

W2 FOR THE STARS WITHOUT NUMBER ROLE-PLAYING GAME

RELICS OF THE LOST

BY KEVIN CRAWFORD



FILL THE FORGOTTEN CITIES AND TIME-LOST ORBITALS OF YOUR CAMPAIGN WITH THE PLUNDER OF AN ERA LONG DEAD. NEW WEAPONS, ARMOR, ROBOTS, DEVICES, AND CHEMICAL STIMS ARE PROVIDED FOR YOUR STARS WITHOUT NUMBER CAMPAIGN, WITH THESE ANCIENT TREASURES READILY COMPATIBLE WITH OTHER OLD-SCHOOL GAMES.

SINE NOMINE
PUBLISHING

A SOURCEBOOK OF LOST TECHNOLOGY

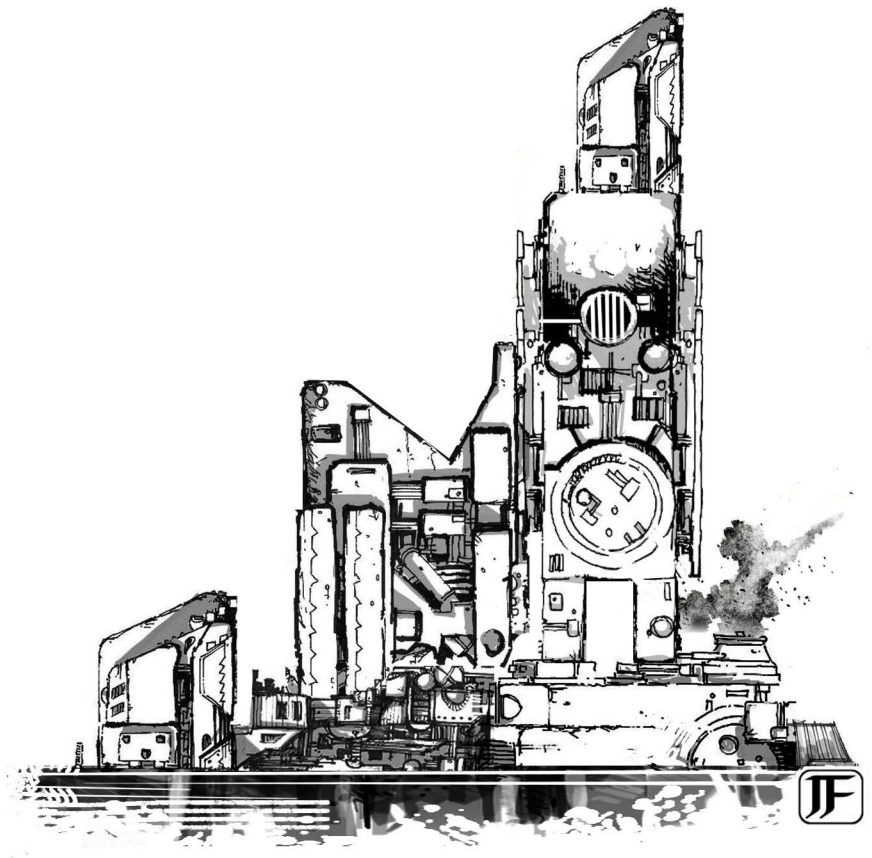
RELIQS OF THE LOST

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RELICS OF THE LOST

ANTIQUITIES OF A MORE GLORIOUS AGE

In *Relics of the Lost* you will find a broad selection of weapons, armor, stims, robots and pretech domestic devices to fill out the halls of your abandoned pre-Scream ruins and lost Mandate orbitals. Not all of these devices are equally useful, and some are directly hazardous to the unwary explorer, but all of them have some quality to attract the curious adventurer.

These relics are fully compatible with *Other Dust*, and indeed could even be used with *Spears of the Dawn* without changing any of the listed statistics. Readers with a fondness for other old-school gaming systems will find them cross-compatible with most of them, and a source of exotic “foreign magic” for those adventurers caught in some science-fantasy circumstance.

