N/A
Machine Gun - heavy	Huge	01-05	60	60
Machine Gun – light	Large	01-05	40	20
Machine Gun - medium	Large	01-05	50	40
Pistol	Small	01-03	20	10
Pistol (recoilless)	Small	01-03	10	0
Revolver	Small	01-03	None	N/A
Submachine Gun	Medium	01-03	30	15

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Assault Rifle	40m	20	20m
Assault Rifle (recoilless)	40m	20	20m
Holdout Gun	5m	5	2.5m
Hunting Rifle	50m	15	25m
Machine Gun –heavy	100m	50	50m
Machine Gun –light	30m	30	15m
Machine Gun –medium	60m	40	30m
Pistol	10m	10	5m
Pistol (recoilless)	10m	10	5m
Revolver	10m	10	5m
Submachine Gun	20m	20	10m

Blaster Criticals	
(-19) – (-10)	Careless shot manages to hit target. Foe takes 5 Hits
(-9) – 0	Foe suffers a mild surface burn. Foe takes 8 Hits
01 – 10	Bolt singes foe, leaving a moderate surface burn that looks worse than it is. Foe takes 11 Hits
11 – 20	Poor angle causes bolt to produce a moderate surface burn across foe' s chest rather than going deep. Foe suffers 12 Hits.
21 – 30	Bolt catches foe in arm, inflicting a deep (but mild) burn. Foe takes 14 Hits and is stunned 1 round
31 – 40	Bolt finds foe' s leg, inducing a deep moderate burn, but lacks the punch for a knockdown. Foe is stunned 2 rounds, and takes 17 Hits
41 – 50	Bolt splatters across foe' s abdomen, leaving an ugly scorching wound. Foe is stunned for 2 rounds, bleeding 1 hit per round, at –10 from the pain and takes 20 Hits.
51 – 60	Bolt hits upper arm dead centre for a severe burn. Foe is stunned 3 rounds, bleeding 2 hits per round, at –10, and takes 23 Hits
61 – 70	Bolt sears side of foe' s throat (severe burn). He really dislikes you now. Foe is stunned 3 rounds, bleeding 2 per round, at –15, and takes 25 Hits
71 – 80	Bolt find foe' s lower leg, frying various muscles and tendons, causing foe to drop to the ground. Foe is bleeding 3 per round, stunned for 4 rounds, and at –20. Foe also takes 28 Hits
81 – 85	Bolt savages foe' s shoulder, forcing a Medium Agility maneuver to retain anything held by that arm. Foe is bleeding 3 per round, stunned for 5 rounds, and at –20. Foe takes 32 Hits
86 – 90	Good shot strikes side of foe' s head (01-50 left, 51-100 right), burning any hair, the scalp and destroying any external ear there (-50 to hearing-based Perception maneuvers). Foe is bleeding 4 per round, stunned for 6 rounds, at –25, and takes 38 Hits
91 – 95	Low shot delivers severe burn to foe' s groin. Harsh. Foe is bleeding 4 per round, stunned for 7 rounds, at –25 and takes 42 Hits
96 – 100	Foe' s hand intercepts bolt and is immediately cooked. Foe also drops anything held in that hand. Foe is bleeding 5 per round, stunned for 8 rounds, at –30, and suffers 45 Hits
101 – 105	Bolt penetrates deep into foe' s torso, inflicting damage to various organs. Foe takes 49 Hits, is bleeding at 6 per round, stunned for 10 rounds from agony, and at –40. Foe also falls down.
106 – 110	Bolt enters foe' s chest, damaging foe' s lungs and heart. Foe takes 54 Hits, is bleeding internally at 7 per round, stunned for 12 rounds, at –45, and collapses to ground. Foe dies thirty minutes later.
111 – 115	Blaster bolt takes foe in the neck. Foe takes 60 Hits, is bleeding internally at 9 per round, stunned for 6 rounds, and at –50. Foe dies in 6 painful and inactive rounds.
116 – 119	Foe loses face, literally. Any organs there (e.g. nose, eyes, mouth in humans) destroyed. Foe takes 66 Hits, is bleeding internally at 12 per round, at –50, and dies in 3 inactive rounds.
120	Head shot eliminates foe' s brain. Foe dies instantly. Foe takes 72 Hits

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Assault Blaster	Medium	01-02	35	0
Blaster Pistol	Small	01-02	25	0
Hunting Blaster	Medium	01-02	None	N/A
Miniblaster	Tiny	01-02	None	N/A
Support Blaster –heavy	Huge	01-04	60	60
Support Blaster –light	Large	01-04	40	20
Support Blaster –medium	Large	01-04	50	40

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Assault Blaster	15m	30	7.5m
Blaster Pistol	5m	20	2.5m
Hunting Blaster	25m	30	12.5m
Miniblaster	2m	10	1m
Support Blaster –heavy	40m	60	20m
Support Blaster –light	20m	40	10m
Support Blaster –medium	30m	50	15m

Laser Criticals	
(-19) – (-10)	Close shot warms up foe. Foe takes 3 Hits
(-9) – 0	Ill-aimed shot is no worse than bad sunburn. Foe takes 6 Hits
01 – 10	Laser bolt grazes foe' s arm causing moderate surface burn. Foe takes 9 Hits
11 – 20	Bolt causes moderate surface burn on foe' s leg. Foe suffers 10 Hits.
21 – 30	Foe suffers moderate surface burn across side. Better luck next time. Foe takes 12 Hits and is stunned 1 round
31 – 40	Bolt penetrates through outer skin of foe' s arm, leaving a deep moderate burn. Foe is stunned 1 round, and takes 15 Hits
41 – 50	Shot catches foe in calf, scorching through skin to damage musc1es and tendons. Foe is stunned 1 round, bleeding 1 hit per round, at -10, and takes 18 Hits.
51 – 60	Bolt strikes foe' s shoulder, causing a severe burn. Foe is stunned 2 rounds, bleeding 1 per round, at –10, and takes 21 Hits
61 – 70	Bolt sears across foe' s chest. Foe is stunned 3 rounds, bleeding 2 per round, at –15, and takes 23 Hits
71 – 80	Foe takes bolt directly in lower arm. Foe is bleeding 2 per round, stunned for 4 rounds, and at –20. Foe also takes 26 Hits
81 – 85	Bolt fries large chunk of foe' s thigh. Foe is bleeding 3 per round, stunned for 5 rounds, and at –20. Foe takes 29 Hits
86 – 90	Attempt to perform appendectomy by laser bolt nearly succeeds. Foe is bleeding 3 per round, stunned for 6 rounds, at –25, and takes 35 Hits
91 – 95	Good shot savagely burns lower half of foe' s face. Foe is bleeding 4 per round, stunned for 7 rounds, at –25 and takes 39 Hits
96 – 100	Wave of laser fire burns foe from groin to navel. Foe is bleeding 4 per round, stunned for 8 rounds, at –30, and suffers 42 Hits
101 – 105	Lucky shot catches foe' s hand. Foe takes 45 Hits, is bleeding 5 per round, stunned for 10 rounds from agony, and at –40. Foe also drops anything held in that hand as it is now useless.
106 – 110	Well-aimed shot burns deep into foe' s stomach cavity, ruining multiple organs. Foe takes 50 Hits, is bleeding internally at 6 per round, stunned for 12 rounds, at –40, and collapses to ground. Foe dies one hour later.
111 – 115	Laser bolt drills through into lung and cooks it. Foe takes 55 Hits, is bleeding internally at 8 per round, stunned for 6 rounds, and at –50. Foe dies in 6 painful rounds.
116 – 119	Bolt burns into foe' s heart, boiling the blood in the chambers. Foe takes 60 Hits, is bleeding internally at 10 per round, at –50, and dies in 3 inactive rounds.
120	Perfect shot takes foe in eye, blinding foe immediately, before bolt proceeds to fry brain. Foe dies instantly. Foe takes 65 Hits

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Hunting Laser	Medium	01-02	None	N/A
Laser Pistol	Small	01-02	15	0
Assault Laser	Medium	01-02	25	0
Minilaser	Tiny	01-02	None	N/A
Support Laser –heavy	Huge	01-04	50	40
Support Laser –light	Large	01-04	30	20
Support Laser –medium	Large	01-04	40	30

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Hunting Laser	40m	20	20m
Laser Pistol	10m	10	5m
Assault Laser	30m	20	15m
Minilaser	5m	5	2.5m
Support Laser – heavy	80m	50	40m
Support Laser – light	40m	30	20m
Support Laser - medium	60m	40	30m

Neuro Criticals	
(-19) – (-10)	Foe stunned 1 round. You do know how to use this thing?
(-9) – 0	Wow! Foe is stunned for 2 rounds.
01 – 10	Foe is stunned for 3 rounds. Act now while he' s stunned.
11 – 20	Foe is stunned for 4 rounds. You have his full attention.
21 – 30	Foe is stunned for 4 rounds and is at –5 due to "pins and needles" in his leg (sensation will last 1 minute). He' s hopping mad.
31 – 40	Foe takes 5 rounds of stunning and finds that his arm is numb (-5 penalty for 1 minute.) Arm still usable, just does not feel right.
41 – 50	Shot takes foe in lower face. Foe is stunned 5 rounds and unable to talk for 1 minute.
51 – 60	No nonsense chest shot. Foe stunned 6 rnds.
61 – 70	Leg shot delivers 6 rounds of stunning. Foe' s leg is paralyzed for 6 rounds – foe drops to the ground.
71 – 80	Foe' s arm takes shot rendering it paralyzed for 7 rounds. Foe stunned 7 rounds and drops anything held by that arm.
81 – 85	Foe takes shot in lower torso. Both legs paralyzed for 8 rounds, causing foe to collapse. Foe is stunned 8 rounds.
86 – 90	Upper chest shot causes nerve bundles to misfire. Foe paralyzed for 9 rounds from neck down. Foe also stunned 9 rounds.
91 – 95	Foe slips into unconsciousness for 3 rounds. If he comes round, he' s then stunned for 9 rounds and at –20 for next minute as nerves wake up.
96 – 100	Wise move by foe as he spends 6 rounds unconscious. He' ll be stunned for 10 rounds and at –20 for next minute when he comes round.
101 – 105	Foe falls unconscious for 1 minute. He' ll be stunned for 10 rounds and at –20 for next two minutes when he comes round.
106 – 110	Foe is deeply unconscious for ten minutes. Then he' ll be stunned for 15 rounds and at –20 for a further ten minutes.
111 – 115	Foe is out like a light for thirty minutes. They are so helpless when they are asleep, aren' t they? He' ll be stunned for 20 rounds and groggy (at –25) for thirty minutes after waking up.
116 – 119	Foe will be unconscious for an hour. He' ll be stunned for 30 rounds and groggy (at –25) for an hour after waking up.
120	Foe' s heart stops due to unexpected disruption of coronary electrical activity. A Very Hard First Aid maneuver with proper gear will save him (foe is unconscious for next day). Otherwise he' s dead.

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Electrorifle	Medium	01-02	20	0
Electrostunner	Small	01-02	10	0
Laser Dazzler	Small	01-02	None	N/A
Neurowhip	Large	01-05	None	N/A
Sonic Stunner	Small	01-02	10	0
Sonic Stunrifle	Medium	01-02	15	0
Stunclub	Medium	01-02	None	N/A

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Electrorifle	20m	15	10m
Electrostunner	10m	10	5m
Laser Dazzler	10m	15	5m
Sonic Stunner	10m	15	5m
Sonic Stunrifle	20m	20	10m

Plasma Criticals	
(-19) – (-10)	Plasma singes foe. 5 Hits.
(-9) – 0	Luckily for foe, plasma just catches his side. 8 Hits.
01 – 10	Moderate burn to arm. Foe takes 11 Hits and is stunned 1 round. Foe drops anything held in that arm.
11 – 20	Foe cancels dancing lessons as plasma scalds foot. Foe takes 13 Hits, is stunned 1 round staggering, and at –10.
21 – 30	Moderate burn over abdomen. Foe takes 16 Hits, is stunned 2 rounds, and is at –15. Must remember to sleep on back.
31 – 40	Phew. What a scorcher! Foe' s chest is badly burned, taking 19 Hits, stunned 2 rounds, bleeding at 1 per round, and at –20.
41 – 50	Severe burns to arm. Foe endures 22 Hits, being stunned 3 rounds, bleeding at 1 per round, and is at –20. Foe drops anything held by that arm.
51 – 60	It burns! Plasma burns deep into foe' s lower leg, cooking tendons and muscles. Foe suffers 24 Hits, is stunned 3 rounds, bleeding at 2 per round, and is at –25. Foe falls to the ground.
61 – 70	Plasma burns foe' s shoulder and upper arm, cooking muscles, tendons, and tissue. Foe suffers 28 Hits, is stunned 4 rounds, bleeding at 3 per round, and is at –30.
71 – 80	Plasma burns foe from nape of neck to navel. Foe suffers 33 Hits from severe burns, is stunned 5 rounds, bleeding at 3 per round, and at –30.
81 – 85	Plasma burns a chunk out of foe' s side. Foe takes 36 Hits from severe burns, is stunned 5 rounds, bleeding internally at 4 per round, and at –30.
86 – 90	Vicious shot to foe' s hand burns through skin and tissue to the bone. Hand is useless. Foe takes 38 Hits, is stunned 6 rounds, bleeding at 5 per round and at –40. Hand and anything held in it is useless.
91 – 95	Plasma envelops foe' s legs. Foe takes 42 Hits, is stunned 7 rounds, bleeding at 6 per round, and at –40. Foe is on the ground wondering where is the nearest fire extinguisher?
96 – 100	Plasma sears deep over and into foe' s groin. Foe takes 45 Hits, is bleeding at 6 per round, and at –40. Mercifully foe loses consciousness for next minute.
101 – 105	Plasma burns into stomach cavity, damaging several organs. Foe takes 48 Hits, is bleeding internally at 7 per round, at –45, stunned 10 rounds, and lapses into unconsciousness at end of this period.
106 – 110	Plasma catches side of foe' s face, destroying one ear, one eye, his hair and that side of his face. Foe takes 48 Hits, bleeds at 7 per round, at –50, and is stunned for 6 rounds before dying.
111 – 115	Plasma burns through chest to fry lungs and heart. Foe takes 52 Hits, bleeds at 8 per round. Foe dies in 3 inactive rounds.
116 – 119	Neck shot spreads plasma around throat. Plasma boils off flesh swiftly. Foe dies after 1 inactive round. +60 Hits.
120	Shot takes foe directly in face. Foe' s face ceases to exist, followed by brain vaporizing. Foe dies instantly. Oh yeah, +70 Hits.

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Flame Pistol	Small	01-04	None	N/A
Flame Repeater	Large	01-04	25	15
Flame Rifle	Medium	01-04	None	N/A

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Range Modifiers			
Weapon	RI	PB	PB Range
Flame Pistol	5m	20	2.5m
Flame Repeater	10m	30	5m
Flame Rifle	10m	25	5m

Shrapnel Criticals	
(-19) – (-10)	A veritable scratch. +1 Hit.
(-9) – 0	You' ve seen nastier paper cuts. +2 Hits.
01 – 10	Foe suffers a series of abrasions to his arm. +4 Hits
11 – 20	Lumps of shrapnel tear at foe' s leg. +6 Hits.
21 – 30	Foe is convinced of the value of dieting and exercise as shards slice his side. +8 Hits.
31 – 40	Foe turns the other cheek and gets it torn open. Foe bleeds messily at 1 hit per round and takes 10 Hits.
41 – 50	Upper chest wound. Foe is bleeding at 1 hit per round, and takes 11 Hits.
51 – 60	Wave of shrapnel intercepts foe' s arm, causing foe to bleed at 2 hits per round and suffer 13 Hits.
61 – 70	Foe' s upper leg is badly torn up by fragments. Foe suffers 15 Hits, is bleeding at 2 hits per round, and is at –10 due to torn muscles and tendons.
71 – 80	Foe presents torso to blast and receives 19 Hits, is now bleeding at 3 hits per round, and is at –15 from shards entering body. Foe is also stunned for 1 round.
81 – 85	Foe tries to parry shrapnel with arm. Foe takes 23 Hits, is bleeding at 4 hits per round, and is at –20 from shredded muscles and tendons. Foe is stunned 2 rounds and can' t use arm.
86 – 90	Foe' s legs are caught in shrapnel wave. Foe takes 27 Hits, is bleeding at 5 hits per round, and is at –25 from shredded muscles and tendons. Foe is stunned for 3 rounds and collapses to ground, unable to walk.
91 – 95	Foe moves slightly, catching shards in shoulder not neck. Foe takes 30 Hits, is bleeding at 6 hits per round, and is at –20 from muscle/tendon damage and pain. Foe is stunned for 3 rounds and can' t use arm.
96 – 100	Shrapnel slices into foe' s abdomen. Foe takes 33 Hits, is bleeding 6 hits per round (2 external and 4 internal), and is at –20 from pain. Foe is stunned for 4 rounds. Get a surgeon.
101 – 105	Foe puts best foot forward and has it sliced off below knee. Foe takes 38 Hits, is bleeding 7 hits per round, and is at –30 from pain. Foe is stunned for 5 rounds and drops to ground. Medic!
106 – 110	Shrapnel blast messily amputates foe' s arm midway between elbow and shoulder. Foe takes 42 Hits, bleeds at 8 hits per round, is at –30 from pain, and stunned for 6 rounds.
111 – 115	Shards slice deep into foe' s lower torso, perforating intestines and multiple organs. Foe takes 48 Hits, bleeds at 10 hits per round (8 of these are internal), and is at –35. Foe dies in 8 inactive rounds.
116 – 119	Shrapnel opens foe' s upper chest drilling its way through vital organs (such as foe' s heart and lungs). Foe takes 51 Hits, is bleeding at 12 hits per round (9 of these are internal), and is at –40. Foe dies in 4 inactive rounds.
120	Foe loses his head. Literally. Foe' s headless corpse collapses to the ground over 1 round; what' s left of his head can be found a few meters away. Foe is instantly dead, by the way. +60 Hits, but who' s counting?

Weapon	Attack Size	Fumble	Burst	Recoil Penalty
Autoshotgun	Large	01-04	30	15
Fragmentation Grenade Mark I	Tiny	01-05	None	N/A
Fragmentation Grenade Mark II	Small	01-05	None	N/A
Fragmentation Grenade Mark III	Medium	01-05	None	N/A
Fragmentation Grenade Mark IV	Large	01-05	None	N/A
Fragmentation Grenade Mark V	Huge	01-05	None	N/A
Shotgun	Medium	01-04	None	N/A

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

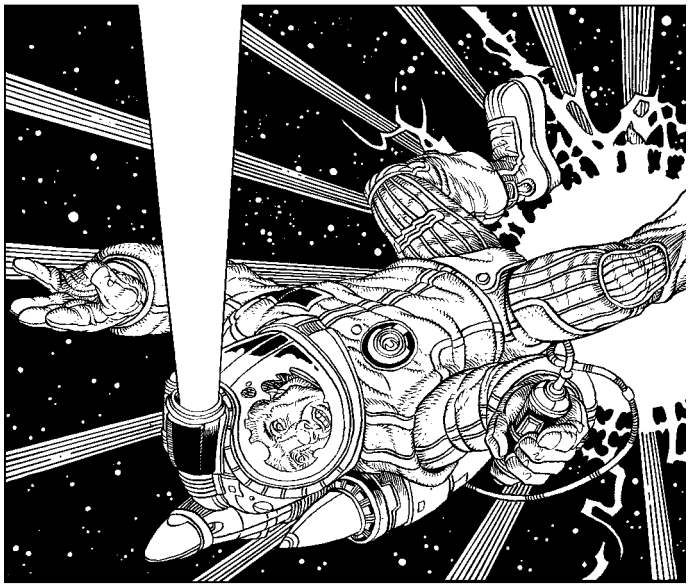
Range Modifiers			
Weapon	**RI**	**PB**	**PB Range**
Grenades	3m	-	-
Grenade Launcher	30m	20	15m
Grenade Launcher Attachment	30m	20	15m
Autoshotgun	10m	20	5m
Shotgun	10m	20	5m

Radiation Criticals	
(-19) – (-10)	Subatomic particles give target wide berth as they head towards universe' s edge. 1 Hit.
(-9) – 0	Deadly X-rays fortuitously miss target' s cells as they pass through. 1 Hit.
01 – 10	Target suffers a mild headache (-5 penalty) for 10 minutes. Take a painkiller. 2 Hits.
11 – 20	Target feels nauseous after ten minutes for next hour (-10 penalty). 2 Hits.
21 – 30	Target' s vision is a bit blurry for next hour (-10 penalty, and –20 to Perception). Anti-radiation medication recommended just in case. 3 Hits.
31 – 40	Target feels weak all over (-10 penalty). 3 Hits.
41 – 50	Target violently sick after ten minutes and feels unwell for three hours (-10 penalty). 4 Hits.
51 – 60	Minor cellular damage resulting in 4 Hits immediately. Anti-rad treatment within one day will avoid a long-term cancer in next year.
61 – 70	Significant cellular damage resulting in 5 Hits immediately. Anti-rad treatment within one day will prevent outbreak of cancer in next six months.
71 – 80	Skin damage akin to strong sunburn. 5 Hits and –10 penalty from pain. Anti-rad treatment within one day will prevent skin cancer occurring in next six months.
81 – 85	Cellular damage increases mutation risk for future progeny to 50%. Target takes 6 Hits immediately. Anti-rad treatment within one day will prevent cancer outbreak in next three months.
86 – 90	Skin damage akin to severe sunburn. 8 Hits and –15 penalty from pain. Skin develops unsightly lesions over course of one day. Anti-rad treatment necessary to remove these and prevent skin cancer in three months.
91 – 95	Radiation sickness. Target' s skin develops painful lesions after one hour (-20 penalty) and hair falls out. Anti-rad treatment necessary to remove these and prevent skin cancer in three months. 10 Hits.
96 – 100	Radiation sickness. Target' s skin develops painful lesions after one hour (-20 penalty) and hair falls out. Teeth and nails loosen. Anti-rad treatment necessary to cure sickness; otherwise target dies from cancers in three months. 12 Hits.
101 – 105	Severe radiation sickness. Skin develops painful lesions after 10 minutes (-20 penalty) and hair falls out. Teeth and nails fall out over next week. Anti-rad treatment necessary to cure sickness; otherwise target dies from cancers in one month. 14 Hits.
106 – 110	Severe radiation sickness. Skin develops painful lesions after 10 minutes (-25 penalty) and hair falls out. Teeth and nails fall out over next week. One organ (e.g. liver, kidney, etc.) fails in 1 week (fatal if not healed). Anti-rad treatment necessary to cure; otherwise target dies from cancers in 2 weeks. 16 Hits.
111 – 115	Severe radiation sickness. Skin develops painful lesions after 10 minutes (-25 penalty) and hair, teeth and nails fall out. Multiple organ failure within 1 day – target will die unless healed. Anti-rad treatment necessary to cure sickness; otherwise target dies from cancers in 1 week. 20 Hits.
116 – 119	Intense radiation dose causes multiple organ failure within 1 hour. Target collapses into coma and dies within 10 minutes unless extreme measures are taken. 22 Hits.
120	Lethal radiation dose causes multiple organ failure within 10 minutes. Target collapses immediately into a coma and dies within 1 minute unless extreme measures are taken. 25 Hits.

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20

Vacuum Criticals	
(-19) – (-10)	Target' s ears pop. 2 Hits.
(-9) – 0	Target' s ears pop audibly. 4 Hits.
01 – 10	Target' s ears pop hard, causing partial hearing loss (-20 to hearing-based Perception) 6 Hits – that hurt.
11 – 20	Inner ears pop, causing balance difficulties. Target is at –5 penalty and takes 7 Hits.
21 – 30	Eardrums burst. Permanent deafness. Target suffers –10 penalty from pain and takes 8 Hits.
31 – 40	Loss of pressure damages outer and inner ears. Target is deaf and loses sense of balance, taking 10 Hits and a –15 penalty.
41 – 50	Target' s nose begins to bleed at 1 hit per round. 11 Hits.
51 – 60	Target' s nose bleeding at 2 hits per round. 12 Hits.
61 – 70	Blood now flowing out of target' s ears and nose at 3 hits per round. 14 Hits.
71 – 80	Blood is leaking from the target' s nose, ears, and eyes at a rate of 4 hits per round. 17 Hits.
81 – 85	Target' s blood is simmering in his circulatory system. Target takes 5 hits per round (while exposed to vacuum) and is at -10. 20 Hits.
86 – 90	Target' s blood is beginning to boil in his circulatory system. Target takes 6 hits per round (while exposed to vacuum) and is at –20. 25 Hits.
91 – 95	Target bleeding profusely from all his orifices at 6 hits per round. Target is stunned 1 round in horror. 32 Hits.
96 – 100	One of target' s lungs collapses under stress of decompression. Target takes 30 Hits, takes 6 hits per round of internal damage, and is at –25. Target is stunned for two rounds.
101 – 105	Target' s blood is bubbling inside him, delivering 8 hits per round (while exposed to vacuum) and giving a –30 penalty and 3 rounds of stun. 35 Hits.
106 – 110	Target suffers multiple organ failures as blood bubbles out through orifices and skin. Target suffers 10 hits per round, 6 rounds of stun, a –35 penalty, and 40 Hits. Target will die in one minute without extreme medical assistance.
111 – 115	Target' s lungs fail, causing death by asphyxiation in six inactive rounds. Target also suffers 10 hits per round, a –40 penalty, and 45 Hits.
116 – 119	Target' s body expands like a balloon, causing severe damage to all organs, 12 hits per round, a –50 penalty, and 50 Hits. Target expires in 4 inactive rounds.
120	Target' s body explodes into myriad tiny fragments of flesh. Target is dead instantly +60 Hits.

Attack Size	Critical Modifier
Tiny	-20
Small	-10
Medium	0
Large	10
Huge	20



Psionics

Artificial intelligence, faster than light travel, genetic engineering, gravity control, and nanotechnology are all wondrous inventions, but they are marvels that can be understood if characters are prepared to expend the effort. Psionic abilities, such as telepathy, telekinesis, and clairvoyance, are equally extraordinary capabilities, but their true operating mechanism remains unknown. The effects of these enigmatic mental powers can be observed, and certain pharmaceutical substances and specialized pieces of equipment can detect, enhance, or inhibit them. For many psionic characters, maintaining the mystery of psi has become a goal in itself.

SysOp's Note: The Nature of Psi

HARP SF does not insist on a single explanation for psionic abilities. However SysOps may find the following model based (very loosely) on quantum mechanics helpful.

Elementary particles must sometimes be considered as particles and sometimes as waves. The properties of a particle, namely its precise velocity and its precise position, are indefinite until a measurement is made. The particle fluctuates over a range of positions (or velocities) simultaneously. An everyday analogy is to stand in the doorway of a house with one foot inside and one foot outside – you are both inside and outside the house at the same time.

Particles are thus said to be "fuzzy" and are mathematically described in quantum mechanics by "wave functions", which give the probabilities for the range of velocities (or positions) available to the particle. When a measurement is made of the particle, the most likely result is an average value, but extreme results are possible. When the measurement is made, the range of values is transformed into a single outcome, or to use the scientific terminology, "the wave function has collapsed". The observer has affected the event being observed.

In certain situations, measuring one particle causes the wave function of another particle to be collapsed. The distance between the particles is irrelevant – in some scenarios, time is irrelevant as well.

Moving from accepted notions of quantum mechanics requires a few bold assumptions that only a handful of physicists are willing to countenance.

The first assumption is that the physical brain interacts with a physically unmeasurable consciousness, the elusive mind. There are many random and quasi-random processes in the brain's synapses and neurons. The mind produces effects on the brain by collapsing the wave function of the neural processes.

Secondly the mind is in some fashion coupled to the act of observation with information flowing from the observation.

Thirdly, the mind can affect what is being observed and the mechanism performing the measurement as well as the brain itself.

Combining these three assumptions, it is conjectured that a conscious mind can influence random events both inside and outside the body by affecting the collapse of wave functions.

For abilities such as telekinesis, significant energy may be required to accomplish the desired effects. The assumptions here are that the psionic character is somehow able to tap the energy of quantum fluctuations and that the character's mind acts as a catalyst to effect the alteration in reality without being directly involved (and so avoiding the reactive forces required by Newton's Third Law being inflicted on the character's brain and body!)

Psionics in HARP SF is thus a means by which reality may be consciously altered by affecting matter and energy at a quantum level. Effects at the quantum level ripple upwards to create effects on the macroscopic scale of people and objects. Characters with psionic abilities can predict or effect these changes using (still undiscovered) regions of the brain in conjunction with the conscious mind.

The Basics of Psionics

There are many possible psionic abilities. Each individual psionic ability is known as a Psi Discipline. Related Psi Disciplines are grouped together into five categories known as the Psionic Fields.

- The Field of Biokinesis represents powers that can manipulate biological systems, in terms of enhancing natural characteristics and in both healing and causing injuries.
- The Field of Electrokinesis covers abilities relating to the direct manipulation of electricity and energy.
- The Field of Extrasensory Perception includes esoteric disciplines associated with observing at a distance in space and/or time.
- The Field of Psychokinesis relates to the manipulation of matter at both microscopic and macroscopic scales.
- The Field of Telepathy encompasses all abilities affecting the minds of others, such as sensing the thoughts of others and controlling their actions.

Psychic potential arises as a consequence of genetic peculiarities in the brain. Characters cannot train to become psionic users – they are either born with or without the potential. In game terms, this means that players who wish their characters to have this potential must purchase appropriate Talents for their characters at character creation, i.e. 1st level. Each Psionic Field is the result of different physiological abnormalities, so distinct Talents must be purchased for each Field. Psychic potential may be latent or active. Latent psychic potential merely exists – until it is unlocked, i.e. it becomes active, a character cannot learn to use any Psi Discipline in the associated Field. Unlocking a latent potential requires the characters to take an Active Psionic Field Talent.

Active psychic potentials vary in degree of potency. These degrees are known as Tiers and begin with Tier 1 (the least powerful) and end with Tier 5 (the most powerful). Each increasing Tier is qualitatively and/or quantitatively more powerful than the Tier(s) beneath it, e.g. a Tier 1 Telepath can only affect members of his own species, whereas a Tier 2 Telepath can target members of other sentient species. Reaching higher Tiers requires further Active Psionic Field Talents, which become increasingly expensive.

Characters with active psychic potentials can train in the Psi Disciplines. Each Psi Discipline is a separate skill in the Concentration category. This category is Favored for members of the Adept and Fusion professions; for all other professions, it is not favored.

The use of Psi Disciplines requires mental energy. This is represented in game terms by Psi Energy Points. Most species have a modest amount of innate psionic energy. Characters can also develop greater reserves by training in the Psi Energy Development skill.

Psionic Fields

Latent Psychic Potential

Psychic potential is an innate characteristic of an individual and depends upon the specific neural "wiring" of the brain. In most sentient species, psychic potential is an abnormal conditions produced by accidental mutations or very skilled genetic engineering.

This is represented in game terms by the character possessing one or more Latent Psionic Field Talents. Each Psionic Field (Biokinesis, Electrokinesis, Extrasensory Perception, Psychokinesis, and Telepathy) requires a separate Latent Psionic Field Talent. These Talents may normally only be taken at 1st level.

The cost of Latent Psionic Field Talents depends on how many Fields the character is interested in having the potential to use:

1st Latent Psionic Field: 5 DPs
2nd Latent Psionic Field: 15 DPs
3rd Latent Psionic Field: 30 DPs
4th Latent Psionic Field: 50 DPs
5th Latent Psionic Field: 75 DPs

Example: *John is designing a new character, which will* **not** *be a member of the Adept profession at 1st level. He wants the character to have the psychic potential for the Electrokinetic, Psychokinetic and Telepathic Fields. This will cost his character 50 DPs (5 DPs for Latent Psionic (Electrokinesis), 15 DPs for*

Latent Psionic (Psychokinetic) and 30 DPs for Latent Psionic (Telepathy)). His character won't have many DPs left for skills.

An Adept automatically gains a Latent Psionic Field Talent in one Field and one Active Psionic Field Talent for that Field. The Adept can choose to concentrate in that Field by taking a second Active Psionic Field Talent. Alternatively the Adept can take a second Latent Psionic Field Talent in a different Field. Adepts (or indeed Fusions) who wish to have the latent potential for additional Fields must expend the Development Points as normal.

Example: *On reflection, John decides that his character should be an Adept after all. He decides to take the Latent Psionic Field Talent for Electrokinesis. He now has two choices with regard to the Adept's professional abilities.*

He can choose to take Active Psionic Field Talent twice for the Electrokinesis Field. He'll have to spend 15 DPs to get Psychokinesis as a Latent Psionic Field (second field) and 30 DPs for Telepathy as a Latent Psionic Field (third field). Total expenditure is 45 DPs, not much of a saving.

Alternatively, he can choose to take the Active Psionic Field Talent once, say for Electrokinesis, and take Latent Psionic Field (Psychokinesis) as the second part of his professional abilities. Assuming he still wants telepathic potential, this will require buying Latent Psionic Field (Telepathy) as a third Field for 30 DPs, saving 20 DPs.

Active Psychic Abilities

Latent psychic potential must be unlocked if characters wish to learn psionic abilities. In game terms, this is represented by the Active Psionic Field Talents. These Talents may be taken at any level, not just first level.

A single purchase of an Active Psionic Field for a specific Field will unlock the character's psychic potential for that Field only and allow the character to create Tier 1 effects. Tier 2 effects require the character to purchase Active Psionic Field a second time. Similarly Tier 3 requires three purchases of the Talent, Tier 4 four purchases, and Tier 5 requires that the character have bought the Talent five times. The cost of Active Psionic Field Talents rises for higher Tiers.

- Active Psionic Field (Tier 1): 10 DPs.
- Active Psionic Field (Tier 2): 15 DPs.
- Active Psionic Field (Tier 3): 20 DPs.
- Active Psionic Field (Tier 4): 25 DPs.
- Active Psionic Field (Tier 5): 30 DPs.

Each Field must be developed separately and only one Psionic Field may be unlocked or improved per level.

Example: *John's Adept character reaches 2nd level. John could spend 15 DPs to purchase Tier 2 for the Electrokinesis Field. Alternatively he could spend 10 DPs to buy Active Psionic Field (Psychokinesis) or spend 10 DPs on Active Psionic Field (Telepathy) to unlock one of them for Tier 1 effects. He cannot unlock both Psychokinesis and Telepathy, nor can he improve his Electrokinesis and unlock one or both of the Psychokinetic and Telepathic Fields. If he was feeling particularly profligate with DPs, he could spend 35 DPs to buy Active Psionic Field (Tier 2 and Tier 3) for Electrokinesis (15 DPs for Tier 2 and 20 DPs for Tier 3).*

SysOp's Choice: Gaining Psychic Potential After 1st Level

Normally SysOps should only allow characters to take the Latent Psionic Field Talents at first level. This rule, in combination with the progressive costing scheme for additional Fields, is partly to forestall characters gaining access to all the Fields and partly because the psionic rules assume that psychic potential is something that a character is born with.

In some situations, SysOps may wish to allow characters to develop the Talent after first level. Plausible in-game explanations could be that the potential is the result of mutations caused by exposure to radiation, abnormal healing of the brain following serious head trauma, or even deliberate reengineering of a character's brain by an advanced civilization.

SysOp's Choice: Customizing Psionic Fields, Disciplines & Tiers

SysOps may consider some Psionic Fields to be inappropriate for their setting. SysOps may choose to disallow one or more Fields at their discretion. Alternatively SysOps may make all five Fields available in their game, but decide that specific Disciplines should be disallowed.

The Extrasensory Perception Field and, in particular, the Precognition and Psychometry Disciplines, can provide enterprising characters with far too much information in certain types of games, so disallowing them may be necessary. They have been included because they exist in many published science-fiction universes and so are necessary powers for those settings.

Likewise, although the rules assume that all five Tiers can be attained in every Field, SysOps may want to reduce the potency of psionics in their settings. This can be easily done by reducing the maximum Tier permitted from Tier 5 to a lower Tier, such as Tier 3 for example.

Further customisation is possible on a per-species level – perhaps Humans are capable of reaching Tier 5 in the Telepathy Field, but are limited to Tier 3 in the Biokinetic and Psychokinetic Fields, and may not gain access to the Extrasensory Perception and Electrokinetic Fields at all.

SysOps should make such decisions before any characters are created and make any limitations clear to players to avoid later disappointment.

SysOps should note that limiting psionic abilities too severely could mean that any Adept or Fusion characters will quickly reach their maximum capabilities in terms of Fields and Tiers. This may have the undesirable effect of making all Adept and Fusion characters similar in terms of their psionic powers.

Tintamar Knowledge Base: The Power Of Psionics

All Fields and Disciplines are available to all known species. Adepts and Fusions can reach Tier 5 in all Fields.

Among humans, psionic ability remains an uncommon talent. Most normal humans are jealous, even fearful, of the psionically gifted. Nevertheless Adepts and Fusions can easily find employment with the Federation itself, megacorporations and most governments. Headquartered in Tibet on Old Earth, the Order of the Transcendence trains Adepts and Fusions throughout almost all human space and is the largest independent psionic organization. Its members act as consultants to megacorporations and their behaviour is regulated by the Order. Outside the Solar System, the planets of Shangri-La and Athena are renowned for their psi training academies; the Transcendence has been forbidden to establish chapter houses on those worlds.

Psionics is rare among the Cerans. Their Adepts and Fusions are almost always in government service and are trained from an early age to be more diplomatic and les confrontational. Silth Adepts and Fusions are equally rare and are compulsorily recruited into the intelligence agencies and special forces of the Silth Empire. The Silth leaders use the psionically gifted but do not trust them.

Psionics in the Madji follows clan bloodlines; some clans have it, most do not. Adepts and Fusions are considered key clan assets and receive respect in proportion to their duties to the clan. A Madji Adept would never use its abilities without permission on a fellow clan member.

The Runcori most esteem Adepts and Fusions who do not take themselves seriously, but neither favor nor discriminate against the gifted.

In both Gorsivan and Krakuren societies, psionic potential is comparatively common and completely accepted in society. Gorsivans approach psi from a scientific and rational perspective; the Krakuren favor more mystical traditions.

Psi Disciplines and Tiers

Each Psi Discipline is described by three standard parameters, namely range, area of effect, and duration, and one or more parameters specific to the discipline. Examples of the latter include the mass that can be moved by telekinesis, the severity of criticals delivered by pyrokinetic attacks, or the degree of control exerted by a telepath.

The exact effect of a psionic activation depends on two factors: the Tier chosen for each parameter (each may be set independently) and the number of skill ranks known by the character in the relevant Psi Discipline. Unless otherwise stated in the description of the Psi Discipline, all standard parameters adhere to the following standard progressions:

Table 11.1 Psi Standard Tier Progressions

Tier	Range	Area of Effect	Duration
1	Self or Touch or 1 meter	Self or 1 Target or 1 m Radius	Instant or Concentration or 1 round per rank
2	1 meter/rank	1 Target per 10 ranks or 5 meters Radius	2 rounds per rank
3	5 meters/rank	1 Target per 5 ranks or 10 meters Radius	5 rounds per rank
4	10 meters/rank	1 Target per 3 ranks or 20 meters Radius	10 rounds per rank
5	20 meters/rank	1 Target per rank or 1 meter per rank Radius	1 minute per rank

Note*: For the Tier 2, 3 and 4 Areas of Effect,* **round up** *the number of targets, e.g. 4 skill ranks at Tier 3 allows one target to be affected, 6 skill ranks allows two targets.*

Thus a character with Active Psionic Field (Telepathy) at Tier 3 and 3 skill ranks in the Empathy Psi Discipline could activate the Empathy Discipline at Tier 2 for duration and be able to sense emotions for 6 rounds (2 rounds per rank x 3 ranks). Alternatively the character could activate the discipline at Tier 3 for duration and be able to sense emotions for 15 rounds (5 rounds per rank x 3 ranks).