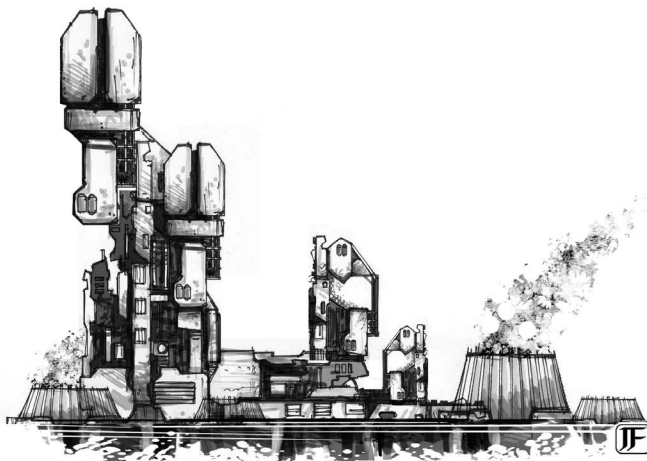
STOCKING YOUR RUINS

You should not feel obliged to cram every room and cranny of a Mandate facility with functioning tech. Much of the technology that reached the frontier was intentionally designed to break down eventually so as to prevent the development of an industrial base autonomous from the nanofacs of the core worlds.

Not every device was planned for obsolescence, however, and diligent scavengers can sometimes find trifles and baubles that have escaped the tooth of time. More rarely, they can find equipment that would have been valuable even to its original owners.

As a GM, a light sprinkling of these devices through a ruin is sufficient, along with a light leavening of plunder that is wholly worthless or actively dangerous to those who meddle with it. You should not be overly concerned about giving the PCs “too much loot”. Even if the PCs do manage to carry away a trove of ancient tech, they’ll have a devil of a time selling it.

The most they’re likely to be able to do is give it to allies, use it up in their own adventures, or scrap it to get spare parts for their more valuable equipment. Relic equipment is meant to be used, either as an excellent bribe for a potential friend or as a trump card against the party’s own enemies. Don’t try to protect the PCs’ gear. After all, if they lose it they know exactly how to get more.



BUYING AND SELLING PRETECH

Even the most trivial pretech bauble contains potentially priceless technology, if only a researcher is able to suss out the principles that power the device. The vast majority of such efforts prove useless, but that’s just reason to go snatch the next trifle in hopes it might inch progress forward. Those technologists who are actually able to unravel some fragment of pretech are swift to rework it into more practical forms, and the marvels this knowledge produces leave every researcher in human space ravenous for further samples. The smallest thing might turn out to be the key.

As a consequence, trade in pretech is extremely difficult. Planetary governments commonly confiscate it as a matter of course, both for the sake of state security and for the hope of some new revelation. Occasionally they pay some nominal sum, perhaps one or two thousand for interesting baubles, up to 5,000 for functioning weapons and advanced armor. Unsurprisingly, most freebooters are unenthusiastic about handing over the fruits of their adventures.

Private sales of pretech are normally out of the question. Particularly flexible governments might allow private ownership of pretech not determined to be “sensitive” by the state, but even they normally require any sales to be to a government buyer at the trivial prices given above. Those scavengers who want to get something closer to the market value of their baubles will need to set up a private sale through underground channels.

If a party manages to use these illicit connections to find a buyer or seller, and their counterparty isn’t simply using the meet as a chance to shoot them and loot their corpses, then players might sell their pretech artifacts for ten times the sum the government offers- 10,000 for a pretech entertainment device, for example, or 50,000 for a functional flop rifle. The market among individual buyers is limited, however, and most will only be able to afford those pieces most interesting to them, rather than having the spare credits to take half an orbital habitat’s fittings off the party’s hands.

From the GM’s perspective, buying or selling pretech is something that’s usually going to require an adventure to find the intermediaries, get a buyer, and make the trade. PCs might be able to arrange for a more reliable sale outlet outside the easy reach of a planetary power, but such arrangements are fragile and prone to attracting predators and cheats. Basic consumable pretech such as stims might be more easily accessible at the GM’s discretion, but even the least useful stim likely runs at least four or five hundred credits on the black market.