Each parameter of a Psi Discipline may be set at a desired Tier independently of the others. Hence our budding empath could use Tier 2 for duration and for range, but only use Tier 1 for area of effect.

Durations and Concentration

At Tier 1, the duration of an activation is either Instant (the effect simply happens once), Concentration, or lasts 1 round per skill rank. For some Disciplines, the duration is specified; in others, it will be at the discretion of the character at the start of the activation. The advantage of a set duration

(rounds per rank) is that the character can take other actions within the duration making use of the psionic effects as and when desired. For example, a character employing Precognitive Maneuvering to assist his Space Pilot skill could spend a round or two using some other skill and then return to piloting his spacecraft. The advantage of Concentration is that the activation may last longer, but the character cannot stop using the discipline without ending it. Our psionically gifted pilot would not be able to change to Gunnery or Signaling without ending the activation.

An active character (moving around, flying a spacecraft, etc,) can concentrate on a Psi Discipline activation for one minute (30 rounds). At the end of this time, the character must succeed at a Medium All-or-Nothing Mental Focus maneuver to maintain the activation for another minute. After each successful Mental Focus maneuver, the difficulty level increases by one step, so at 2 minutes of concentration (counting from the beginning of the activation), the Mental Focus maneuver is now Hard [-20]. At the three minute point, it will be Very Hard [-40], and so on.

A passive character (in a meditative trance, sitting quietly, etc.) can concentrate for much longer and need only make Mental Focus maneuvers every five minutes.

Activating Psi Disciplines

The actual process of using a Psi Discipline is known as activating the discipline. A psionic character chooses a specific discipline, decides upon the target(s) and selects the Tiers for each relevant parameter. The character focuses his will upon the target(s) and attempts to influence (or predict) reality. On behalf of the activating character ("activator"), the controlling player makes an appropriate maneuver roll or attack, applying modifiers for higher Tier effects, extra psi energy expended, and concentration. If the maneuver or attack succeeds, then reality is altered (or correctly predicted). Regardless of success or failure, the psionic energy is used.

Psi Discipline Maneuvers

Psi Disciplines are resolved by three different methods according to their specific nature and the cooperativeness of the target. The three methods are Utility, Attack, and Physical Attack.

The Utility method is only used when the target(s) of the Discipline is a willing recipient of the effect. For player-characters, the player always decides on behalf of the character whether the character is willing or not, regardless of the physical condition of the character – conscious, unconscious, dying, or even dead.

The Attack method is used when the target(s) of the Discipline wish to resist the psionic effect. Normally this is due to the effect being actively harmful to the target, but some individuals will resist even beneficial effects such as healing.

The Physical Attack method is used when a Psi Discipline manipulates energy and/or matter to make a directed physical attack on a target – such as creating a bolt of flame and firing it at an enemy.

Utility Mode Activation

Players attempting a Psi Discipline in Utility mode make an open-ended percentile roll, adding their skill bonus in the Psi Discipline and applying all Tier modifiers, energy bonuses, and focus bonuses. The player then consults the Utility column of the Maneuver Table to determine the result. These results may range from Fumble through Failure and Normal to extreme successes where some parameters of the Discipline activation (range, duration, area of effect, etc.) are multiplied without an increase in the expenditure of Psi Energy Points:

Utility Mode Results

Fumble – Roll on the Psionic Fumble Table. This is a non-open-ended percentile roll modified by the mode used. (Utility = +0)

Fail – The Discipline activation fails. The Psi Energy Points used are lost with no additional adverse effects.

Normal – The Psi Discipline functions normally.

Double – One Discipline parameter of the activator's choice is doubled at no cost to the character.

Double x2 – As Double, with the exception that 2 different Discipline parameters of the activator's choice are doubled.

Triple – One Discipline parameter of the activator's choice is tripled at no cost to the character.

Note: Parameters refer to the range, duration, area of effect, or number of targets of the Discipline. Some Discipline parameter values, i.e. range of Self, range of Touch, area of effect of Self, duration of Instant, and a duration of Concentration, cannot be doubled or tripled, so may not be selected. Quantitative Discipline-specific parameters, such as mass and speed, may be doubled or tripled.

Attack Mode Activation

Activating a Psi Discipline in the attack mode is a two-step process:

- The psionic character makes an open-ended percentile roll, adding the skill bonus for the specific Discipline, and applying all Tier modifiers, energy bonuses, and focus bonuses. The player then consults the RR column of the Maneuver Table to determine the result.
  - A Fumble result requires a roll on the Psionic Fumble Table. This is a non-open-ended percentile roll modified by the mode used. (Attack = +10).
  - A Fail result means that the maneuver has failed and the activator forfeits the Psi Energy Points.
- All other results determine the "target number" for resisting the Psi Discipline.
- The target of the attack is required to make a Resistance Roll. This is a standard open-ended percentile roll where the target adds their relevant Resistance skill bonus. (For psionic effects, this will usually be a Will Resistance Roll.) If the result of the Resistance Roll is equal to or higher than the "target number" from the table, the effect has been resisted.

Physical Attack Mode Activation

Psi Disciplines using the Physical Attack Mode manipulate matter and/or energy and then use it to attack a target. The psionic character's roll to successfully activate the Discipline and his attack roll are the same roll. The activator makes an open-ended percentile roll, adding the skill bonus for the specific Discipline, and applying all Tier modifiers, energy bonuses, and focus bonuses.

If the roll itself is in the range 01 to 05, then the activation is fumbled, and a roll on the Psionic Fumble Table must be made. This is a non-open-ended percentile roll modified by the mode used. (Physical Attack = +20).

If the roll is not fumbled, then the result is treated as an attack on the appropriate Critical Table (Heat, Cold, or Electricity; Chapter 10), and handled just like a normal attack (the targets may dodge, claim cover, soak up the damage with their armor, etc.). In particular, a successful activation in the Physical Attack does not mean an automatic connection and delivery of damage – the psychic may miss, the target may dodge, etc.

Tier Modifiers

The more significant the alteration to (or prediction of) reality, the more difficult it is for a psionic character to be successful in activating a Psi Discipline. Tier effects above Tier 1, therefore, impose penalties to the maneuver, and each parameter contributes to the negative modifier.

The penalties are as follows:

Tier 1: +0
Tier 2: -10
Tier 3: 20
Tier 4: -30
Tier 5: -40

Example: *Alice Weaver wishes to read the surface thoughts of a captured Silth. She can touch the Silth, so her Tier for range is only 1. The area of effect for this Discipline is always 1 target, so her Tier for area of effect is 1. However, Alice is human, so she needs to use Tier 2 in order to scan an alien mind, and she wants to maximize the duration, so this will also be Tier 2. The total modifier to her maneuver is –20 (+0 from range, +0 from area of effect, –10 from duration and –10 from the Discipline-specific parameter). Alice would like to perceive the reasoning and thought patterns behind the surface thoughts, but that would be a Tier 3 effect, and she only possesses Active Psionic Field (Telepathy) at Tier 2.*

Psi Energy Cost and Extra Psi Energy

Activating Psi Disciplines costs a character Psi Energy Points (PEPs). The overall Psi Energy Point cost for an activation is determined by the highest Tier parameter effect.

Maximum Tier in Activation Minimum PEP Cost:

Tier 1: 1 PEP
Tier 2: 2 PEPs
Tier 3: 3 PEPs
Tier 4: 4 PEPs
Tier 5: 5 PEPs

Example: *Alice's attempt to scan the prisoner's mind will cost her 2 Psi Energy Points. The Tiers for range and area of effect are both 1, but she is using Tier 2 for both duration and to scan an alien mind, so her maximum Tier effect is 2.*

Characters may opt to boost their chances of succeeding with an activation maneuver or attack by expending extra psionic energy to eliminate Tier penalties. For every Psi Energy Point above the minimum required, the activator can reduce the cumulative Tier penalty by 5 (to a minimum of zero). There are three other limits: characters cannot expend more psionic energy than they currently possess, characters may not use more extra Psi Energy Points to boost an activation than they have skill ranks in the Discipline, and characters cannot combine using extra Psi Energy Points with the use of Mental Focus (see below). In the event an activation using extra Psi Energy Points is fumbled, add the number of extra PEPs used to the roll on the fumble.

Example: Alice's scan will cost her 2 PEPs, but she will be at –20 to the maneuver. If Alice expends 4 extra PEPs, she will be able to cancel out the Tier penalty (4 x +5) but will have to add +4 to any roll on the fumble table if the activation maneuver is fumbled.

Boosting Psi Activations Through Focused Effort

As psionic abilities represent a marshalling of one's will, clearing the mind of distractions so that the consciousness is focused on the task at hand can be very beneficial.

Characters can therefore make a Mental Focus maneuver and look up the result on the Bonus column of the Maneuver Table, applying this result to the psionic activation maneuver roll or attack.

The time required for the Mental Focus maneuver is proportional to the maximum Tier involved in the intended Discipline activation, i.e. a Tier 1 maximum requires 1 round, an activation with a Tier 2 maximum requires 2 rounds, and so on to Tier 5 activations, which require 5 rounds to complete.

The Psi Discipline must be activated the round immediately following the completion of the Mental Focus maneuver, or the bonus is lost.

Activation Requirements

There are a number of prerequisites that must be met before a character can activate any Psi Discipline.

- The character must have the relevant Active Psionic Field Talent for the Psi Discipline and must possess this at the correct Tier.
- The character must have at least one skill rank in the Psi Discipline.
- The character must have enough Psi Energy Points necessary to meet the minimum PEP cost of the activation.
- The character must be conscious and not stunned at the time of activation.
- The character requires one round to activate a Psi Discipline.
- If the Psi Discipline activation has a specific target or targets for its effects, the character must know the location of (all) the target(s). The psionic character must either be able to perceive the target(s) (using sight, hearing, etc.) directly, have identified the location using the Clairsentience Psi Discipline, or have determined the location by technological means (e.g. a tactical scanner, etc.).
- If the Psi Discipline uses the Physical Attack mode (e.g. psychokinetic bolts), the attacking character must have an unobstructed line of sight to the target(s), e.g. you can't blast an enemy who is inside a tank from the outside.

Activation in Combat

If a psionic character is in the middle of activating a Psi Discipline and suffers injury from an attack, then the character can complete the activation as normal.

Resisting Psionics

Affecting inanimate matter or raw energy is a triumph of will in itself. Affecting sentient creatures is a much more difficult task as their minds are determined to maintain the status quo of their own wave function. Adherents of the quantum model of psionics conjecture that the consciousness of the target detects any attempt by another will to alter wave functions. They further speculate that the consciousness can determine if a psionic activation is harmful and that this determination may even ignore the constraints of time somehow. Regardless of the process, the consciousness can trigger an instinctive survival reflex to resist the effect. This reflex can even be triggered by the minds of unconscious characters. Some characters have learned to improve this reflex (in game terms, have increased their Resistance skills).

The SysOp should decide whether a NPC wishes to resist a psionic effect or not. For player-characters, the player always has the final say on whether his character wishes to resist or not, regardless of the physical condition of his character. In both cases, the declaration must be made before any maneuver rolls are made.

The activator of a psionic discipline always knows whether the activation has been successful. In particular, users of the more subtle disciplines of the Telepathy Field (i.e. Clouding, Control, Wipe, etc.) know whether their target(s) have successfully resisted or succumbed to the psionic effect.

Targets who have no psionic ability (latent or active) will not automatically know when they have been the victim(s) of a psionic activation, whether they successfully resist the effects or not. Likewise targets with psionic ability (latent or active) who fail their RR will also **not** know that they have been suffered a psi effect. However, even targets who fail their RR may draw their own conclusions if a telepath does something blatantly obvious (e.g. disappears from sight in front of them) or makes a crushing motion with one hand whilst saying "Do not fail me again" (say as emphasis for Attack or Psi Wounding activations).

If a character with latent psionic abilities or a character with active psionic ability (but in a different Field from the psi activation) resists a psionic effect, then the targeted character will be aware that he was the subject of a psionic activation, but will not automatically know the identity of the attacker and will not know the nature of the attempted attack.

If a character who has active psionic abilityin the same Field as the attacking activation succeeds in the RR, then the character will be aware that he was the subject of a psi attack and will be able to identify the nature of the attack, but will **not** automatically know the identity of the attacker.

Telepathy and Biokineis Fields versus Alien/ Nonsentient Targets

When using Disciplines from the Telepathy Field or the Biokinesis Field, it is easier to effect members of one's own species than members of alien races. To reflect this, add 1 to the Tier number of the Discipline-specific Effects when determining which Tier is required. This means that Tier 5 effects cannot be achieved against alien targets (as Tier 5 +1 would require Tier 6 which does not exist.) No modification to Tier number is required when targeting individuals of a nonsentient species.

Example: *To send a one-way message to a fellow telepath of one's own species is a Tier 1 effect. To send a one-way message to a telepathic being of an alien species is Tier 2 (Tier 1 + 1 for alien target).*

Biokineis Field Limitation

Only one of Psi Agility, Psi Constitution, Psi Insight, Psi Presence, Psi Quickness, Psi Reasoning, Psi Self Discipline and Psi Strength may *normally* be active on the same target at any one time. If a biokinetic wishes to activate two of these Disciplines on the same target at the same time, add 1 to the Tier number of the Discipline-specific Effects when determining which Tier is required. Two is the suggested maximum of these Disciplines that may be simultaneously active on the same target.

Example: *Latham activates a Tier 3 Psi Quickness on herself for a +15 bonus to Quickness. Next round, she can attempt to increase her Strength by +15, but this will be at Tier 4 (3 +1) because the Psi Quickness is still active.*

Psi Discipline Descriptions

This section details all of the Psi Disciplines listed in the table below. The Fields are listed in alphabetical order with the Psi Disciplines also in alphabetical order. All the Disciplines follow the same format, also given below.

Sample Discipline

Range: This is the Discipline's range. This will either be "Standard" for Disciplines whose ranges follow the standard progression or a single range applicable to all Tiers.

Area of Effect: This is the Discipline's area of effect. This will either be "Standard (Radius)" for Disciplines whose area of effect follows the standard progression for volume (i.e. 1m radius, 5m radius, etc.), or be

"Standard (Targets)" for Disciplines whose area of effect follows the standard progression for number of targets (Self or Target, etc.), or be a single area of effect applicable to all Tiers.

Duration: This is the Discipline's duration. This will either be "Standard" for Disciplines whose durations adhere to the standard progression or a single duration applicable to all Tiers.

Type: Utility or Attack or Physical Attack.

RR: If used in the Attack mode, this will indicate what the Resistance Roll will be based on (usually Will, but rarely Stamina or Electronic).

Field: This indicates to which Field the Discipline belongs.

Description: This is the description of the actual effects of the Discipline.

Tiers: This gives the Discipline-specific effects at the five Tiers.

Table 11.2 Psi Diciplines

Biokinesis	Electrokinesis	Extrasensory Perception	Psychokinesis	Telepathy
Psi Agility	Electrical Control	Clairaudience	Cryokinesis	Attack
Psi Constitution	Electrical Melding	Clairsentience	Cryokinetic Bolt	Cloaking
Psi Healing	Energy Absorption	Clairvoyance	Cryokinetic Field	Clouding
Psi Insight	Energy Bolt	Precognition	Kinetic Field	Control
Psi Presence	Energy Conversion	Precognitive Attack	Pyrokinesis	Defense
Psi Quickness	Energy Dispersal	Precognitive Defense	Pyrokinetic Bolt	Empathy
Psi Reasoning		Precognitive Maneuvering	Pyrokinetic Field	Scan
Psi Self Discipline		Psychometry	Telekinesis	Suggestion
Psi Strength			Telekinetic Hand	Telepathy
Psi Wounding				Wipe

Field of Biokinesis

Psi Agility

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Agility stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Agility

Tier 2: +10 bonus to Agility

Tier 3: +15 bonus to Agility

Psi Constitution

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Constitution stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Constitution

Tier 2: +10 bonus to Constitution

Tier 3: +15 bonus to Constitution

Psi Healing

Field: Biokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Instant at all Tiers

Type: Utility or Attack

RR: Will

Description: The activator can heal damage to a single target. This Discipline has two sets of specific Tiering options: the Injury options, which covers the types of wounds that may be healed, and the Recovery options, which cover how long it takes serious Injuries (Tier 2 and above) to be fully heal.

Tiers:

Injury

Tier 1: Activator can cure 2 concussion hits per skill rank **or** reduce bleeding by 1 point per skill rank **or** reduce a maneuver penalty by 1 point per skill rank **or** stabilize a character who has received a death in xxx rounds critical for one extra round per skill rank.

Tier 2: Activator can cure one area of frostbite or burn damage per skill rank **or** one injured muscle or tendon per skill rank **or** stabilize a character who has received a death in xxx rounds critical for one extra minute per skill rank.

Tier 3: Activator can cure one damaged muscle or tendon per skill rank **or** one fractured bone per skill rank **or** one injured organ per skill rank **or** stabilize a dying character.

Tier 4: Activator can cure one destroyed muscle or tendon per skill rank **or** one shattered bone per skill rank **or** one damaged nerve per skill rank **or** one damaged organ per skill rank **or** resuscitate a character who has died less than one round per skill rank ago.

Tier 5: Activator can cure one destroyed bone per skill rank **or** one destroyed nerve per skill rank **or** one destroyed organ per skill rank **or** resuscitate a character who has died less than one minute per skill rank ago (to a maximum of ten minutes).

Recovery (for all frostbite, burn, muscle, tendon, bone, nerve, or organ injuries)

Tier 1: Twenty-four hours

Tier 2: Twelve hours.

Tier 3: Four hours.

Tier 4: One hour.

Tier 5: Ten minutes.

Psi Insight

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Insight stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Insight

Tier 2: +10 bonus to Insight

Tier 3: +15 bonus to Insight

Psi Presence

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Presence stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Presence

Tier 2: +10 bonus to Presence

Tier 3: +15 bonus to Presence

Psi Quickness

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Quickness stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Quickness

Tier 2: +10 bonus to Quickness

Tier 3: +15 bonus to Quickness

Psi Reasoning

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Reasoning stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Reasoning

Tier 2: +10 bonus to Reasoning

Tier 3: +15 bonus to Reasoning

Psi Self Discipline

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Self Discipline stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Self Discipline

Tier 2: +10 bonus to Self Discipline

Tier 3: +15 bonus to Self Discipline

Psi Strength

Field: Biokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: Target(s) receive an increase to their Strength stat bonus for the duration of the activation of this Discipline.

Tiers:

Tier 1: +5 bonus to Strength

Tier 2: +10 bonus to Strength

Tier 3: +15 bonus to Strength

Tier 4: +20 bonus to Strength

Tier 5: +25 bonus to Strength

Psi Wounding

Field: Biokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Instant at all Tiers

Type: Attack

RR: Will

Description: The activator can create injuries on a target using this Discipline. The targets are allowed a Will RR. If they fail, they suffer the effects of a critical (activator's choice of Slash, Puncture, or Crush), which is rolled separately. The attack size is determined by the Tiering. All injuries are permanent and must be healed normally.

Tiers:

Tier 1: Tiny Critical (roll d100-20)

Tier 2: Small Critical (roll d100-10)

Tier 3: Medium Critical (roll d100)

Tier 4: Large Critical (roll d100+10)

Tier 5: Huge Critical (roll d100+20)

Field of Electrokinesis

Electrical Control

Field: Electrokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility

RR: Electronic

Description: The psionic can manipulate electrical currents and voltages in the target device. This Discipline can be used in conjunction with an Engineering maneuver (and/or circuit schematics) to keep a device functioning that would otherwise be broken for the activation's duration or to interfere non-destructively with a device's functioning (useful for dealing with anti-burglary sensors) or to provoke a malfunction in the device. The activation's Tier gives the severity of an induced malfunction.

Tiers:

Interference:

Tier 1: Suppress all input to a device.

Tier 2: Suppress all output from a device.

Tier 3: Selectively manipulate the input processed by a device (can add, remove, or alter input values)

Tier 4: Selectively manipulate the output produced by a device (can add, remove, or alter output signals).

Tier 5: Complete control of all input and output of a device.