From the players’ perspective, pretech is usually something they find and use. It’s not something that they can count on selling or buying, unless they make the adventurous effort necessary to find a supplier. The exact use of a given pre-Scream bauble may not lend itself to bloody feats of adventure, but PCs tend to show unusual creativity about turning a hyper-tech concert recording into an implement of mass destruction.

TOOLS OF ILL OMEN

WEAPONS AND ARMOR OF THE LATTER AGE

The Second Wave of human colonization was not a peaceful one. Beneath the skies of Terra there seethed a quiet struggle between the Mandate's calcified bureaucracy and the myriad rebel bands and guerrilla fighters that struggled for something new. Around farther stars there were battles over land, resources, or bloody ideals. Some merely scarred their combatants, while others wiped their civilizations from existence. Wherever humanity could be found, there too was war.

And there, too, was the violence of human ingenuity. Some of these tools were the products of local tech and the inspiration of a native genius, while others were relics of Mandate pretech that were able to survive centuries of disuse or abusive neglect. The pretech devices are largely irreplaceable in the current post-Silence civilization, but the TL4 weaponry might well be replicable.

Some weapons on the list have comparatively low tech level, and can be built on any world with a passable gunpowder analog.

Weapons with an encumbrance value of 2 require both hands to employ effectively, while those with a value of 3 or more may require a firing rest or other prepared position for effective use.

Most listed weapons can fire standard ammunition or use normal Type A power cells. If special ammunition is required it is noted and priced in the weapon description. Prices assume that the PCs are buying the item where it is legally available; purchasing weaponry and ammunition on the black market can easily cost ten times as much, assuming it can be had at all. Pretech gear is normally unavailable at any price without special efforts to find and ingratiate the characters with the very few dealers in such tech.

AUTOMATIC MATTER FORGE

A weapon of deceptively simple appearance, the AMF looks much like a standard heavy machine gun, requiring at least a bipod mount to be fired effectively. While the AMF can fire standard ammunition, a feed hopper on the weapon can receive any solid or liquid matter and transmute it into useful ammunition via its integral nanite matter forges. A kilogram of feedstock can be converted into two rounds of ammunition and a torrent of excess exhaust nitrogen.

A crewmember who does nothing but feed the hopper can keep the AMF firing indefinitely, without danger of jamming or overheating. Regrettably, the shells created by the AMF are too fragile to last long outside the weapon, but so long as the operator has mass that can fit into the half-meter-wide hopper they will not run out of ammunition.

Like other heavy machine guns, the AMF can fire to suppress. Double the usual ammunition is fired in one round, and every target in front of the weapon that is not under hard cover is automatically hit for half normal damage. A successful Evasion or Luck saving throw eliminates this damage.

BIOCATALYTIC INDUCTION GUN

A horrific weapon that appears to have been developed as a "conventional" offshoot of the cancer gun research of the later Second Wave, the BIG fires bolts of autogenerated carrier nanites, fueling their construction with a Type A power cell. It uses the better of the wielder's Energy or Projectile combat skills.

An organic creature killed by a BIG does not die cleanly, however, but experiences a catastrophic rebellion of its cellular structure. On a successful Tech saving throw, the creature simply dies. If the save is failed, however, the wretched victim rapidly deliquesces into a writhing, tentacular pool three meters in diameter for an average human-sized victim. This pool of living meat claws at any creature that enters its remains, inflicting 1d6 damage on all targets not in hard armors. A Tech save averts damage. The teratic monstrosity dies five rounds after it forms. It is impossible to revive a victim of a BIG with lazarus patches or biopsionic powers.

DIMENSIONAL BLADE

Modern researchers admit a certain puzzlement over the original purposes of a dimensional blade, as such hyper-advanced spatial technology would seem to be overkill for creating a personal melee weapon. Some hypothesize that the blades were intended as badges of office for some martial order or that they were special tools against some long-forgotten alien threat.

Dimensional blades appear as a conventional one-handed sword, axe, or other edged implement, albeit beautiful in its execution. The blade is marked with a number of odd symbols and signs, none of which admit of any obvious meaning. Dimensional blades require no power source and appear impervious to any damage short of demolitions-grade explosives. Dimensional blades ignore all obstructions, selectively phasing through solid barriers to strike targets on the other side of walls, armor, or other impediments, ignoring all armor for purposes of hit rolls. The phasing ability is linked to the unconscious direction of the wielder, and so it will not pass through scabbards or other convenient solids. If the wielder does not move on their turn and does nothing but concentrate on a distant foe, the blade can even slash at visible targets up to thirty meters away from the wielder.

ENERGY VORTEX SUMP

These grenade-like devices drain nearby energy cells, siphoning their contents uselessly away into the metadimensional void. They can be applied directly to vehicles and other large machines or thrown as a grenade, with AC9 to hit a target and a 1d10 scatter on a miss. If applied to a vehicle or machine the sump will instantly drain a Type B power cell. If thrown as a grenade, it will neutralize 1d8 Type A power cells within three meters, the nearest being drained first. Vehicle pilots or affected cell users may make a Tech saving throw to escape the effects of the sump.

WEAPON	DAMAGE	RANGE	MAG	ATTR.	SKILL	TL	ENC	COST
<i>Automatic Matter Forge</i>	3d6 #	500/2,000	20	Dex	Gunnery	5	3	N/A
<i>Biocatalytic Induction Gun</i>	2d8+2	50/100	6	Dex	Proj./Energy	5	2	N/A
<i>Dimensional Blade</i>	2d6+2	30	N/A	Str/Dex	Primitive	5	1	N/A
<i>Energy Vortex Sump</i>	N/A	10/30	N/A	N/A	Primitive	5	1	N/A
<i>Firefall Launcher</i>	3d6	500/2,000	1	Dex	Gunnery	4	2	8,000
<i>Flop Rifle</i>	2d6	100/300	6	Dex	Energy	5	2	N/A
<i>Gravitic Lockdown Projector</i>	2d6	200/600	5	Dex	Energy	5	2	N/A
<i>Grenade Launcher</i>	Special	100/300	5	Dex	Proj./Gunnery	3	2	3,000
<i>Hate Bomb</i>	N/A	10/30	N/A	Dex	Primitive	5	1	N/A
<i>Hotfoot Mine</i>	2d6	N/A	N/A	N/A	-	4	1	250
<i>Hydra Grenade</i>	1d8/rnd	10/30	N/A	Dex	Primitive	5	1	N/A
<i>Jump Gun</i>	2d6+2 *	100/300	12	Dex	Projectile	5	2	N/A
<i>Micro Anti-Vehicle Laser</i>	1d6+1	100/300	6	Dex	Ener./Gunnery	5	1	N/A
<i>Mortar</i>	3d6	1,000/2,000	1	Int/Wis	Gunnery	2	10	2,000
<i>Phased Disruption Lance</i>	2d12	500/1,000	5	Dex	Gunnery	5	3	N/A
<i>Polymorphic Sheath Weapon</i>	2d6	3	N/A	Str/Dex	Primitive	5	1	N/A
<i>Portable Autonomic Beam Emitter</i>	1d10	50/100	N/A	N/A	-	5	1	N/A
<i>Revenant Knife</i>	1d12	10	N/A	Str/Dex	Primitive	5	1	N/A
<i>Rifcutter</i>	N/A	50/100	Special	Dex	Energy	5	2	N/A
<i>Seeker Drone Launcher</i>	3d6	1,000/2,000	1	Int/Dex	Gunnery	4/5	2	N/A
<i>Shucker Prod</i>	1d12	N/A	N/A	Str/Dex	Primitive	3	1	50
<i>Sinkhole Charge</i>	N/A	10/30	N/A	Dex	Primitive	5	1	N/A
<i>Symbiote Gun</i>	2d6 *	100/300	25	Dex	Energy	5	1	N/A
<i>Temporal Explosives</i>	3d12	10/30	N/A	N/A	-	5	1	N/A
<i>Thermal Razor</i>	2d8	N/A	N/A	Str/Dex	Primitive	5	2	N/A

can be fired to suppress, * can be fired in burst mode for +2 damage/hit and 3 rounds of ammo.