Malfunction:

Tier 1: d100-20 roll on the Malfunction Table

Tier 2: d100-10 roll on the Malfunction Table

Tier 3: d100 roll on the Malfunction Table

Tier 4: d100+10 roll on the Malfunction Table

Tier 5: d100+20 roll on the Malfunction Table.

Operation:

Tier 1: Activator enables a portable device, cyberware unit or robot subsystem that has suffered a transient failure to function normally for the activation duration.

Tier 2: Activator enables a portable device, cyberware unit or robot subsystem that has been damaged to function. Reduce any malfunction penalty by the number of skill ranks possessed in this Discipline for the activation duration.

Tier 3: Activator enables a portable device, cyberware unit or robot subsystem that has been disabled to function as if damaged at a –50 penalty (50% performance). Alternatively activator can enable a non-portable machine or vehicle subsystem that has suffered a transient failure to function normally for the activation duration.

Tier 4: Activator enables a non-portable machine or vehicle subsystem that has been damaged to function. Reduce any malfunction penalty by the number of skill ranks possessed in this Discipline for the activation duration.

Tier 5: Activator enables a non-portable machine or vehicle subsystem that has been disabled to function as if damaged at a –50 penalty (50% performance).

Electrical Melding

Field: Electrokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility or Attack

RR: Will

Description: The adept can telepathically meld with a computer system (software, Archive, AI, etc.). The adept uses the lower of this skill and one of Computer Operation, Computer Programming, and Computer Hacking (whichever is appropriate) in manipulating the system each round. Higher Tiers allow greater control over the system. AIs and virtual individuals may resist this Discipline.

Tiers:

Tier 1: Activator can operate the system through the psychic interface.

Tier 2: Activator can observe the system's actions (e.g. observe data retrieval searches performed for other users, monitor network activity, etc.)

Tier 3: Activator can independently probe the system's databases (without initiating a normal retrieval query).

Tier 4: Activator can control the system's operation for the duration (long-term and core programming cannot be affected.)

Tier 5: Activator can control all of the system's programming (including "rewriting" core and long-term programming, thus making permanent changes to the system).

Energy Absorption

Field: Electrokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: This Discipline allows the adept to drain the energy from a power cell or device. It may be used in conjunction with the Energy Conversion Discipline to transfer energy from one item to another.

Tiers:

Tier 1: Drain one energy unit per skill rank per round.

Tier 2: Drain two energy units per skill rank per round.

Tier 3: Drain three energy units per skill rank per round.

Tier 4: Drain four energy units per skill rank per round.

Tier 5: Drain five energy units per skill rank per round.

Energy Bolt

Field: Electrokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Instant at all Tiers

Type: Physical Attack

RR: Not Applicable

Description: Creates an arc of electrical energy that a psychic can direct at one or more chosen targets. This is treated as a physical attack resolved on the Electrical Critical Table. The attack size is given by the Discipline-specific Tiering and all normal combat rules, including damage caps, apply.

Tiers:

Tier 1: Tiny Electrical Critical

Tier 2: Small Electrical Critical

Tier 3: Medium Electrical Critical

Tier 4: Large Electrical Critical

Tier 5: Huge Electrical Critical

Energy Conversion

Field: Electrokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: The adept can either convert his own Psi Energy Points into energy units and transfer them into a device or power cell or use this Discipline in conjunction with the Energy Absorption Discipline to transfer energy from one device to another.

Tiers:

Psi Conversion

Tier 1: Convert 1 Psi Energy Point to 1 energy unit each round and transfer them to a device.

Tier 2: Convert 1 Psi Energy Point to 2 energy units each round and transfer them to a device.

Tier 3: Convert 1 Psi Energy Point to 3 energy units each round and transfer them to a device.

Tier 4: Convert 1 Psi Energy Point to 4 energy units each round and transfer them to a device.

Tier 5: Convert 1 Psi Energy Point to 5 energy units each round and transfer them to a device.

Energy Transfer (via Absorption)

Tier 1: Transfer 1 energy unit per skill rank per round.

Tier 2: Transfer 2 energy units per skill rank per round.

Tier 3: Transfer 3 energy units per skill rank per round.

Tier 4: Transfer 4 energy units per skill rank per round.

Tier 5: Transfer 5 energy units per skill rank per round.

Energy Dispersal

Field: Electrokinesis

Range: Standard

Area of Effect: Standard (Radius)

Duration: Standard

Type: Utility or Attack.

RR: Will

Description: The activator can generate a field, which protects anyone inside it against electrically-based attacks **entering** the field, Such attacks include energy bolts (not lasers or blasters), electroweapons, and any other attack resolved on the Electrical or Neuro Critical Tables. If the center point of the field is the activator, then the field moves with the activator, otherwise it is immobile.

Tiers:

Tier 1: Bonus of +10 to DB versus energy attacks

Tier 2: Bonus of +20 to DB versus energy attacks

Tier 3: Bonus of +30 to DB versus energy attacks

Tier 4: Bonus of +40 to DB versus energy attacks

Tier 5: Bonus of +50 to DB versus energy attacks

Field of Extrasensory Perception

Clairaudience

Range: Standard

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Field: Extrasensory Perception

Description: The activator can shift his point of hearing to any location within range. At the lowest Tier, the point of hearing is immobile and may not be moved through barriers (a closed door or wall is a barrier, a pit is not). These restrictions are lifted at higher Tiers. The activator must make Perception maneuvers as normal.

Tiers:

Tier 1: Point of hearing is immobile (but can be rotated). One non-metallic physical barrier (e.g. wood, organics, rock, plastic) may be between activator and point of hearing.

Tier 2: Point of hearing may be moved at one meter per skill rank per round. One physical barrier (but not an energy barrier) may be between activator and the initial point of hearing. May not be moved through barriers.

Tier 3: As Tier 2, but the point of hearing may be shifted or moved through multiple non-metallic physical barriers (e.g. wood, organics, rock, plastic).

Tier 4: As Tier 2, but the point of hearing may be shifted or moved through any physical barriers (but not energy barriers).

Tier 5: As Tier 2, but the point of hearing may be shifted or moved through any barriers (including magneto-gravitic shields).

Clairsentience

Field: Extrasensory Perception

Range: Standard

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility or Attack

RR: Will

Description: The adept can sense the presence of sentient minds, including number and approximate location, within the range of the activation. At the lowest Tier, the adept cannot discern species or sense through barriers (a closed door or wall is a barrier, a pit is not). These restrictions are lifted at higher Tiers. The Cloaking Discipline can completely shield targets from Clairsentience – targets within the range may also resist this Discipline, with success meaning that they have not been detected.

Tiers:

Tier 1: Sense all sentient minds (number and location) within range. May not sense through barriers.

Tier 2: As Tier 1, except the adept can discern the species of sensed minds and identify known individuals.

Tier 3: As Tier 2, except the adept's sense can extend through non-metallic physical barriers (e.g. wood, organics, rock, plastic). The activator can identify any mind actively using psionic abilities and determine which ability/abilities are being used.

Tier 4: As Tier 2, except the adept's sense can extend through any physical barriers (but not energy barriers). The activator can identify any mind that has Active (not Latent) Psionic Field abilities and determine which Fields (but not Disciplines known).

Tier 5: As Tier 2, except the adept's sense can extend through any barriers (including energy barriers). The activator can identify any mind that has Active or Latent Psionic Field abilities and determine which Fields (but not Disciplines known).

Clairvoyance

Field: Extrasensory Perception

Range: Standard

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: The activator can shift his point of vision to any location within range. At the lowest Tier, the point of vision is immobile and may not be moved through barriers (a closed door or wall is a barrier, a pit is not). These restrictions are lifted at higher Tiers. The activator must make Perception maneuvers as normal.

Tiers:

Tier 1: Point of vision is immobile (but can be rotated). One non-metallic physical barrier (e.g. wood, organics, rock, plastic) may be between activator and point of vision.

Tier 2: Point of vision may be moved at one meter per skill rank per round. One physical barrier (but not an energy barrier) may be between activator and the initial point of vision. May not be moved through barriers.

Tier 3: As Tier 2, but the point of vision may be shifted or moved through multiple non-metallic physical barriers (e.g. wood, organics, rock, plastic).

Tier 4: As Tier 2, but the point of vision may be shifted or moved through any physical barriers (but not energy barriers).

Tier 5: As Tier 2, point of vision may be shifted or moved through any barriers (including magneto-gravitic shields).

Precognition

Field: Extrasensory Perception

Range: Touch at all Tiers

Area of Effect: Self at all Tiers

Duration: Concentration at all Tiers

Type: Utility or Attack

RR: Will

Description: By touching an object or individual, the adept gains a vision of a significant event that may occur to the object or individual in the future. The "vision" may be an image, sounds, or even just a "bad feeling" about something or someone, as the SysOp feels appropriate. Higher Tiers allow for glimpses further into the future. Sentient targets of this Discipline may choose to resist. SysOps and players should note that the vision is of a possible future – it may or may not happen. SysOps may require adepts to make Perception maneuvers to glean key information from the vision.

Tiers:

Tier 1: Vision may be of an event up to one minute per skill rank into the future.

Tier 2: Vision may be of an event up to one hour per skill rank into the future.

Tier 3: Vision may be of an event up to one day per skill rank into the future.

Tier 4: Vision may be of an event up to one month per skill rank into the future.

Tier 5: Vision may be of an event up to one year per skill rank into the future.

Precognitive Attack

Field: Extrasensory Perception

Range: Self at all Tiers

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: This Discipline utilizes limited precognition to guide the character's subconscious, enabling the activator to make more deadly attacks. The bonus granted by this Discipline may be applied to a single skill from the Combat category (chosen at Discipline activation) for the duration of the activation.

Tiers:

Bonus:

Tier 1: Bonus of +10 to OB

Tier 2: Bonus of +15 to OB

Tier 3: Bonus of +20 to OB

Tier 4: Bonus of +25 to OB

Tier 5: Bonus of +30 to OB

Skills:

Tier 1: Bonus may be applied to any one Combat skill

Tier 2: Bonus may be applied to any two Combat skills

Tier 3: Bonus may be applied to any three Combat skills

Tier 4: Bonus may be applied to any four Combat skills

Tier 5: Bonus may be applied to any five Combat skills

Precognitive Defense

Field: Extrasensory Perception

Range: Self at all Tiers

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: This Discipline utilizes limited precognition to warn the character's subconscious of threats, enabling the activator to pre-emptively defend against attacks. The activator need not be consciously aware of the danger while this Discipline is active to be protected.

Tiers:

Tier 1: Bonus of +10 to DB against all attacks

Tier 2: Bonus of +15 to DB against all attacks

Tier 3: Bonus of +20 to DB against all attacks

Tier 4: Bonus of +25 to DB against all attacks

Tier 5: Bonus of +30 to DB against all attacks

Precognitive Maneuvering

Field: Extrasensory Perception

Range: Self at all Tiers

Area of Effect: Self at all Tiers

Duration: Standard

Type: Utility

RR: Not Applicable

Description: This Discipline utilizes limited precognition to guide the character's actions, enabling the activator to perform more precise and effective maneuvers. The bonus granted by this Discipline may be applied to a single allowable skill (chosen at Discipline activation) for the duration of the activation. The bonus may not be applied to any skill from the Combat category, any skill from the Concentration category, any Resistance skill, Armor or Endurance.

Tiers:

Bonus:

Tier 1: Bonus of +10 to chosen allowed skill

Tier 2: Bonus of +15 to chosen allowed skill

Tier 3: Bonus of +20 to chosen allowed skill

Tier 4: Bonus of +25 to chosen allowed skill

Tier 5: Bonus of +30 to chosen allowed skill

Skills:

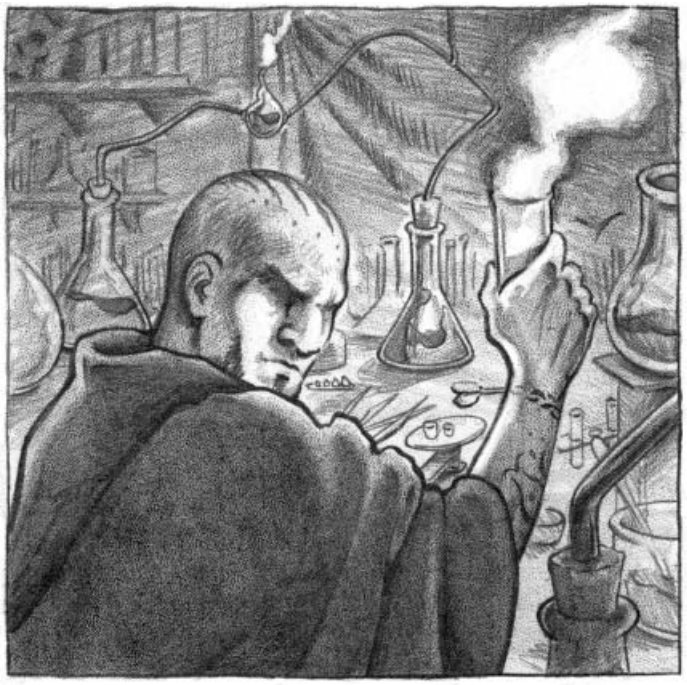
Tier 1: Bonus may be applied to any one allowed skill

Tier 2: Bonus may be applied to any two allowed skills

Tier 3: Bonus may be applied to any three allowed skills

Tier 4: Bonus may be applied to any four allowed skills

Tier 5: Bonus may be applied to any five allowed skills



Psychometry

Field: Extrasensory Perception

Range: Touch at all Tiers

Area of Effect: Self at all Tiers

Duration: Concentration at all Tiers

Type: Utility or Attack

RR: Will

Description: By touching an object or individual, the psionic gains a vision of a significant event that happened to the object or individual in the past. Higher Tiers allow for glimpses deeper into the past. Sentient targets of this Discipline may choose to resist. SysOps may require adepts to make Perception maneuvers to glean key information from the vision.

Tiers:

Tier 1: Vision may be of an event up to one minute per skill rank into the past.

Tier 2: Vision may be of an event up to one hour per skill rank into the past.

Tier 3: Vision may be of an event up to one day per skill rank into the past.

Tier 4: Vision may be of an event up to one month per skill rank into the past.

Tier 5: Vision may be of an event up to one year per skill rank into the past.

Field of Psychokinesis

Cryokinesis

Field: Psychokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility

RR: Will

Description: Using this Discipline, the adept may lower the temperature of any inanimate material (solid, liquid, or gas) at a rate of 10 degrees Celsius per round down to a minimum temperature twenty degrees below the ambient temperature (to a minimum of –273.15 degrees Celsius or absolute zero). The activator must concentrate in order to lower the temperature, otherwise it will remain constant. Dependent on material, this spell may cause it to change state (usually freeze). In the case of metal objects, this freezing process may make them brittle. Every time a frozen metallic object is used, it must make a malfunction roll. Persisting in carrying or wearing an extremely cold item may result in Tiny Cold criticals (SysOp discretion on severity). Once the Discipline's duration ends, the material will heat up normally to the ambient temperature at the same rate it was cooled. This Discipline cannot be used in a vacuum.

Tiers:

Mass:

Tier 1: Object can be up to 1 kg per skill rank in mass.

Tier 2: Object can be up to 5 kg per skill rank in mass.

Tier 3: Object can be up to 10 kg per skill rank in mass.

Tier 4: Object can be up to 20 kg per skill rank in mass.

Tier 5: Object can be up to 100 kg per skill rank in mass.

Minimum Temperature:

Tier 1: Temperature falls at 10 degrees per round to a minimum of 20 degrees Celsius below the ambient temperature.

Tier 2: Temperature falls at 10 degrees per round to a minimum of 50 degrees Celsius below the ambient temperature.

Tier 3: Temperature falls at 10 degrees per round to a minimum of 100 degrees Celsius below the ambient temperature.

Tier 4: Temperature falls at 10 degrees per round to a minimum of 200 degrees Celsius below the ambient temperature.

Tier 5: Temperature falls at 10 degrees per round to a minimum of 300 degrees Celsius below the ambient temperature.

Cryokinetic Bolt

Field: Psychokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Instant at all Tiers

Type: Physical Attack

RR: Not Applicable

Description: Creates a burst of intense cold that a psychic can direct at one or more chosen targets. This is treated as a physical attack resolved on the Cold Critical Table. The attack size is given by the Discipline-specific Tiering and all normal combat rules, including damage caps, apply.

Tiers:

Tier 1: Tiny Cold Critical

Tier 2: Small Cold Critical

Tier 3: Medium Cold Critical

Tier 4: Large Cold Critical

Tier 5: Huge Cold Critical

Cryokinetic Field

Field: Psychokinesis

Range: Standard

Area of Effect: Standard (Radius)

Duration: Standard

Type: Utility

RR: Will

Description: The activator can generate a field that protects against natural and artificial cold. At higher Tiers, this Discipline provides a DB bonus to all cold-based attacks, including cryokinetic bolts. If the center point of the field is the activator, then the field moves with the activator, otherwise it is immobile.

Tiers:

Tier 1: All within the Field are protected against all natural cold.

Tier 2: As Tier 1, but all within the Field receive a modifier of +10 to their DB versus cold-based attacks.

Tier 3: As Tier 1, but all within the Field receive a modifier of +20 to their DB versus cold-based attacks.

Tier 4: As Tier 1, but all within the Field receive a modifier of +30 to their DB versus cold-based attacks.

Tier 5: As Tier 1, but all within the Field receive a modifier of +40 to their DB versus cold-based attacks.

Kinetic Field

Field: Psychokinesis

Range: Standard

Area of Effect: Standard (Radius)

Duration: Standard

Type: Utility

RR: Will

Description: The activator can generate a field, which protects against kinetic energy attacks entering the field. Such attacks include archaic thrown and missile weapons, blasters, firearms, needlers, flamers, sonic weapons and grenades. The field does not protect from melee attacks or ranged weapons attacks made by anyone already inside the field. If the center point of the field is the activator, then the field moves with the activator, otherwise it is immobile.

Tiers:

Tier 1: Bonus of +10 to DB versus kinetic energy attacks

Tier 2: Bonus of +20 to DB versus kinetic energy attacks

Tier 3: Bonus of +30 to DB versus kinetic energy attacks

Tier 4: Bonus of +40 to DB versus kinetic energy attacks

Tier 5: Bonus of +50 to DB versus kinetic energy attacks

Pyrokinesis

Field: Psychokinesis

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Utility

RR: Will

Description: Using this Discipline the activator may raise the temperature of any inanimate material (solid, liquid, or gas) at a rate of 10 degrees Celsius per round up to a maximum temperature of 40 degrees Celsius above the ambient temperature. The activator must concentrate in order to raise the temperature, otherwise it will remain constant. Dependent on material, this Discipline may cause it to change state or even burst into flames, and the SysOp may require malfunction rolls for items that have been heated to extreme temperatures. Persisting in carrying or wearing a very hot item may result in Tiny Heat criticals (SysOp discretion on severity). Once the Discipline's duration finishes, the material will cool normally to the ambient temperature at the same rate it was heated. This Discipline cannot be used in a vacuum.

Tiers:

Mass:

Tier 1: Object can be up to 1 kg per skill rank in mass.

Tier 2: Object can be up to 5 kg per skill rank in mass.

Tier 3: Object can be up to 10 kg per skill rank in mass.

Tier 4: Object can be up to 20 kg per skill rank in mass.

Tier 5: Object can be up to 100 kg per skill rank in mass.

Maximum Temperature:

Tier 1: Temperature rises at 10 degrees per round to a maximum of 40 degrees Celsius above the ambient temperature.

Tier 2: Temperature rises at 10 degrees per round to a maximum of 100 degrees Celsius above the ambient temperature.

Tier 3: Temperature rises at 10 degrees per round to a maximum of 200 degrees Celsius above the ambient temperature.

Tier 4: Temperature rises at 20 degrees per round to a maximum of 400 degrees Celsius above the ambient temperature.

Tier 5: Temperature rises at 20 degrees per round to a maximum of 600 degrees Celsius above the ambient temperature.

Pyrokinetic Bolt

Field: Psychokinesis

Range: Standard

Area of Effect: Standard (Targets)

Duration: Instant at all Tiers

Type: Physical Attack.

RR: Not Applicable

Description: Creates a burst of intense heat (which may appear as a bolt of fire) that a psionic can direct at one or more chosen targets. This is treated as a physical attack resolved on the Heat Critical Table. The attack size is given by the Discipline-specific Tiering and all normal combat rules, including damage caps, apply.

Tiers:

Tier 1: Tiny Heat Critical

Tier 2: Small Heat Critical

Tier 3: Medium Heat Critical

Tier 4: Large Heat Critical

Tier 5: Huge Heat Critical

Pyrokinetic Field

Field: Psychokinesis

Range: Standard

Area of Effect: Standard (Radius)

Duration: Standard

Type: Utility

RR: Will

Description: The activator can generate a field that protects against natural and artificial heat and fire. At higher Tiers, this Discipline provides a DB bonus to all heat-based attacks, including pyrokinetic bolts, lasers (because they harm by heating), blasters, and flamers. If the center point of the field is the activator, then the field moves with the activator, otherwise it is immobile.

Tiers:

Tier 1: All within the Field are protected against all natural heat and fire.

Tier 2: As Tier 1, but all within the Field receive a modifier of +10 to their DB versus heat-based attacks.

Tier 3: As Tier 1, but all within the Field receive a modifier of +20 to their DB versus heat-based attacks.

Tier 4: As Tier 1, but all within the Field receive a modifier of +30 to their DB versus heat-based attacks.

Tier 5: As Tier 1, but all within the Field receive a modifier of +40 to their DB versus heat-based attacks.

Telekinesis

Field: Psychokinesis

Range: Standard

Area of Effect: Standard

Duration: Standard

Type: Utility or Physical Attack

RR: Will

Description: This Discipline allows the activator to move or lift an object with the power of the mind. Higher Tiers permit more massive objects to be moved and at greater velocities. Using the Hurled Attack Tier-specific and Mass abilities, the adept can hurl one object telekinetically at a target per round, making a Physical Attack using the skill bonus in this Discipline as the OB on the Crush or Impact Critical Tables (SysOp's discretion). The psionic character must concentrate in order to make telekinetic attacks, the target of the attacks must be within range of the Discipline, and the objects to be hurled must also be within range of the Discipline.

Tiers:

Hurled Attack:

Tier 1: May make a Tiny Crush or Impact critical. Requires a minimum mass of 2 kg.

Tier 2: May make a Small Crush or Impact critical. Requires a minimum mass of 10 kg.

Tier 3: May make a Medium Crush or Impact critical. Requires a minimum mass of 20 kg.

Tier 4: May make a Large Crush or Impact critical. Requires a minimum mass of 40 kg.

Tier 5: May make a Huge Crush or Impact critical. Requires a minimum mass of 200 kg.

Mass:

Tier 1: Total mass of objects can be up to 1 kg per skill rank.

Tier 2: Total mass of objects can be up to 5 kg per skill rank.

Tier 3: Total mass of objects can be up to 10 kg per skill rank.

Tier 4: Total mass of objects can be up to 20 kg per skill rank.

Tier 5: Total mass of objects can be up to 100 kg per skill rank.

Velocity:

Tier 1: Objects can be moved at up to 1 meter per skill rank per round.

Tier 2: Objects can be moved at up to 2 meters per skill rank per round.

Tier 3: Objects can be moved at up to 5 meters per skill rank per round.

Tier 4: Objects can be moved at up to 10 meters per skill rank per round.

Tier 5: Objects can be moved at up to 20 meters per skill rank per round.

Telekinetic Hand

Field: Psychokinesis

Range: Standard

Area of Effect: Standard

Duration: Concentration at all Tiers

Type: Utility or Physical Attack

RR: Will

Description: This Discipline allows the activator to perform fine manipulations of objects with the power of the mind – as if the activator had an invisible remote hand. The activator can use tools, fire weapons, operate the controls of machinery, attack someone at a distance, etc. The activator uses the lower of the relevant skill and his skill bonus in this Discipline, with a further modifier according to Tier level. Direct attacks made using this power "using the invisible hand" may be made using the Grapple, Martial Arts Strikes, or Martial Arts Sweeps Critical Tables – the target must be within range. Inner Hand options must abide by the mass limits on objects – thus to crush a target's windpipe, the mass of the target must be within the chosen Mass Tier and skill ranks known.

Tiers:

Attack Size:

Tier 1: Tiny Critical

Tier 2: Small Critical

Tier 3: Medium Critical

Tier 4: Large Critical

Tier 5: Huge Critical

Feedback:

Tier 1: No feedback.

Tier 2: Activator can "feel" the simple presence or absence of something solid but no fine detail.

Tier 3: Activator can perceive the presence and density of fluids and discern large surface details.

Tier 4: Activator can discern aspects of fluids such as pressure and flow, and solid surface textures.

Tier 5: Activator can discern microscopic details.

Finesse

Tier 1: -40 penalty to all telekinetic maneuvers.

Tier 2: -30 penalty to all telekinetic maneuvers.

Tier 3: -20 penalty to all telekinetic maneuvers.

Tier 4: -10 penalty to all telekinetic maneuvers.

Tier 5: No penalty to all telekinetic maneuvers.

Inner Hand

Tier 1: Telekinetic Hand is blocked by a barrier (i.e. cannot reach through materials or inside objects).

Tier 2: As Tier 1, except Telekinetic Hand can reach through (but not inside) non-living non-metallic materials.

Tier 3: As Tier 2, except Telekinetic Hand can reach through (but not inside) non-living metallic materials.

Tier 4: As Tier 3, except Telekinetic Hand can manipulate through and inside any non-living materials.

Tier 5: As Tier 4, except Telekinetic Hand can manipulate through and inside living materials (e.g. skin, bone, etc.), but living beings may make a Will RR which if successful terminates the activation.

Mass:

Tier 1: Total mass of objects can be up to 1 kg per skill rank

Tier 2: Total mass of objects can be up to 5 kg per skill rank.

Tier 3: Total mass of objects can be up to 10 kg per skill rank.

Tier 4: Total mass of objects can be up to 20 kg per skill rank.

Tier 5: Total mass of objects can be up to 100 kg per skill rank.

Field of Telepathy

Attack

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Attack

RR: Will

Description: This Discipline disrupts the target(s)' mental control over their body. This interference ranges from a mild penalty to all maneuvers to complete unconsciousness for the duration of the activation. The activator should choose (at time of activation) whether the effect is based on painful disruption or a soporific suppression.

Tiers:

Tier 1: Target(s) suffer a –20 penalty to all maneuvers.

Tier 2: Target(s) suffer a –40 penalty to all maneuvers.

Tier 3: Target(s) are stunned.

Tier 4: Target(s) are unable to act physically.

Tier 5: Target(s) are completely unconscious.

Cloaking

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: The target(s) of this Discipline are completely shielded from mental detection using the Clairsentience Discipline and psionic detection devices.

Tiers:

No Discipline-specific Tiering.

Clouding

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Concentration at all Tiers

Type: Utility or Attack.

RR: Will

Description: This Discipline allows the activator to manipulate what is perceived by the target(s). At lower Tiers, the activator is able to partially or completely disrupt any sensory input from one or more senses, e.g. a victim can be made effectively blind or deaf. At higher Tiers, the activator can selectively "edit out" persons or objects from the target(s)' senses, e.g. the sentry is unable to see the black-clad ninja clambering over the wall, or create sensory hallucinations, e.g. the sentry "sees" an imaginary gravtank hurtling towards him. If used on multiple targets, the activator must edit out or project the same sensory stimuli to all targets.

Tiers:

Disruption:

Tier 1: Activator can partially disrupt one sense (chosen at activation time) of the target(s). Target(s) suffer a –20 penalty to all Perception maneuvers and any other actions relying on this sense.

Tier 2: Activator can severely disrupt one sense (chosen at activation time) of the target(s). Target(s) suffer a –50 penalty to all Perception maneuvers and any other actions relying on this sense.

Tier 3: Activator can completely disrupt one sense (chosen at activation time) of the target(s). Target(s) suffer a –100 penalty to all Perception maneuvers and any other actions relying on this sense.

Tier 4: The activator can selectively create or remove one element (a thing or group of very similar things) from one sense (chosen at activation time) of the target.

Tier 5: The activator can selectively create multiple elements and/or remove any elements using one sense (chosen at activation time) of the target.

Senses:

Tier 1: The activator can affect one sense.

Tier 2: The activator can affect two senses.

Tier 3: The activator can affect three senses.

Tier 4: The activator can affect four senses.

Tier 5: The activator can affect five senses.

Control

Field: Telepathy

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Attack

RR: Will

Description: Allows the activator to control the body of the target. The commands are relayed mentally to the victim. The victim will follow a command for the duration of the activation or until a new command is issued, whichever comes sooner. Issuing a new command requires the adept to concentrate for a full round. Any command that places the target in danger, involves obvious self-harm, or is alien to the target will allow the target to make a new RR.

Tiers:

Tier 1: (Limited basic motor control) The activator has partial control over one part of the target's body (e.g. hand, pair of legs, head, etc.) and can make the target perform simple actions using that part (fire (but not aim) a gun, walk jerkily, etc.) or prevent the target taking actions (stop him speaking, etc.). No maneuver more difficult than Medium may be performed by the controlled body part and the activator must use his own skill bonuses at a –50 penalty.

Tier 2: (Limited advanced motor control) As Tier 1, except the activator has full control over the chosen body part and maneuvers of any difficulty degree may be performed by the controlled body part. The activator must use his own skill bonuses at a –20 penalty. Activator can make target speak at this Tier.

Tier 3: (Complete basic motor control) As Tier 1, except the activator has partial control over the target's entire body. No maneuvers more difficult than Medium may be performed, and the activator must use his own skill bonuses at a –50 penalty.

Tier 4: (Complete advanced motor control) As Tier 2, except the activator has full control over the target's entire body, and there are no limits on maneuver difficulty. The activator must use his own skill bonuses at a –20 penalty.

Defense

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: This Discipline improves the target's resistance against all psionic Disciplines using the Utility or Attack modes.

Tiers:

Tier 1: Bonus of +10 to all RRs versus psionic effects

Tier 2: Bonus of +20 to all RRs versus psionic effects

Tier 3: Bonus of +30 to all RRs versus psionic effects

Tier 4: Bonus of +40 to all RRs versus psionic effects

Tier 5: Bonus of +50 to all RRs versus psionic effects

Empathy

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: This Discipline allows the activator to sense and manipulate emotions in the target(s). The activator can only sense the emotions of one target in any given round. Changing to a new target (whether a willing target or one who failed the original RR) takes one round. All potential targets must be designated at activation time. Activators can project the same emotion into multiple targets simultaneously. Projected emotion must be chosen at activation time and may only be changed for Tier 5 effects.

Tiers:

Tier 1: Activator can sense strong emotions of the target(s).

Tier 2: The activator can sense all emotions in the target(s).

Tier 3: The activator can project a mild emotional response in the target(s).

Tier 4: The activator can project a strong emotional response in the target(s).

Tier 5: The activator can play target(s)' emotions like a harp, i.e. can project a varying emotional response of any strength in the target(s).

Scan

Field: Telepathy

Range: Standard

Area of Effect: 1 target at all tiers

Duration: Standard

Type: Utility or Attack

RR: Will

Description: This Discipline allows a psionic character to read the thoughts of the target.

Tiers:

Scan Depth:

Tier 1: Activator can read the surface thoughts of target **or** what they perceive through one sense (chosen at time of activation)

Tier 2: As Tier 1 plus activator can perceive the reasoning and thought patterns behind surface thoughts.

Tier 3: As Tier 2 plus the activator can also scan target's conscious memories at a rate of 1 scene per round.

Tier 4: As Tier 3 plus the activator can also scan target's subconscious memories at a rate of 1 scene per round.

Senses:

Tier 1: The activator can share one sense of the target.

Tier 2: The activator can share two senses of the target.

Tier 3: The activator can share three senses of the target.

Tier 4: The activator can share four senses of the target.

Tier 5: The activator can share five senses of the target.

Suggestion

Field: Telepathy

Range: Standard

Area of Effect: 1 target at all Tiers

Duration: Standard

Type: Attack

RR: Will

Description: This Discipline allows the activator to use the power of suggestion to persuade the target to act or fail to act as the activator desires. At each Tier, the activator can influence one decision the target makes, or persuade the target to undertake (or not undertake) one action, but the degree of influence varies. The activator must be able to speak to the target in a mutually comprehensible language. Once the duration of the activation is over, the target will not automatically question his actions unless there are obvious side effects, or he is otherwise prompted to think about it.

Tiers:

Suggestive Potency:

Tier 1: The influence is only powerful enough to persuade in situations that don't matter greatly to the target, or to tip the balance, or provide the benefit of the doubt, in situations that are a fairly close call. The target won't do something that they would not normally do. Where contrary evidence is obvious, this level of suggestion will fail.

Tier 2: The influence is sufficiently strong to make the target do things they wouldn't normally do, and make decisions that are obviously wrong. If following the suggestion would have serious consequences (i.e. being fired, this level of suggestion will fail.

Tier 3: The influence is powerful and can make the target do things alien to them. If following the suggestion would place them in physical danger, this level of suggestion will fail.

Tier 4: The influence is puissant and can make the target enter dangerous situations. If following the suggestion would place the target at grave risk of dying, this level of suggestion will fail.

Tier 5: The influence is total and the target will perform the given instructions to the best of their ability.

Delayed Trigger:

Tier 1: The suggestion can be implanted in the target's subconscious and will attempt to take effect when a specific trigger happens. The trigger must occur within ten rounds per skill rank of the initial activation or the effect is wasted.

Tier 2: As Tier 1, but the trigger can happen up to one minute per skill rank after initial activation

Tier 3: As Tier 1, but the trigger can happen up to ten minutes per skill rank after initial activation

Tier 4: As Tier 1, but the trigger can happen up to one hour per skill rank after initial activation

Tier 5: As Tier 1, but the trigger can happen up to one day per skill rank after initial activation

Telepathy

Field: Telepathy

Range: Standard

Area of Effect: Standard (Targets)

Duration: Standard

Type: Utility or Attack

RR: Will

Description: The activator can communicate mentally with the target. If the activator and the target(s) share a common language, then the communication can be in the form of words intelligible to both sides. Alternatively the activator and targets may send "images" to each other at a rate of one image per round. A "telepath" is defined (for the purposes of this Discipline) as any individual with one or more skill ranks in this Discipline.

Tiers:

Tier 1: Activator can send a one-way message to another telepath.

Tier 2: The activator can establish two-way communication with another telepath target.

Tier 3: The activator can send a one-way message to a non-telepath target.

Tier 4: The activator can establish two-way communications with a non-telepath target.

Wipe

Field: Telepathy

Range: Standard

Area of Effect: 1 target at all tiers

Duration: Standard

Type: Utility or Attack

RR: Will

Description: This Discipline permits its possessors to erase memories. At lower Tiers, recent memory is simply deleted and the victim, should he try to recall the affected memory, will be aware that he is suffering from "missing time". At Tiers 3 and 4, this discipline can be used with the Scan discipline to remove longer-term memory. At Tier 5 any memory can be selectively edited, e.g. an adept could edit out all instances of himself in a sentry's memory, but the sentry would "remember" that she never saw the character.

Tiers:

Tier 1: For the duration of the activation, the target's short-term memory is disrupted. This prevents the target from attempting any supporting maneuvers, multi-round maneuvers (such as ambush, computer operation, mental focus, reloading weapons, etc.), and multi-round combat actions (such as aiming, etc.). The target can still attempt single-round maneuvers and simple combat actions (SysOp's discretion) at a -10 penalty.

Tier 2: Target will forget everything that happened up to ten minutes per rank prior to the activation and anything that happens thereafter while this Discipline is active.

Tier 3: Target will forget everything that happened up to one hour per rank prior to the activation and anything that happens thereafter while this Discipline is active **or** (in conjunction with the Scan discipline), the activator can remove the target's conscious memories at a rate of 1 scene per round.

Tier 4: Target will forget everything that happened up to one day per rank prior to the activation and anything that happens thereafter while this Discipline is active **or** (in conjunction with the Scan discipline), the activator can remove the target's subconscious memories at a rate of 1 scene per round.

Tier 5: Target will forget everything that happened up to one week per rank prior to the activation and anything that happens thereafter while this Discipline is active **or** (in conjunction with the Scan discipline), the activator can **selectively** remove or edit the target's conscious or subconscious memories at a rate of 1 scene per round.

System Operator's Guidelines

This final chapter concentrates on key information and rules needed by the System Operator (SysOp) when running a game. It focuses on a handful of key topics. It is intended to aid the SysOp in the running of HARP SF and in providing campaign examples for using HARP SF in the Tintamar universe.

SysOp Tips

Most SysOps learn how to run games by trial and error. Sometimes a beginning SysOp can learn by playing in other SysOps' games and observing what works and what does not. This section will provide simple tips and tricks to help the SysOp.

Have Fun: Remember this is just a game. It is not a battle between the SysOp and the players to kill off PCs or NPCs. Everyone is meant to have fun with this game.

Know the rules: The SysOp should know the **HARP SF** rules. There's an old adage in science-fiction that a writer should either know the science or know someone who does. You may not be able to remember all the rules (even the author has to check the details sometimes!), but as long as you can find the rules quickly when needed, you will be fine. Remember that this is only a game system. It cannot cover every situation. Sometimes you will have to make up rulings on the fly to cover circumstances that the author or his playtesters or his editors didn't imagine. The Maneuver Table offers several different resolution methods – by applying one of them, you should be able to cope with those unexpected situations.

The rules are not etched into starship hull metal: They are guidelines on how to run certain aspects of the game. If a rule doesn't fit your game's style, change it. Do tell your players when you change a rule so that they are not running their characters under the assumption that something works according to the published rules when you have changed it to work differently under your house rules.

Don't change rules in the middle of a session: Unless you find that a rule is really destructive to the game, it is always best to wait until between sessions to institute rule changes. You should always be cautious about making rules alterations that require players to rework their characters. Such modifications tend to annoy players.

Be consistent: Players prefer and enjoy consistency. Once you make a ruling or interpret the rules in one way, then you should stick with the ruling or the interpretation. You should not change your mind on the spur of the moment, unless you discover that you have made a terrible mistake. If you have made a mistake in a ruling and you need to change it, talk to your players. They will normally accept an apology and help you to sort things out. They want to have fun and they want you to have fun.

No SysOp's plan survives contact with the players: This is an old maxim, but it holds true in all games. Players will always have their characters do something unexpected, or go off in a direction that the SysOp didn't foresee. The SysOp should be prepared. You don't need to have details on every star system in the known universe prepared, but you need to know something about likely destinations.

Be prepared: You cannot realistically have a plan for everything that players might do. What you can do is have backup incidents that you can bring into play when they do something very unexpected. On a planet, this might be a "random" encounter with the local fauna or criminals. In space, it might be a malfunction with the ship, unexpected solar storm, space debris, pirates, or a naval patrol.

Be organized: Modest amounts of organization can do wonders in terms of smooth running games and avoiding embarrassment. Knowing where to find your important campaign information (i.e. planet descriptions, NPC names, any player handouts, etc.) can save a lot of time and prevent consistency errors where one session a planet is a hot desert, the next it has become an ice world.

Know what the players want: Ask the players what they want from the game. In particular, ask them to give you a list of their characters' goals. Then you can work these goals into the stories and plot lines of the campaign so that the characters have a chance to accomplish them.

Don't overshadow the characters: Occasionally a SysOp will fall into the trap of becoming overly attached to a particular non-player character (NPC) who then is always coming to the rescue of the party or is always doing things better than the player-characters. Players will quickly conclude that the game is the NPC's story and become disenchanted. The PCs should always be the protagonists in the story; the NPCs are the supporting cast.

Be flexible: Do not become imprisoned by a single idea or concept. The unexpected can and will happen. You might want to set up a particular alien starship captain to be the party's recurring nemesis, but the characters get lucky and blow his ship to atoms the first time they meet. Don't despair – simply create a new enemy. It might be a kinsman of the first alien or a protégé. Use the unexpected to your advantage as a springboard to new ideas.