FIREFALL LAUNCHER

This heavy gun is man-portable, if barely, though it can be fired no more than once every two rounds unless steadied by a bipod or similar rest. If securely placed, reloading the launcher can be performed as part of an attack. Each shell counts as its own encumbrance item and costs 100 credits if purchased legally, or ten times as much on the black market.

The firefall launcher is equipped with advanced targeting tools that allow the gunner to trigger the shell's explosion at a particular point in the air, raining a cascade of burning chemicals on the targets below. If fired in this way the gunner makes a roll to hit AC9, with a miss meaning the target point was off by 1d10 meters in a random direction. The bursting shell will inflict the listed damage on all targets below in a 5-meter radius, save for those sheltered under hard cover. Those affected can make a Luck save to take only half damage. The gun can also be used as a direct fire weapon to shoot directly at a target with the same AC9 hit roll.

FLOP RIFLE

A favored police and personal arm on some worlds, the flop rifle uses phased energy charges to briefly overwhelm the nervous system of a living target, reducing it to boneless helplessness. Each hit inflicts damage as normal, but a creature reduced to 0 hit points by a flop rifle is helpless rather than dead. Hit points lost to a flop rifle return in thirty minutes. Psychics can continue to use their powers even at 0 hit points, however, as can others with thought-activated abilities or equipment.

While useful against most assailants, targets in hardshell armor are immune to flop rifle charges, as are creatures substantially larger than humans along with those with at least two System Strain points worth of cybernetic implants. Someone with Tech/Medical-1 skill or better can also formulate a combination of standard stimulants that will render the user immune to flop rifles for up to an hour with no significant side effects.

The smaller "flop pistol" has half the range and does 1d8 damage but requires only one hand to fire and has the same magazine size. Both pistols and rifles use Type A power cells.

GRAVITIC LOCKDOWN PROJECTOR

The rifle-sized “gulp gun” increases certain friction coefficients and disrupts standard gravitic engines, causing vehicles and other complex machinery to grind slowly to a halt. Vehicles and other equipment with large moving parts which are hit by the gun immediately take the listed damage to their hit points, ignoring armor. This “damage” dissipates after 1d6+1 minutes, but a vehicle or machine reduced to 0 hit points by the gun becomes inoperable and will stop or fall accordingly. On worlds where GLPs exist, military vehicles and other important machinery are shielded against their effects by relatively simple protective measures, but planets where they are unknown may not have such defenses. A GLP cannot affect a vehicle or machine larger than a standard gravcar or delivery truck.

GRENADE LAUNCHER

When a good throwing arm isn't sufficient, a grenade launcher can be used with either the Combat/Projectile or Combat/Gunnery skill. The grenades used aren't conventional throwing grenades, but special launched munitions that come in 5-grenade magazines that count as one encumbrance item and cost 100 credits. Firing a grenade launcher requires a hit roll against AC9; on a miss, the grenade misses by 1d10 meters in a random direction. The small grenades fired by the launcher do effective damage in a 5-meter radius. Most grenades will not arm if they hit a target closer than 50 meters away, though many adventurers cheerfully disable this safety feature.

Fragmentation grenades inflict 2d6 damage on all targets, with a Luck save for half damage. Damage is reduced by 1 point for each point of AC below 6. Phosphorus grenades inflict 1d6 damage each round for three rounds, with a Luck saving throw to escape injury from the clinging flames.

HATE BOMB

These small cylinders are loaded with extremely powerful neurochemicals. They can be thrown as a grenade, with an AC9 hit roll to land on target and a 1d10 meter scatter on a miss. When they land, they burst to affect all targets within 10 meters. Victims in range can make a Tech saving throw to resist the gas, and those in sealed vacc suits or other contained environments are not affected. Aliens and non-terran animals are also unaffected.