Don't railroad the characters: The SysOp should not compel the characters to follow a predefined plot and planned adventures. Players do not like this. By using plot hooks (such as rumors, newscasts, etc.), by relying on character goals, and by playing to characters' greed, sense of honor, or simple self-preservation, the players will convince themselves that following the plot was their own idea and the right decision. If they take the occasional detour, they will probably get themselves back to the main plot in due course. If they seem happy going off on a tangent permanently, gently adapt the plot to suit the new direction. Nothing a SysOp prepares is ever wasted.

Keep the game moving: Players will often get bored if things slow down too much, or if there are long periods of inactivity. Long periods of time in hyperspace can be glossed over if nothing is going to happen during that period. Ask the players what their characters are doing – they might be training in new skills, reading up on the destination, recuperating from injuries, etc. Let the players use the opportunity to make plans.

Don't let the dice rule the game: This issue is more one of style than anything else. Some SysOps make all dice rolls in front of the players while others do not. This applies mostly to those SysOps who do not make every roll in front of the players. Part of a role playing game is telling a story, and sometimes a roll of the dice can have an adverse effect upon the story. If this happens, then feel free to change the result to one more suited to the situation.

Don't fudge dice rolls and get caught: If you fudge dice rolls, don't do it often, or let the players catch you doing it. If the characters are never at any risk because the players know that you fudge the dice rolls, then much of the excitement of the game simply drains away. Invulnerable characters who simply breeze through every challenge are much less fun than those who struggle against the odds and win by the skin of their teeth. So fudge dice rolls sparingly, say to prevent a character being killed accidentally by a bad roll at just the wrong time.

Don't kill characters needlessly: If a character does something really stupid that will get him killed, especially if you ask the player "are you sure?" before letting him go ahead, then let the dice fall where they may. But in other situations where random chance would kill the character, you might want to provide a way out for the character.

Don't obstruct the emergency exits: Ships can be completely destroyed in vehicle combat. Blowing up the party's spaceship can potentially kill **all** the characters and end the campaign abruptly. In the event that the party's vehicle takes damage that would lead to sudden destruction, give the characters time to get out of the vehicle regardless of what the critical result says in terms of how long the vehicle has left in this universe.

If things are too easy, don't pile on more opponents: If the characters gun down the first wave of enemy soldiers without taking a scratch, don't have the next wave appear immediately. It threatens the players' suspension of disbelief. If an encounter ends up being too easy, then simply reduce the Experience Points gained.

Never kill player-characters off screen: Player-characters should never be killed between game sessions or without a chance of the player-character surviving. If a player-character runs into a room alone, the character must have a chance to survive the encounter and the SysOp and the player must role-play the event. Preferably there should be an opportunity for other PCs to reach the first character in time.

Don't be too generous or too stingy: It is easy to upset the balance of the game by giving characters too much money. Low-level billionaire characters can buy their way out of trouble. At the opposite end are games where the SysOp gives out too little cash. Characters in science-fiction settings are usually less motivated by money than in fantasy, but players still like to have cash so that their characters can buy cool gadgets and maintaining a private starship takes credits. Given a choice, err on the side of stinginess – it is always easier to give out more credits later than to take it away.

Focus on the characters not the technology: It is very easy in a science-fiction setting with highly advanced technology for every problem to be solved through clever use (or abuse) of some aspect of that technology. Characters should overcome challenges themselves rather than simply chanting technobabble, unless the game is meant to be about the social interactions of the characters.

Don't get carried away with the science and technology: It is easy to postulate a scientific or technological breakthrough, which is so useful that it is the solution to a whole class of problems or which has ramifications that forever change the types of campaigns that are possible.

Players who know more science than the SysOp: Sometimes players will be more expert in a particular field of science than the SysOp, and sometimes they will take advantage of that expertise to pursue the implications of a SysOp decision to its logical conclusion. SysOps should either work in tandem with the player to avoid undesirable consequences of a SysOp's limited knowledge or simply play down that aspect of science.

Don't let the characters get away with murder: In a science-fiction setting, many adventures may take place in relatively civilized locations. For some players, the temptation to resolve conflicts of interest through violent means will be very strong. In a civilized environment, opening fire on anyone without extremely good cause will bring down the wrath of the local authorities and they will have superior firepower, superior numbers and superior organization. When in civilized territory, act civilized.

Work out the math in advance: Space-based vehicle combat can involve a certain amount of number-crunching to determine when starships enter mutual firing ranges, how long it will take missiles to reach a target, how far it is to the exit Lagrange Point and how long it will take to get there, etc. Calculating such details can slow the game down. SysOps may find it useful to calculate some of the numbers in advance of the session or when the players are discussing their plans. Decide when a hostile ship will fire a missile salvo and where it will be relative to the characters' ship. Determine the distance to the L4 and L5 points and calculate how long it will take to get there from the character's most likely starting position based on maximum acceleration and velocity.

Be aware of the environment: In space, no one can hear you scream because sound does not travel in a vacuum. SysOps should remember that what is normal on Earth may not be true on other worlds or in space, and ensure that PC and NPC actions take account of those differences.

Customizing Your Game

Science-fiction offers infinite possibilities in terms of campaigns and settings. The System Operator must determine what will be allowed or disallowed in the setting and then tailor **HARP SF** to match the requirements of the campaign universe.

Customizing the Rules

The principles of character creation, the mechanics of combat, the rules for adventuring in hazardous environments, and many other aspects of **HARP SF** will be common to most, if not all, science-fiction campaigns. They are not compulsory rules, but they are likely to be useful in a multitude of settings.

HARP SF also incorporates four modular subsystems whose applicability to the chosen universe setting must be determined by the SysOp. Each of these subsystems is optional – the "balance" of the system will not be disturbed if all, some, or none of the subsystems are included in the game. The four systems are genetic adaptation (Chapters 5 and 7), psionics (Chapter 11), cyberware and nonbiological characters (the virtual persons, AIs, and robots) which will be covered HARP SF Xtreme .

Genetic Adaptation: This is most appropriate in settings where genetic modification is used to create "superhumans" or to adapt colonists to alien environments. The SysOp must determine which species (if any) practice genetic adaptation, and decide which Genetic Talents are available to which species and cultures. For suitably advanced civilizations, the SysOp may wish to allow the genetic augmentation of adult individuals. Humanity, in particular, has a tendency to be intolerant of those who are different or deem themselves "superior" – other races may be more (or less) enlightened.

Psionics: Some SysOps will consider psionics to be superstitious nonsense and charlatanry that has no place in a hard science-fiction setting. Other SysOps deem psionics to be an integral and vital component of their universe. Include or exclude psionics in the game according to the requirements of the setting. SysOps should refer to Customizing Psionic Fields, Disciplines, and Tiers (Chapter 12) to fine-tune this subsystem for their needs.

Cyberware: Computerized augmentation of humans is a plausible future for our own species. The opportunity to enhance their characters with cool built-in gadgets will enthuse many players. Assuming cyberware is suitable for the SysOp's setting, then the SysOp should examine all the cyberware devices, excluding any that are inappropriate in nature or potency for the intended game.

Virtual Persons, AIs, and Robots: The SysOp must choose firstly whether such entities exist, and if they do, can players take them as characters? If AIs are simply clever programs and robots are merely intelligent machines, but do not have the rights and responsibilities of "people", then player-characters AIs and robots should be avoided, unless the player(s) are prepared to handle the unfairness of societies that will treat them as smart but expendable tools. Virtual characters, courtesy of their biological origin, may have different rights to biological characters, but will almost certainly be people and so more suitable for player-characters. Dependent on the nature of adventures in the campaign, electronic characters may also be disadvantaged if they reside solely in cyberspace. Playing the onboard AI of a starship can be fun when the action is mostly in space, but much less so when the action is planetside.

Technology: Although not a rules subsystem per se, the SysOp should use the Early, Mature and Advanced classifications to tweak the available equipment to suit the game. Any piece of equipment that does not fit the SysOp's vision should be excluded.

SysOp's Note: Multiple Temporary Stat Bonuse. SysOps should not allow temporary stat bonuses to the same stat to "stack". Characters may gain temporary stat bonuses from cyberware Boosters, various Psi Disciplines from the Biokinetic Field, genemods, or advanced medicines. If more than one of these is active at the same time, apply the highest bonus rather than the total bonus.

Example: *Latham has a normal Quickness stat bonus of +11, a cyberware Speed Booster (+10 to Quickness) and access to Tier 4 Biokinetic Field effects. If Latham switches on the Speed Booster first, her Quickness bonus goes up by +10 from +11 to +21. If in the next round, she succeeds in activating Psi Quickness at Tier 4 (+20 to Quickness), then her Quickness bonus goes up from +11 by +20 to +31. If the Psi Quickness effect ends before the cyberware's duration, then Latham will receive the benefit of the cyberware booster until its duration runs out.*

Customizing Character Creation

Species: Some of the greatest classics of science-fiction literature only feature humans. Others take place in universes teeming with life, sentience and civilizations. The SysOp may include some or all of the alien races presented in Chapter 5 in a custom setting. The SysOp may also use the existing species as guidelines for new aliens of his own devising. A complete alien creation system will appear in the ***SysOp's Guide.***

Cultures: The cultures in Chapter 5 are deliberately generic and are not tied to any specific setting. The SysOp should tailor the cultures to the setting by adjusting skill ranks to suit. In particular, the SysOp should modify the skill sets to take into account the prevailing environment of a culture. For example, a Frontier culture on a desert world has no need of Swimming, so diverting Swimming skill ranks into Foraging/Survival (desert) would be apt. Vice-versa, Driving is much less useful than Marine Pilot or extra Swimming skill ranks on a water world. The following list of guidelines will allow you to customize the cultures without unbalancing the game.

- All cultures give 20 free skill ranks to a character raised by that culture.
- No culture has more than 3 ranks in a specific skill.

The SysOp should feel free to add or remove appropriate skills to a culture. However, it is strongly recommended that no culture should receive additional skill ranks in the Combat category.

Professions: Defining professions is a difficult business. They must capture genuine archetypes, be sufficiently broadly drawn to be applicable in multiple settings, yet narrow enough to ensure that each has its individual focus, and they must sound exciting in name and description. A SysOp can subtly adjust the tone of the game by renaming the professions – perhaps Soldiers might be known as Mercenaries or Troopers, Spies might be Agents or Investigators, Scouts might be Explorers, Techs could be called Engineers, and Dilettantes could be Generalists. Simply changing the titles produces professions with different connotations without any changes to the rules. (The SysOp may need to rename some Training Packages to prevent name clashes, though) It is possible that the SysOp may find that a new profession seems required in the game. Before creating a new profession, check to see if you can achieve the desired effect with a Training Package instead. If a new profession is really needed, then use the existing professions as templates to create other professions.

Training Packages: SysOps should utilize Training Packages as an opportunity to customize the game setting through creating unique packages for organizations and specialized educations. The acquisition of Training Packages can become minor or major personal goals for players by the addition of requirements that must be fulfilled for the characters to gain access to them.

Talents: The SysOp should carefully examine the lists of Talents for all characters (biological and otherwise), remove any that he deems inappropriate for his game, and inform the players of the changes. The SysOp may also add more talents to the lists, using existing talents as guidelines for determining the new talents' costs.

The SysOp should always record any customizations made to the game. Documenting system changes ensures that both the SysOp and the players know what to expect when playing the game.

The Language Table

When a character learns a language, they learn a specific number of ranks in that language. The number of ranks he or she has determines how well a character may speak or read/write a given language. Consult the Language Table to determine how well one character may understand another or be understood by others.

Language Table		
Rank	**Conversational Ability**	**Reading/Writing ability**
1	Recognition of the language when spoken.	Recognition of the written language.
2	The user can communicate and understand very basic concepts in the form of single words or very short phrases (e.g. eat, danger, room, money, enemy, bathroom, pain, etc.).	The user can read or write very simple phrases and words and possibly understand the context of very simple passages.
3	User can distinguish between major dialects, and the user can communicate moderately basic concepts in the form of phrases. User can get the tone/context of the language when spoken at a normal rate, but no more. He can understand basic phrases spoken at a slow pace.	User can get an overview of simple writings, but will have trouble with specific details. User can write very short sentences of a simple nature (i.e. at a third grade level).
4	User may converse on very simple subjects, using whole sentences instead of broken phrases. User can understand everyday conversation when spoken slowly.	Use can read moderately simple writings and understand most of the details. User still has trouble with subtle concepts. Basically, newspaper level reading ability. User can write sentences at a fifth grade level.
5	User can converse freely in everyday conversations of an average nature (e.g. market talk, peasant discussions, conversations with guards, etc.). Rapid and/or sophisticated speech is still troublesome.	Reading of most everyday writings and normal books. User can write on a seventh grade level.
6	Normal speaking level of the native population. Subtle or particularly sophisticated concepts still prove troublesome. User cannot understand dialects archaic speech out of the norm. User can converse freely on the same level.	Reading level of the average literate man. User writes at the ninth grade level.
7	True fluency. Understanding of, and conversation with, the most learned of native speakers. Sophisticated folk may still brand you as an outlander. Archaic or unusual concepts will still prove troublesome.	User writes at eleventh grade level and has the reading ability that is of average member of nobility.
8	Fluency plus the ability to recognize the regional and cultural origin of all speech (although such speech will still prove troublesome to speak or understand).	College writing level. User can read relatively complex material and recognize (but not fully understand) the nature of archaic or unusual dialects and concepts.
9	Absolute fluency in chosen dialect plus simple understanding and speaking ability in closely related dialects.	User can write and read very complex passages, even technical books, but only in the chosen dialect. Allows moderate translation of closely related dialects, and simple writing ability in such areas.
10	Absolute fluency of all the chosen languages and all closely related dialects. Extremely archaic and complex concepts may prove troublesome.	Reading and writing of the most complex nature in the chosen language, and a strong reading/writing ability in closely related dialects.

The Knowledge Table

The Knowledge Table is used to gauge the general amount of information that a character may gain from a successful use of a Scientific or Lore skill. While the number of skill ranks known gives a general idea of the detail of knowledge available to the character from the skill, a very successful roll can give the character specialized information that is more in-depth than their average grasp of the subject.

For every 20 points that their roll is above a success (i.e. 121, 141, 161, etc.), treat the character's effective knowledge skill ranks as being one row better than it actually is.

Example: *The crew of the Faffin' Around have landed on a low-lying island on the larger water world of a double planet. The natives have become extremely agitated, pointing frantically at the horizon. Dack's player decides to attempt a Planetology maneuver to deduce what is bothering the aborigines. The SysOp decides that this will be a Light (+20) maneuver. Dack has 10 skill ranks in Planetology. Dack rolls and gets a modified total of 169. This is more than 60 points above what is needed for success (i.e. 101). The SysOp decides that Dack once saw a relevant holovision documentary. Dack's recall and understanding is 3 steps higher than his skill rank would suggest in this instance. The SysOp uses the row for 15-16 skill ranks rather than the row for 10 ranks that Dack actually possesses. Dack has a Eureka moment and yells Tides! The party scrambles towards their shuttle, while the amphibious natives seek safety in sheltered waters.*

Table 12.2 Knowledge Ranks

Ranks	Knowledge
1 – 2	Allows basic recognition of the general type of the subject.
3 – 4	Allows basic recognition of the specific type of the subject.
5 – 6	The scholar may recall knowledge of the major points (sketchy outline) of the subject.
7 – 8	The scholar remembers all major points pertaining to the subject.
9 – 10	Allows the scholar knowledge of basic details on the subject.
11 – 12	The scholar recalls full technical summary on the subject.
13 – 14	The scholar understands full technical summary on the subject.
15 – 16	Scholar may begin to form basic inferences about subject, and recognize and cross-reference to similar subjects.
17 – 18	Allows the scholar to form multiple inferences and create accurate analogies to the subject. The scholar also has technical knowledge on similar subjects.
19 – 20	Scholar has obscure knowledge pertaining to the subject.
21+	Scholar has obscure and uncommon knowledge about various specific examples of the subject matter. If the character knows a related subject, then use one half his skill ranks in that related subject to determine what knowledge he may or may not possess.

Awarding Experience Points

Types of Experience Points

The System Operator awards experience points through a goal oriented experience point system. Characters can gain experience by accomplishing four main types of goals. They are:

Major Party Goal – This includes the completion of the current mission. This could involve evacuating a colony settlement that is under attack by raiders (and possibly fighting the raiders in the process), or infiltrating a corporate headquarters to acquire confidential information (where any combat is likely to end the mission in abject failure). The SysOp decides what "THE" major goal is for the current adventure, and this will vary according to the adventure's nature. There is normally only one Major Party Goal at any given time, unless the SysOp prefers to run multiple major story lines at the same time

Minor Party Goal – This type of goal is an important issue that needs to be resolved in order to complete the adventure and the Major Party Goal. It is conceivable that the accomplishment of a major party goal may not depend on any minor party goals.

Example: *The party wants to explore some ancient ruins. Unfortunately the alien natives consider the site sacred to their gods. The Minor Party Goal is to gain access to the ruins. Our heroes might persuade the natives that they are favored by the ancestor spirits or attempt a covert entry. Simply shooting their way in is not an option – FedPol and the AstroNavy take an extremely dim view of explorers who slaughter innocent sentients.*

Random encounters should always be considered to be a Minor Party Goal.

Major Personal Goal – These are the personal goals of the individual characters. A major personal goal is defined as one that can or will have a life changing effect on the character. For example, a major personal goal could be a character's aim of joining a specific organization or achieving the rank of starship captain in the AstroNavy.

Minor Personal Goal – These are the various important steps required to complete the major personal goal. As with party goals, some major personal goals may not require minor personal goals. It all depends on the goal itself.

Example: *To become a starship captain, Kathryn must first be accepted as an officer cadet at the AstroNavy Academy. This will require passing the rigorous entrance examinations.*

Note: Players can easily exploit Personal Goals so it is recommended that the SysOp only allow each character to have one major goal at a time. The SysOp will then determine what minor personal goals may be needed to accomplish the major personal goal. The SysOp has the final say on what constitutes a goal (of any type).

Bonus Experience Points – *varies.* The SysOp is free to award bonus experience points to the characters for good role-playing, good ideas, or any other thing that the SysOp wishes to award experience points for. No more than 100 – 200 bonus experience points should be awarded at any given time.

The game would quickly spiral out of control if every action that a character wished to complete were treated as goals. A personal goal must have a real impact on the life of the character. Party goals are the interim challenges and eventual climax of the current adventure. Normal everyday tasks are neither personal nor party goals.

Goal Difficulty

Some goals will be easy to achieve, others will be extremely difficult, even nearly impossible. It is the SysOp who decides the difficulty level of any particular goal. This is a significant responsibility for the SysOp, but the SysOp is the only person at the gaming table who really knows whether accomplishing a goal was a piece of cake or a "very close-run thing".

The following table lists the difficulty levels for the various goals and the experience point award that **each character should get for achieving that goal.**

Table 12.3 Experience

Difficulty	Major Party Goal	Minor Party Goal	Major Personal Goal	Minor Personal Goal
Routine	0	0	0	0
Light	30	20	20	10
Easy	50	30	30	20
Medium	100	50	50	30
Hard	200	100	100	40
Very Hard	300	150	150	50
Ext Hard	400	200	200	60
Sheer Folly	500	250	250	70
Absurd	1000	500	500	100

Determining Goal Difficulty

Determining goal difficulty will probably be amongst the most difficult tasks of any SysOp. Practice will help, but players and dice rolls can throw unexpected curves changing the actual difficulty radically from the expected. Thus SysOps should always determine the final goal difficulty **after** the goal has been achieved.

SysOps may use the following list of guidelines as an aid in establishing goal difficulty and adjusting that difficulty up or down when the time comes to award experience points.

Combat-related Encounters/Goals: When setting the initial difficulty rating for foes, you should take and compare the average Offensive Bonuses and Defensive Bonuses of the characters against the average of the foes that the party will be fighting. For vehicular combat, compare vehicle statistics and relevant skills (such as Pilot, Gunnery, Signaling and Engineering (Magneto-gravitics). If they are close to being equal, then you should start off with a Difficulty Rating of Hard for the encounter.