Victims affected by a hate bomb are seized by a sudden, blinding fury directed at all living creatures around them. They will immediately attack the closest available target, friend or foe. The most immediate means of attack will be used, whether bare-handed or with the weapon they are presently holding. This rage lasts for 1d4 rounds for all affected. Those affected by a hate bomb are immune to further uses for 24 hours afterwards as the necessary brain chemicals are depleted by the effects of the bomb.

HOTFOOT MINE

These brutal thermal weapons appear as innocuous discs slightly larger than an outspread hand. They are intended as antipersonnel measures, with the goal being the injury and crippling of enemy forces rather than their outright death, as corpses make substantially fewer logistical demands on their comrades. When buried and armed they wait patiently for a warm-blooded creature at least 40 kilograms in weight to pass over them, triggering on any intruders who step within one meter of their location.

On activation, they pulse a brief plasma wave of one-meter radius as they burn out. The wave inflicts the listed damage but also tends to self-cauterize wounds. A creature brought to 0 hit points by a hotfoot mine will not die but will lose one or both legs without TL4 medical treatment. Removing the mines requires painstaking probing but is relatively safe provided probes of more than one meter length are used and the terrain is carefully combed. Most mines are built of scan-resistant polycomposite, defeating ordinary non-physical detection methods. Hotfoot mines will remain active for centuries after emplacement.

HYDRA GRENADE

A warm, slightly yielding sphere the size of a softball, a hydra grenade has an organic pull-tab protruding from its top. When pulled, the grenade becomes live and will burst three seconds later. It may be thrown as a standard grenade, with an AC9 hit to target the desired location and a 1d10 meter scatter on a miss.

On “detonation”, dozens of rubbery, fanged tendrils explode from the sphere and voraciously seek all warm-blooded life forms within a three-meter radius. For the five-round duration of the grenade's lifespan this area is alive with writhing, razor-sharp tentacles that inflict 1d8 damage per round on every warm-blooded creature within the affected area, though a successful Tech save can negate the damage. The tendrils can snake around obstacles and through small holes to seek prey. If the grenade's core is killed the tendrils will die immediately, but targeting the core through the spray of tentacles is very difficult- it's effectively AC3 to hit accurately, though any damage will kill it.

JUMP GUN

These weapons were favored by many worlds for use in the vicious house-to-house fighting that characterizes urban combat. An integral spatial distortion field allows the wielder to fire conventional projectile ammunition through a microgate that allows for arbitrary angles and origin points. When the wielder shoots the gun they can choose for the shot to originate from any point within thirty meters in front of them and fire at any angle desired. They can shoot around corners or fire downward at entrenched targets. Origins and angles can be changed as part of each firing action.

Jumped shots are rolled as normal attacks but have an automatic 50% chance of missing unless the shooter can see the target. Jump guns are designed to use the kinetic recoil of conventional ammunition to power the microgate generator, and require no external power source.

MICRO ANTI-VEHICLE LASER

This pistol-sized weapon emits a very small-diameter, coherent beam of light that does relatively little damage to organic targets. The laser is tuned to penetrate most conventional forms of vehicle armor and other solid obstructions, however, and does twice the listed damage against inorganic targets. The weapon is treated as a Gunnery weapon for purposes of defeating vehicle or mech armor. The operator may use either Energy or Gunnery combat skills when firing the device, and may claim the +1 hit bonus for firing an energy weapon. If necessary, the MAVL can be used as a laser cutter to carve a human-sized hole in up to a meter of conventional building material, though such use drains its Type A power cell.

MORTAR

The old ways are the best ways at times- especially when a world lacks the technology for more sophisticated indirect-fire weapons. Ordinary tube mortars can be fabricated by any TL2 world with an adequate gunpowder analog available. They require a two-man team and 1d6+2 rounds for setup, minus the gunner's Combat/Gunnery skill, though a single gunner can set up the device in twice the time. The various components of the mortar count as ten encumbrance items, and each mortar round is its own item of encumbrance. Mortar rounds cost 50 credits apiece if bought legally, with black market prices easily ten times as high.