If the party or party's vehicles is outnumbered, then raise the difficulty rating one or more levels, depending on how many more foes (or hostile vehicles) there are. If there are twice as many foes as there are members of the party then the Difficulty Rating for the encounter should be increased by at least two levels. Likewise if the party's vehicle(s) is/are outnumbered three to one, then increase the Difficulty Rating by two levels.

If the foes are weaker, or less in number than the party, then reduce the Difficulty Rating of the encounter a couple of levels. Similarly reduce the Difficulty Rating if the party's vehicle is pitted against a significantly inferior craft.

If the foe is less in number, but of significantly higher skill, then you may want to increase the Difficulty Rating accordingly. Similarly raise the Difficulty Rating if the characters' vehicle is pitted against a superior vessel.

Random encounters should **always** be treated as a Minor Party Goal, with the object of the goal being to stay alive.

Non-Combat Encounters/Goals: Characters can also gain experience points from non-combat goals and events. The SysOp must gauge the general Difficulty Rating by identifying the tasks that must be accomplished in order to complete the goal. All of these goals should start off with a base Difficulty Rating of Medium. For goals that involve substantial amounts of role-playing, you can adjust the Difficulty Rating up or down according to the quality of character interaction (both within the party and with non-player characters) For goals that involve sequences of key maneuver rolls, the Difficulty Rating of the maneuvers may be averaged to provide a Difficulty Rating for the goal.

Player Plans and Actions: The plans and actions of the characters in their attempts to accomplish their goals can also help determine the Difficulty Rating of the goal as well. Complex plans split a problem into multiple subproblems. Each subproblem may be individually easier to solve, but the number of failure points also increases. SysOps can, however, reward players for the portions of the plan that do succeed by considering each appropriate portion as a Minor Party Goal. Simple direct plans ("we go in all guns blazing") either work well or fail catastrophically. Players should not try to metagame the system by employing complex plans simply for the sake of garnering extra experience points. Instead they should use simple or complex plans as the situation merits. SysOps should also bear in mind that a problem may have many possible solutions.

Example 1: *While conducting a routine survey, a party of heroic Federation Naval officers and Marines has learned that the pirates have a base on a nearby world. They decide that there's no time like the present and proceed to the planet to overwhelm the pirates by a frontal assault.*

Our heroes have a straightforward plan of "hit hard, hit low, and hit first". Although they have the advantage of a brand-new Federation frigate, the pirate base has substantial defenses and several armed vessels that the corsairs can deploy against the authorities. The SysOp determines that this Major Party Goal is likely to have a Sheer Folly (or higher) Difficulty Rating. Assuming the characters survive, they will each receive at least 500 experience points.

Example 2: *Through their contacts, the crew of the Faffin' Around have learned of a pirate base on a nearby world where a number of Federation personnel are being held prisoner. The party decides on a two-pronged attack. Firstly the Faffin' Around will enter the star system covertly and equally stealthily approach the planet. Some of the group will then take a shuttle down to the planet landing hundreds of kilometers away from the base. This expeditionary force will travel overland by gravitic car, covering the final few kilometers on foot. Their intention is to gain access to the base and make their way undetected to the command center. Dependent on the strength of the opposition, they will either seize the command center or wreck the generators. Either way, the objective is to knock out the base shield and weapon systems. Meanwhile the Faffin' Around will race around the planet from its holding orbit and launch a full-scale attack on the unprepared pirate ships.*

The plan works better than expected with the infiltration team freeing the Federation prisoners who provide the extra muscle necessary to take and hold the

command center. The pirate vessels are caught between the firepower of the Faffin' Around and the base guns that have been turned against them.

The overall goal of eliminating the pirate base is still a Sheer Folly Major Party goal. Entering the solar system and reaching the planet undetected is an Extremely Hard Minor Party goal. The covert landing is a Hard Minor Party goal as is the trek to the base itself. Infiltrating the base without being detected is a Very Hard Minor Party goal. Taking control of the command center is an Extremely Hard Minor Party goal. In successfully completing the mission, the party has accomplished one Sheer Folly goal (500 XP), two Extremely Hard goals (2x 200 XP), one Very Hard goal (150 XP), and two Hard (2x 100 XP) goals. This gives a grand total of 1250 experience points for each person in the party.

Above and Beyond the Call of Duty: Usually characters will perform a mission to the best of their ability. Occasionally circumstances will give them the chance of going above and beyond the call of duty, to perform a heroic deed at extra hazard to their lives. Characters should be rewarded with extra experience points for such courage.

Example: *A Silth raider squadron has invaded an outlying star system. Federation fighters have engaged the bulk of the raiders, but several are en-route to the system's exit jump point. The scoutship Jenny Allen is also heading at best possible speed there. The Minor Party Goal is to successfully jump out, dodging or outrunning a few salvos of Silth missiles. It's a task that the party should be able to manage without too much difficulty. There's a wrinkle – an unarmed civilian passenger liner is also flying towards the jump point. It's not fast enough to reach safety ahead of the Silth. The party decides that they will buy the liner that time by staying in-system and taking on the Silth directly. Not necessarily the smart thing to do, but the right thing and the SysOp will reward the heroism accordingly.*

Tintamar Campaigns

So you have read all the **HARP SF** rules and are intrigued by the Tintamar universe, now comes the moment of truth: how to translate all this potential into a living, breathing campaign. At the heart of every good campaign is conflict. The player-characters (or their employers, patrons, superiors, etc.) desire some particular end, which may be wealth, fame, power, freedom, survival or some other goal. Unfortunately other individuals and organizations do not want them to attain this goal, perhaps because they want it all for themselves. Resolving this conflict by clever stratagems, diplomacy, and (occasional) violence will drive the campaign onward and forward.

Conflict in Tintamar

There is conflict everywhere in Tintamar; some of it occurs in the open, more happens behind the scenes, in the dark of space and on the frontier where there are few witnesses, and yet more seethes and simmers, awaiting the spark that will ignite it into a conflagration to imperil entire planets and civilizations.

Within human-controlled space, the tensions among the worlds of the Terran Federation are rising. On Old Earth, politicians espousing the manifest destiny of an Earth hegemony of space cite the Silth as a clear and present danger requiring a truly united human response. They thunder: "Mankind will never be slaves!" Others decry the political structure of the Federation as grossly unfair to Earth's citizens – more than a third of all humankind calls Earth home and pay Federation taxes, yet the colonies have five times as many voting delegates.

The solar colonies consider the Silth an ongoing menace. Even the Belter League is united in their determination that no bubble world die in the next Silth incursion. Their governments argue passionately for a full-scale offensive as the only credible response to flagrant breaches of the truce by so-called Silth "pirates". Perhaps their leaders will decide to take direct action by organizing privateer fleets?

Beyond the Solar System, the transformation of interstellar commerce by portal travel has made systems that lack portals jealous of those that do.

The metamorphosis of megacorporations into planetary governments and their drive for maximum profit at any cost is inciting unrest among their populations and disquiet elsewhere in the Federation. Rivalries among the megacorporations (both human and alien) sometimes flare into outright violence as they compete to lay exclusive claims to new habitable planets, mineral resources and archaeological artifacts of Builder origin. AstroNavy ships are few and far between in the Nexus Sector, and rarely sent elsewhere in the galaxy. Other (less advanced) sentient species have been discovered and some of these are hostile to contact. Officially, Terran corporations are forbidden from establishing bases on primitive worlds, but greed can lead to the rules being broken.

Strange societies are evolving on the four Interdicted worlds. Do smugglers break the blockades to traffic in high technology with them? Are the Interdicted merely fiercely independent or have they pursued directions that take them beyond the pale of conventional civilized behavior? Are they even truly human any longer? The Interdicted may not be willing to remain meekly at home forever.

And somewhere out in the deep space are the hidden human colonies of those who chose to flout the Declaration of Man decades ago. It is only a matter of time

before portal-accelerated Federation explorers stumble across them …

All is not sweetness and light among the other civilizations of the known galaxy.

Although grudgingly grateful for the intervention of the Wingmasters of Siva against the Silth, the Gorsivan colonies have no desire to forfeit their independence and become mere appendages of the Consensuality of Siva. On Siva itself, opinions are divided on whether or not the Consensuality should reassimilate the colonies. Factions are emerging and this issue could tear the Consensuality asunder.

The Silth raids on their bubble worlds have not been forgotten or forgiven by the Krakuren who dwell in the Tentacles of Tamazek. Like their counterparts in Sol's Asteroid Belt, they favor a preemptive strike on the Silth Dominions. Expansion in terms of colonies outside the Tamazek system could trigger the greatest territory grab in the Nexus Sector since the founding of the Silth Imperium and could fracture the Grand Alliance.

The Madji have already experienced the horrors of an interstellar civil war. Recontact between the homeworld clans and the colonial clans has been mostly peaceful until now. The rivalries are still as strong as ever, however, so the potential remains for the old hatreds to be wakened from slumber. Additionally there is a minority on Ji'mad'ji who would renounce off-world concerns. It is conceivable that these clans could (forcibly) dispossess the starfaring clans of their planetary holdings (whose attention is already divided) and force the starfarers into exile.

While competition amongst the Runcori world states is fierce, the Runcori are much more likely to come to grief as a consequence of a grand prank gone wrong. They claim their homeworld was destroyed and unguarded comments suggest that this was no cosmic misfortune, rather a deliberate act of war against them. If this is true, perhaps their old enemy searches yet for the survivors – will the Runcori fight or run if their enemy arrives in known space?

Few non-Cerans are aware that the modernist mindset of space-traveling Cerans is **not** shared by the whole species. The aristocratic Coldbloods still exercise real power in rural Ranoc, and while the older oligarchs seem content with their estates and liegefolk, the younger nobles are dissatisfied with their exclusion from the opportunities of space, believing their birthright entitles them to their "fair" share.

The current First Family of the Silth Imperium maintains its grip upon the throne and internal peace by focusing the aggression of the Great Families outwards. The "piracy" and "raiding" that the Dominions support (yet disclaim in diplomatic circles) probes the defenses of the other star nations, bleeds their commerce, and gives new Silth warriors real combat experience. The Silth gained faster-than-light travel from captured Runcori explorers; they have undoubtedly acquired the secrets of portal activation from more recent prisoners. If so, it is only a matter of time before they discover lesser portals (or even a greater portal) somewhere in their territory. The Silth have not renounced their dreams of galactic empire …

The Exploration Campaign

Together humans and aliens have explored a scant few thousand solar systems, an infinitesimal fraction of the billions of stars in the Milky Way. Robotic probes transit the known portals to new solar systems, identify any worlds of potential interest, and report back, paving the way for manned expeditions.

Boldly going where no one has gone before is a staple of science fiction. There are strange new worlds in abundance to be found on the frontier of human-controlled space, in the Nexus Sector, and for the truly daring elsewhere in the galaxy. Explorers may find isolated colonies of the known races that have disappeared from the galactic community for diverse reasons or discover wholly new sophont species and civilizations. Even on worlds, which no longer harbor intelligent indigenes, there are opportunities for the bold to win fame and fortune among the ruins of vanished cultures.

Exploration campaigns offer the greatest scope for multi-species adventuring groups. Most megacorporations are as happy to hire alien as human explorers, as long as they are competent in their chosen field and loyal to the company. Exploration teams will always include Pilots, Soldiers (for combat emergencies), Researchers and Techs (for scientific, medical and technical support), and Scouts (for planetside work). Entertainers and/or Merchants may have roles in interacting with intelligent natives for both cultural and trade exchanges, while suitably qualified Adepts, Fusions, Spies and even Dilettantes can be an asset to the team in unexpected situations. Exploration teams are on their own once they leave explored space – players will welcome the independence this entails. The explorers will be thrown onto their own resources and must solve problems without relying on the information resources of a planetary net. As almost all teams will be in the employ of a megacorporation or other organization, the SysOp will be able to prepare new systems in advance simply by requiring the team to explore stars according to their employer's priorities.

Space is an intrinsically hostile environment to the average sophont. New worlds harbor their own dangers in terms of terrain, oceans, weather and life forms (which need not be sentient to be hazardous to the unwary). Team members may be injured, even killed, on these missions. Replacing characters requires returning to base or having a few non-player characters as reserves who normally remain aboard ship. A skilful use of AI and/or organic NPCs also eliminates the issue of player-characters having to stay behind to guard the ship. (As any expedition worth

its salt will include multimodal vehicles for surface exploration, even Pilots have an excuse to leave the main ship.) A larger crew than just the player-characters also makes it more difficult for unscrupulous explorers to hijack a scoutcraft and turn pirates.

The Intrigue Campaign

Crime, espionage, conspiracies and political maneuvering flourish throughout the known worlds. Any of these could singly or in combination form the basis of an intrigue-based campaign.

Certain kinds of intrigue are suitable for multi-species adventuring groups. Megacorporations employ troubleshooter teams for special security details, resolve problems that local administrators cannot, investigate corporate crime, thwart and perform industrial espionage. On corporate-dominated worlds, such teams can expect the full cooperation of the authorities (and may even be law enforcement); beyond the corporate worlds, troubleshooters must work within the same constraints as any other private citizen. Hybrid intrigue/military campaigns could involve troubleshooters working alongside mercenary units in tackling pirates, Silth raiders, rival corporations, and malcontents.

Other campaigns will work best if all the characters are members of a single species. Human characters could be FedPol Agents and Investigators responsible for solving major crimes, tracking down dangerous fugitives, stopping illegal research, and protecting the Federation and its peoples from unscrupulous megacorporations, secessionists, and other threats. For a hybrid intrigue/military campaign, the characters could work for AstroNavy Intelligence instead.

Alternatively the characters could be rebels seeking to free their world from a tyrannical (corporate) government or secessionists seeking to win independence from the Federation. The authorities will have more resources in terms of equipment, personnel, and money. Rebels who want the latest tech will have to steal it. Successful missions will require careful planning and luck, while staying one step ahead of law enforcement will necessitate mobility, disguises, a network of safe houses, and justified paranoia, as anyone could be a double agent.

Spies are the obvious must-have profession in intrigue and investigative campaigns, but Adepts, Dilettantes, Entertainers, Fusions and Merchants can all be effective team members. Soldiers (as mercenaries, bodyguards, tough cops, and thugs) can provide the necessary muscle. Depending on the campaign details, Pilots, Researchers, Scouts and Techs may have strong supporting roles. Intrigue and investigation will suit SysOps who revel in fleshing out a particular area in the setting and love convoluted plots, and player groups who enjoy solving mysteries, unraveling the layers of conspiracies, and strong social interactions between characters and NPCs.

The Military Campaign

A full-blown combat-oriented campaign really needs the heroes to be members of the military rather than say corporate mercenaries. Consequently, all team members should probably be members of a single species. An all-human (including human electronic characters) group is undoubtedly the easiest to run in this context, as players should find it easy to get into the mindset of protectors of mankind.

Military campaigns need credible and engaging threats. The Federation routinely has to defend itself and its citizens against pirates, Silth raiders, and armed secessionist groups. Once a group had achieved some victories on a small-scale against such foes, the SysOp could raise the stakes by escalating an existing conflict: rebels might stage a coup d'etat against a planetary government or a quarantined system might decide to end its Interdiction. For a full-scale interstellar war, the SysOp need look no further than the Silth. Assuming that the Federation remains on friendly terms with the Grand Alliance during such a conflict, the SysOp could easily justify nonhuman player-characters in the game – they could assist Federation personnel as "observers", liaison officers and specialist experts on Nexus Sector matters.

Individual adventures in a military campaign are relatively easy to design; the pitfall is that it is easy for them to become repetitive. There are only so many times that the heroes can be the crack special forces team sent in ahead of the main assault before the novelty wears off for the players. SysOps should therefore ensure that they vary their scenarios. The second problem is "chain of command" – the military by its nature is hierarchical in its structure. Enlisted soldiers and junior officers have to obey the lawful orders of their superior officers. Within the team, some characters will be more senior to others; some players dislike their characters being subordinate to other player-characters. Opinionated players who happen to have officer characters can also take over the game (unintentionally or otherwise), leaving everyone else out of the spotlight. Some solutions include having heroes who aren't in the normal chain of command, such as medics, scientific or technical specialists, covert operation experts, psi adepts, etc., relaxing military discipline when the heroes aren't in the presence of superior officers, and persuading less vocal players to take the officer roles.

Soldiers and Pilot are undoubtedly the essential professions for Starsoldier and/or AstroNavy teams. Adepts, Fusions, Researchers, Scouts, Spies, and Techs are the preferred choice for mission and support specialists; they can also easily be placed outside the chain of command. Dilettantes, Entertainers and Merchants are likely to be unwilling combatants but could find themselves in the thick of it as war is no respecter of persons.

Master Character Table

The Master Character Table provides some average skill bonuses across a range of skills for characters, based on profession and level. It does not factor in the species of the character, stat bonuses, professional abilities, or Talents. SysOps, therefore, need to customize the vanilla numbers by adding in these factors, e.g. for a Human Soldier character, the SysOp must add 30 to Endurance, 10 to both Resistance skills, decide upon the human racial stat bonuses, and add in bonuses to skills for stats above 50. In this case, the SysOp should also assign +10 skill bonuses from the Skill Specialization Talent (for humans) and Combat skill level bonuses (for Soldiers). Dependent on the importance or intended threat of a NPC, the SysOp might also allocate Talents as appropriate to the NPC concept.

Campaign and Adventure Seeds

Here is a selection of campaign and scenario ideas set in the Tintamar universe:

Antimatter Asteroid: An intercepted communication from an underworld cartel suggests that a breakthrough has been made in the industrial production of antimatter – they are offering to sell antimatter weapons to the highest bidder. Corporate troubleshooters will be keen to steal the technology, FedPol Investigators will be equally desperate to locate the rogue base and shut it down, while rebels and revolutionaries will stop at nothing to secure the ultimate weapon.

Apocalypse Now: Members of an obscure cult believe that humanity can only be purified through the downfall of its technological civilization. Cult members begin a campaign of technological sabotage and mass murder. The heroes must race against time to unmask the cultists and thwart their terrible plan to destroy Ring City!

Down among the Dead: Ancient ruins have been found on a dead world and there are indications that they might be of Builder origin. The team is part of a xenoarchaeological expedition dispatched to investigate the underground complex. The researchers accidentally trigger the original internal defense systems and/or release previous invaders from an eons-long stasis. Will the ruins become the explorers' tomb too? Can the heroes prevent the alien warriors from escaping the planet?

Law and Disorder: Aliens are being systematically murdered on the streets of Earth (or another major world). Is this the work of a serial killer or a gang of human supremacists? If the perpetrators aren't brought to justice quickly, there will be serious interstellar repercussions.

Lost and Found: A hidden colony (human, Madji, etc.) has been located. The inhabitants are hostile to renewed contact with the outside universe. The colonists may be hiding a secret (indigenous sophonts whom they enslaved, anti-agathic drugs that prevent or reverse the aging process, etc.) or the system may boast a portal. If this is a human colony, the team could be tasked with persuading the settlers to join the Federation peacefully or be the forward scouts for a full-scale military invasion.

Lucy in the Sky with Diamonds: During a routine survey of a newly discovered star system, an exploration team discovers a planet or asteroid belt that is rich in mineral resources. A troubleshooter team from a rival megacorp is also in-system and they are not willing to share. Only one team will leave alive.

Message Received: When a signal is received from the depths of interstellar space, scientists are ecstatic about the possibilities of contact with a new civilization. A wave of mysterious glitches and malfunctions afflict vital software and computer-controlled devices. Then AIs start hunting virtual persons in cyberspace; in the real world, robots go berserk. Can the cybervirus be eliminated before it is too late? And what will arrive next?

Scourge of the Spaceways: Piracy is on the rise again. This time, the pirates are attacking freighters transporting high-technology items to outlying colonies. Who is leaking shipping schedules to the pirates? Where did the pirates obtain their state-of-the-art cruisers and where are they based? Are these pirates more than they seem?