Mortars are imprecise weapons. Hitting an exact location within range requires a hit against AC0. On a miss, the round goes 1d10 x 10 meters off-target in a random direction. Each round firing at the same target point grants a cumulative +1 to hit provided the team can spot the misses and adjust accordingly. Mortar rounds inflict explosive damage on everyone within 25 meters of the hit unless they're under suitable cover. Victims can make a Luck saving throw to take only half damage. Mortars can be effectively fired only once every three rounds.

PHASED DISRUPTION LANCE

This heavy gunnery weapon requires at least a tripod mount for operation and a Type B power cell to fuel it. When activated, a coruscating beam of metadimensional energy gouges a deep divot in any solid objects between the lance and its maximum range. Man-sized targets caught in the lance are knocked away by it before it can do much harm, and they suffer only 1d8 damage from the impact. Vehicles, fortifications, and other large targets take the full damage if hit. The lance is most dangerous when it can be fixed on a specific point. It can carve up fortifications like a giant sculptor's chisel, and if the lance hits a stationary object for more than one round it does an additional 1d12 damage to it on each successive consecutive round of firing.

POLYMORPHIC SHEATH WEAPON

These implements most often appear as single glossy black gloves that automatically fit snugly around the wearer's hand and forearm, including those sheathed by a vacc suit or other full-body armor. The nanocomposite from which the sheath is created responds to the wearer's will, and can instantly transform into a bladed weapon with the combat qualities listed in the chart and a +2 bonus to hit rolls. The sheath can transform into other shapes as well, increasing the wearer's reach by up to three meters for purposes of grasping or manipulating distant objects. The sheath is quite tough; attempts to cut or burn its extensions hit automatical-



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ly but must do 8 points of damage in a single blow to disrupt the extension. A "wounded" sheath is inoperable for 24 hours until it has had time to regenerate the damage.

PORTABLE AUTONOMIC BEAM EMITTER

This softball-sized device requires a Type A cell to operate, and functions for up to 10 rounds on a single cell. To trigger it, the wielder spends one action designating up to a dozen visible targets before releasing the emitter, which promptly unfolds into a small levitating beam platform. The platform fires as a laser rifle at the targets on its owner's turn each round, shooting at each with a +5 hit bonus until all enemies are dead or have escaped its field of view. By default, the PABE remains within one meter of its owner while shooting, though it can be ordered to "stay", "come", "stop", or target new enemies. Most such commands can be delivered while the owner performs other actions, but the PABE responds only to its activator. Enemies trying to destroy the PABE must hit an AC3 target and inflict 6 points of damage to ruin it. The PABE can fly up to 30 meters per round to keep up with its owner.

REVENANT KNIFE

These sinister pretech artifacts may have originally served some religious purpose, but they are more lately used as tools of gruesome murder. While primarily a melee weapon, they can be thrown at targets up to 10 meters away.

If a revenant knife kills a target or is thrust into a corpse no more than one round dead, it will force a kind of temporary half-life into the victim. So long as the knife remains embedded in the subject they will obey the last person to touch the blade with as much intelligence and skill as they possessed while alive. The knife can maintain reasoning processes and movement but does little to support memories; the victim will obey intelligently but can rarely speak of what they know. The revenant knife can keep a victim alive for up to 24 hours before exhausting its energy and requiring a full 24-hour recovery before it can animate a new subject. If the knife is removed or the corpse takes more than 12 points of damage, the victim falls dead once more. Victims of revivification cannot be restored by conventional medical tech or psionics, as the revenant process is destructive to the corpse's neural system.

RIFTCUTTER

Originally intended for the quick creation of battlefield barriers, the riftcutter emits a beam of catalyzing force that briefly triggers a metadimensional energy rift across nearby terrain. The opera-

tor aims at a particular patch of ground, drags the beam over the surface, and a three-meter high wall of coruscating energy erupts from the earth along the beam path. The wall always streams along the direction of local gravity regardless of the surface it's triggered against. Thus, it always remains vertically perpendicular to the ground. Rifts last for five minutes before guttering away, leaving only a charred, vitreous streak on the originating surface.