War of the Worlds: Diplomatic efforts to resolve a dispute between two neighboring worlds have failed and an interplanetary war has commenced. Our heroes may be bystanders in the wrong place at the wrong time, mercenaries fighting for one of the belligerents, or part of a "peaceforcer" mission (sent by the Terran Federation or another interstellar government) to end the war by defeating both sides.

Transit Time Table - Part 1

Departure Planet	Destination									
	Arenac	Behnva	Churchill	**Coirilon Belt**	Dalaosiss	***Earth***	**Eden**	**El Dorado**	Elysium	Franklin
Arenac	0	41.99	358.3	146.01	34.19	331.79	305.89	281.02	277.26	335.81
Behnva	41.99	0	398.56	113.36	69.56	372	345.06	322.31	318.49	376.36
Churchill	358.3	398.56	0	464.83	338.21	31.12	80.31	95.44	98.28	27.78
Coirilon Belt	146.01	113.36	464.83	0	165.83	439.4	411.19	401.47	397.49	445.77
Dalaosiss	34.19	69.56	338.21	165.83	0	313.13	291.58	263.32	259.79	316.61
Earth	331.79	372	31.12	439.4	313.13	0	51	69.34	71.52	11.42
Eden	305.89	345.06	80.31	411.19	291.58	51	0	63.01	62.43	58.96
El Dorado	281.02	322.31	95.44	401.47	263.32	69.34	63.01	0	4.39	68.16
Elysium	277.26	318.49	98.28	397.49	259.79	71.52	62.43	4.39	0	70.92
Franklin	335.81	376.36	27.78	445.77	316.61	11.42	58.96	68.16	70.92	0
Freiland	368.21	408.93	22.5	477.99	346.89	48.58	98.66	102.42	105.86	40.88
Gilgamesh	320.99	361.34	41.6	430.19	302.41	11.9	45.71	57.89	59.93	16.55
Herandilon Belt	116.7	78.15	459.15	61.09	144.85	431.96	401.11	386.46	382.41	437.56
Itanoc	25.73	25.63	374.71	120.36	51.08	348.37	322	300.37	296.54	352.93
Ituvna	99.92	63.29	447.88	84.08	115.73	422.83	398.82	376.52	372.83	427.29
Ji'hadra'ji	128.81	108.05	422.1	59.91	151.12	395.57	363.69	359.24	355.1	402.61
Ji'mad'ji	154.83	115.11	494.78	50	179.88	468.22	438.22	424.97	420.94	474.07
Ji'mal'ro	152.2	112.17	502.73	89.16	170.28	477.5	452.5	431.11	427.38	482.12
Ji'zel'da	117.25	77.32	463.9	58.69	138.19	438.15	411.5	393.2	389.35	443.25
Khayyam / Saladin	367.09	407.42	19.16	474.73	348.14	35.6	77.93	97.6	100.54	31.98
Kyranoc	26.29	34.29	371.6	129.04	39.12	346.03	322.08	297.83	294.15	350.18
Lincoln	331.57	371.97	55.89	443.43	315.08	33.1	40.65	58.98	61.19	33.32
Loki	333.45	373.62	32.3	441.01	315.14	4.46	48.74	69.92	72.07	13.06
Mbingu	348.82	388.56	21.83	452.37	330.17	21.9	63.04	91.16	93.26	27.18
Meiji	322.68	363.62	42.91	436.03	302.72	26.21	63.28	53.95	57.1	19.37
New Albion	317.21	358.53	61.57	435.23	297.97	43.43	65.38	39.47	43.44	36.78
Newton / Darwin	327.92	367.86	47.44	435.18	311.03	19.92	33.57	65.71	67.26	27.33
Nexus	98.74	71.12	424.64	59.34	112.18	399.95	375.48	359.23	355.45	405.35
Pasteur / Napoleon	305.73	346.55	89.77	424.57	290.14	64.47	52.35	32.74	34.41	63.09
Poseidon / Demeter	357.21	397.19	28.49	463.2	339.43	27.87	61.91	90.94	93.33	29.49
Radisiss	48.39	52.77	387.1	158.95	53.62	361.84	339.81	308.21	304.78	364.71
Ranoc	14.18	39.32	359.52	135.72	42.85	332.82	305.83	283.77	279.92	337.29
Saroulsiss, Solunsiss	66.2	92.14	351.86	197.04	47.28	327.79	309.78	273.01	269.87	329.72
Shangri-La / Xanadu	333.59	375.06	65.87	453.82	314.7	54.45	77.19	53.59	57.76	45.7
Siva	80.45	42.37	437.85	109.4	101.97	411.76	386.09	361.09	357.38	415.77
Takhna	104.3	73.36	458.39	138.46	121.51	432.65	408.47	379.11	375.57	435.9
Talansiss	102.86	99.09	421.06	189.85	100.66	397.38	379.54	341.92	338.86	399.1
Tamazek	74.74	69.23	374.35	92.96	90.82	348.31	320.12	308.62	304.63	354.38
Valhalla	331.14	371.03	29.36	435.74	311.42	18.81	62.47	79.79	81.69	24.4
Washington	322.71	362.88	35.79	429.49	302.71	19.44	60.89	70.14	72.11	22.91

Cross-reference Departure Planet with Destination to determine distance in Light years. System names in **Bold** are described in the HARP SF rules. System names in ***Bold Italics*** contain a Portal.

Travel via LaGrange Drive is 1 Light Year per day. Travel via Portal is 1 Light Year per minute.

Transit Time Table - Part 2

Departure Planet	Destination									
	Freiland	Gilgamesh	Herandilon	Itanoc	Ituvna	Ji'hadra'ji	***Ji'mad'ji***	Ji'mal'ro	Ji'zel'da	**Khayyam/Saladin**
Arenac	368.21	320.99	116.7	25.73	99.92	128.81	154.83	152.2	117.25	367.09
Behnva	408.93	361.34	78.15	25.63	63.29	108.05	115.11	112.17	77.32	407.42
Churchill	22.5	41.6	459.15	374.71	447.88	422.1	494.78	502.73	463.9	19.16
Coirilon Belt	477.99	430.19	61.09	120.36	84.08	59.91	50	89.16	58.69	474.73
Dalaosiss	346.89	302.41	144.85	51.08	115.73	151.12	179.88	170.28	138.19	348.14
Earth	48.58	11.9	431.96	348.37	422.83	395.57	468.22	477.5	438.15	35.6
Eden	98.66	45.71	401.11	322	398.82	363.69	438.22	452.5	411.5	77.93
El Dorado	102.42	57.89	386.46	300.37	376.52	359.24	424.97	431.11	393.2	97.6
Elysium	105.86	59.93	382.41	296.54	372.83	355.1	420.94	427.38	389.35	100.54
Franklin	40.88	16.55	437.56	352.93	427.29	402.61	474.07	482.12	443.25	31.98
Freiland	0	56.57	471.63	385.33	457.85	436.78	507.43	512.93	475.08	31.02
Gilgamesh	56.57	0	421.85	337.87	412.58	386.56	458.39	467.29	428.07	46.17
Herandilon Belt	471.63	421.85	0	94.52	67.95	74.33	42.52	78.44	42.8	467.53
Itanoc	385.33	337.87	94.52	0	79.5	106.34	131.23	131.83	94.1	383.86
Ituvna	457.85	412.58	67.95	79.5	0	113.43	81.93	55.26	32.82	458.21
Ji'hadra'ji	436.78	386.56	74.33	106.34	113.43	0	90.36	136.83	94.92	430.68
Ji'mad'ji	507.43	458.39	42.52	131.23	81.93	90.36	0	64.75	49.23	503.78
Ji'mal'ro	512.93	467.29	78.44	131.83	55.26	136.83	64.75	0	45.44	512.95
Ji'zel'da	475.08	428.07	42.8	94.1	32.82	94.92	49.23	45.44	0	473.7
Khayyam / Saladin	31.02	46.17	467.53	383.86	458.21	430.68	503.78	512.95	473.7	0
Kyranoc	381.35	335.5	106.78	18.68	79.08	120.36	140.87	133.48	99.37	381.37
Lincoln	68.65	30.8	431.87	349.25	425.76	397.91	469.55	480.1	440.47	48.77
Loki	50.15	13.58	433.3	350.05	424.78	396.79	469.67	479.4	439.89	34.35
Mbingu	44.24	33.49	447.01	364.59	438.44	408.08	482.57	492.97	453.22	26.36
Meiji	49.32	20.94	426.64	340.46	414.57	394.18	463.45	469.57	431.44	49.32
New Albion	64.84	35.82	422.75	336.09	411.14	393.33	460.54	466.04	428.3	63.06
Newton / Darwin	65.41	19.99	426.39	344.5	420.18	389.65	463.15	474.52	434.46	45.05
Nexus	436.02	390.33	70.77	73.95	47.1	79.32	85.05	86.98	49.2	435.34
Pasteur / Napoleon	98.06	55.8	408.51	324.94	402.32	379.84	447.48	456.43	417.66	85.42
Poseidon / Demeter	46.55	38.24	455.82	373.62	448.6	417.98	492.14	503.08	463.19	17.87
Radisiss	394.83	350.8	126.23	56.87	88.82	158.78	159.02	136.99	114.87	396.51
Ranoc	370.17	322.19	108.47	18.14	97.31	115.41	146.82	149.28	111.54	368.27
Saroulsiss, Solunsiss	357.93	316.67	169.35	85.01	130.48	190.77	202.89	180.41	157.94	361.67
Shangri-La / Xanadu	64.88	50.25	439.82	353.08	428.49	411.7	478.12	483.29	445.83	62.57
Siva	447.45	401.04	70.57	66.14	38.54	124.54	97.84	77.13	56.18	447.07
Takhna	466.71	421.66	98.32	96.28	61.6	159.48	118.7	81.88	80.59	467.57
Talansiss	426.5	386.26	158.01	108.86	107.62	202.79	182.71	142.23	137.26	431.05
Tamazek	387.28	338.77	91.18	54.95	96.3	62.84	121.24	141.6	97.21	383.81
Valhalla	47.3	24.87	430.71	346.97	420.03	392.93	466.06	474.75	435.58	42.23
Washington	50.27	19.92	423.56	338.97	412.14	387.22	459.19	466.97	428.13	48.18

Cross-reference Departure Planet with Destination to determine distance in Light years. System names in **Bold** are described in the HARP SF rules. System names in ***Bold Italics*** contain a Portal.

Travel via LaGrange Drive is 1 Light Year per day. Travel via Portal is 1 Light Year per minute.

Transit Time Table - Part 3

Departure Planet	Destination								
	Kyranoc	Lincoln	Loki	Mbingu	**Meiji**	New Albion	***Newton/Darwin***	***Nexus***	**Pasteur/Napoleon**
Arenac	26.29	331.57	333.45	348.82	322.68	317.21	327.92	98.74	305.73
Behnva	34.29	371.97	373.62	388.56	363.62	358.53	367.86	71.12	346.55
Churchill	371.6	55.89	32.3	21.83	42.91	61.57	47.44	424.64	89.77
Coirilon Belt	129.04	443.43	441.01	452.37	436.03	435.23	435.18	59.34	424.57
Dalaosiss	39.12	315.08	315.14	330.17	302.72	297.97	311.03	112.18	290.14
Earth	346.03	33.1	4.46	21.9	26.21	43.43	19.92	399.95	64.47
Eden	322.08	40.65	48.74	63.04	63.28	65.38	33.57	375.48	52.35
El Dorado	297.83	58.98	69.92	91.16	53.95	39.47	65.71	359.23	32.74
Elysium	294.15	61.19	72.07	93.26	57.1	43.44	67.26	355.45	34.41
Franklin	350.18	33.32	13.06	27.18	19.37	36.78	27.33	405.35	63.09
Freiland	381.35	68.65	50.15	44.24	49.32	64.84	65.41	436.02	98.06
Gilgamesh	335.5	30.8	13.58	33.49	20.94	35.82	19.99	390.33	55.8
Herandilon Belt	106.78	431.87	433.3	447.01	426.64	422.75	426.39	70.77	408.51
Itanoc	18.68	349.25	350.05	364.59	340.46	336.09	344.5	73.95	324.94
Ituvna	79.08	425.76	424.78	438.44	414.57	411.14	420.18	47.1	402.32
Ji'hadra'ji	120.36	397.91	396.79	408.08	394.18	393.33	389.65	79.32	379.84
Ji'mad'ji	140.87	469.55	469.67	482.57	463.45	460.54	463.15	85.05	447.48
Ji'mal'ro	133.48	480.1	479.4	492.97	469.57	466.04	474.52	86.98	456.43
Ji'zel'da	99.37	440.47	439.89	453.22	431.44	428.3	434.46	49.2	417.66
Khayyam / Saladin	381.37	48.77	34.35	26.36	49.32	63.06	45.05	435.34	85.42
Kyranoc	0	347.9	347.91	362.41	337.11	332.89	343.15	76.72	323.62
Lincoln	347.9	0	29.82	47.62	39.55	38.69	21.22	404.73	39.49
Loki	347.91	29.82	0	21.58	28.75	44.27	16.45	401.88	62.99
Mbingu	362.41	47.62	21.58	0	45.34	63.63	32.83	414.03	83.93
Meiji	337.11	39.55	28.75	45.34	0	22.23	38.36	394.07	56.19
New Albion	332.89	38.69	44.27	63.63	22.23	0	47.43	392.67	39.76
Newton / Darwin	343.15	21.22	16.45	32.83	38.36	47.43	0	397.24	54.46
Nexus	76.72	404.73	401.88	414.03	394.07	392.67	397.24	0	384.56
Pasteur / Napoleon	323.62	39.49	62.99	83.93	56.19	39.76	54.46	384.56	0
Poseidon / Demeter	371.85	38.02	24.89	19.42	48.51	61.51	30.75	425.12	77.07
Radisiss	45.66	361.96	363.77	379.7	350.06	343.65	359.45	107.64	334.48
Ranoc	27.09	332.88	334.41	349.35	324.76	319.9	328.59	90.88	307.98
Saroulsiss, Solunsiss	70.86	328.52	329.94	346.21	314.05	307.2	326.76	141.77	300.66
Shangri-La / Xanadu	349.92	42.27	54.22	71.18	37.13	21.1	57.11	411.09	43.71
Siva	67.61	412	413.51	428.55	402.47	397.11	408.18	73.65	385.94
Takhna	93.96	432.18	434.47	450.25	421.63	415.15	429.54	105.21	404.41
Talansiss	96.27	397.98	399.58	415.84	383.13	375.95	396.54	139.97	369.39
Tamazek	66.13	351.44	349.88	362.16	344.25	342.76	343.92	62.39	331.82
Valhalla	344.13	51.79	22.43	22.1	34.41	55.63	35.91	396.07	80.64
Washington	335.89	49.93	23.79	31.46	26.25	47.38	36.29	389.01	74.07

Cross-reference Departure Planet with Destination to determine distance in Light years. System names in **Bold** are described in the HARP SF rules. System names in ***Bold Italics*** contain a Portal.

Travel via LaGrange Drive is 1 Light Year per day. Travel via Portal is 1 Light Year per minute.

Transit Time Table - Part 4

Departure Planet	Destination										
	Poseidon/ Demeter	Radisiss	***Ranoc***	**Saroulsiss, Solunsiss**	**Shangri-La/ Xanadu**	*Siva*	Takhna	Talansiss	***Tamazek***	***Valhalla***	Washington
Arenac	357.21	48.39	14.18	66.2	333.59	80.45	104.3	102.86	74.74	331.14	322.71
Behnva	397.19	52.77	39.32	92.14	375.06	42.37	73.36	99.09	69.23	371.03	362.88
Churchill	28.49	387.1	359.52	351.86	65.87	437.85	458.39	421.06	374.35	29.36	35.79
Coirilon Belt	463.2	158.95	135.72	197.04	453.82	109.4	138.46	189.85	92.96	435.74	429.49
Dalaosiss	339.43	53.62	42.85	47.28	314.7	101.97	121.51	100.66	90.82	311.42	302.71
Earth	27.87	361.84	332.82	327.79	54.45	411.76	432.65	397.38	348.31	18.81	19.44
Eden	61.91	339.81	305.83	309.78	77.19	386.09	408.47	379.54	320.12	62.47	60.89
El Dorado	90.94	308.21	283.77	273.01	53.59	361.09	379.11	341.92	308.62	79.79	70.14
Elysium	93.33	304.78	279.92	269.87	57.76	357.38	375.57	338.86	304.63	81.69	72.11
Franklin	29.49	364.71	337.29	329.72	45.7	415.77	435.9	399.1	354.38	24.4	22.91
Freiland	46.55	394.83	370.17	357.93	64.88	447.45	466.71	426.5	387.28	47.3	50.27
Gilgamesh	38.24	350.8	322.19	316.67	50.25	401.04	421.66	386.26	338.77	24.87	19.92
Herandilon Belt	455.82	126.23	108.47	169.35	439.82	70.57	98.32	158.01	91.18	430.71	423.56
Itanoc	373.62	56.87	18.14	85.01	353.08	66.14	96.28	108.86	54.95	346.97	338.97
Ituvna	448.6	88.82	97.31	130.48	428.49	38.54	61.6	107.62	96.3	420.03	412.14
Ji'hadra'ji	417.98	158.78	115.41	190.77	411.7	124.54	159.48	202.79	62.84	392.93	387.22
Ji'mad'ji	492.14	159.02	146.82	202.89	478.12	97.84	118.7	182.71	121.24	466.06	459.19
Ji'mal'ro	503.08	136.99	149.28	180.41	483.29	77.13	81.88	142.23	141.6	474.75	466.97
Ji'zel'da	463.19	114.87	111.54	157.94	445.83	56.18	80.59	137.26	97.21	435.58	428.13
Khayyam / Saladin	17.87	396.51	368.27	361.67	62.57	447.07	467.57	431.05	383.81	42.23	48.18
Kyranoc	371.85	45.66	27.09	70.86	349.92	67.61	93.96	96.27	66.13	344.13	335.89
Lincoln	38.02	361.96	332.88	328.52	42.27	412	432.18	397.98	351.44	51.79	49.93
Loki	24.89	363.77	334.41	329.94	54.22	413.51	434.47	399.58	349.88	22.43	23.79
Mbingu	19.42	379.7	349.35	346.21	71.18	428.55	450.25	415.84	362.16	22.1	31.46
Meiji	48.51	350.06	324.76	314.05	37.13	402.47	421.63	383.13	344.25	34.41	26.25
New Albion	61.51	343.65	319.9	307.2	21.1	397.11	415.15	375.95	342.76	55.63	47.38
Newton / Darwin	30.75	359.45	328.59	326.76	57.11	408.18	429.54	396.54	343.92	35.91	36.29
Nexus	425.12	107.64	90.88	141.77	411.09	73.65	105.21	139.97	62.39	396.07	389.01
Pasteur / Napoleon	77.07	334.48	307.98	300.66	43.71	385.94	404.41	369.39	331.82	80.64	74.07
Poseidon / Demeter	0	388.1	357.93	354.56	63.93	437.33	458.58	424.22	372.38	38.23	44.58
Radisiss	388.1	0	59.69	46.3	359.18	64.64	72.57	54.53	110.41	361.02	351.91
Ranoc	357.93	59.69	0	79.67	336.64	80.83	108.47	114	61.39	331.95	323.85
Saroulsiss, Solunsiss	354.56	46.3	79.67	0	322.23	110.61	115.87	69.9	133.95	326.93	317.32
Shangri-La / Xanadu	63.93	359.18	336.64	322.23	0	413.39	430.59	390.47	361.14	68.62	62.53
Siva	437.33	64.64	80.83	110.61	413.39	0	36.25	87.52	100.73	410.57	402.2
Takhna	458.58	72.57	108.47	115.87	430.59	36.25	0	71.09	136.33	431.9	423.03
Talansiss	424.22	54.53	114	69.9	390.47	87.52	71.09	0	159.39	396.36	386.7
Tamazek	372.38	110.41	61.39	133.95	361.14	100.73	136.33	159.39	0	345.47	338.83
Valhalla	38.23	361.02	331.95	326.93	68.62	410.57	431.9	396.36	345.47	0	11.22
Washington	44.58	351.91	323.85	317.32	62.53	402.2	423.03	386.7	338.83	11.22	0

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