The energy emission is opaque, and any ranged attacks through it will automatically miss unless the target's location is known to the shooter- and even then, there's a 50% of automatic failure. Attempts to physically cross the rift inflict 3d6 damage, with a Tech saving throw for half. The rift forms slowly enough that a creature can't effectively be caught in it unless it is trapped or immobilized. A single Type A energy cell provides enough power to create 10 meters of rift. An operator can create one rift per action, however long it might be.

SEEKER DRONE LAUNCHER

These weapons are relatively rare, as the quantum scramblers of the modern battlefield disrupt most targeting system and leave guided missiles blind. Still, the TL4 version of the seeker is occasionally useful on more primitive worlds, and the rare TL5 pretech relics are immune to TL4 jammers. The price given is for the TL4 model, with individual seeker drones costing 500 credits. The TL5 launcher is essentially priceless, though it can use TL4 drones.

When fired, the drone is rapidly boosted to the target point chosen by the operator, where it engages a gravitic engine that allows the operator to precisely maneuver it via the launcher. The drone is no larger than a human forearm and can move up to 30 meters in one round. The gravitic engine has a limited operating life and can maintain flight for only three rounds. Extremely fast-thinking targets may be able to shoot it down before it explodes, provided they can hit an AC0 target for at least 6 points of damage. If not shot down or physically impeded from reaching its chosen target, it will explode and inflict the listed damage to all targets within 15 meters. The drone can be blocked, but it is all but impossible to "miss" with it so long as the launcher remains unjammed. The drone transmits visuals back to the launcher, allowing the operator to pilot it to concealed or entrenched targets.

SHUCKER PROD

On more than one world the locals have found themselves forced to face military forces equipped with armor far in advance of the available native weapon technology. The "shucker prod" is one of the more common low-tech responses. The short staves are tipped with a crude thermal charge sufficient to melt through assault armor, though at some risk to the wielder.

Shucker prods ignore all armor when making attack rolls, allowing only Dexterity modifiers to the target's armor class. On a hit, the thermal charge inflicts 1d8 damage- but if an 8 is rolled, the splashback of the thermal material inflicts 1d8 damage on the wielder as well. Shucker prods are useful only as clubs after their first successful hit.

SINKHOLE CHARGE

These pretech grenades do not inflict damage, but instead turn their affected area into a zone of kinetic negation, making it impossible for objects, projectiles or persons to cross the grenade's

area of effect. Energy discharges may cross the zone without hindrance.

Throwing the grenade accurately requires a hit against AC9, with a 1d10 meter scatter on a miss. When it hits, it detonates to freeze everything within a three-meter radius. Those that attempt to cross the space find themselves unable to make progress across it, no matter how fast they are moving. There is no sense of impact or collision- the subject's kinetic energy simply bleeds away so long as they try to cross the zone. Those inside the zone when it triggers may "ride" the expanding wave to its periphery to avoid being trapped inside it.

A rolling avalanche could be blockaded by the charge while it lasts, or a runaway vehicle brought to a dead halt without crashing. The kinetic sinkhole does have its limits, however, and will burn out 1d4+2 rounds after activating. Absorbing a major crash or kinetic discharge decreases its duration by one round.

SYMBIOTE GUN

A beetle-like crystalline creature somewhat shorter than a human forearm, the symbiote gun is meant to be worn like a bracer by the wielder. Its numbing proboscis draws sustenance from the wielder's blood, with that energy powering the bug's laser emissions. The close integration of the insect with the bearer's nervous system and its remarkably efficient visual organs allow it to aim its beams with extreme accuracy; instead of the usual +1 hit bonus of energy weapons, the symbiote gun gains a +3 bonus. The bug can fire 25 times before exhausting itself for half an hour. It can continue firing beyond that point, but each shot requires a Tech saving throw from the wearer or it inflicts 1 hit point of damage with its desperate feeding. The bug cannot be worn over a conventional vacc suit or other full armor, though a tech can modify a suit sufficiently with time and effort.

Symbiote guns deprived of a host go into hibernation, curling up until touched, whereupon they immediately scurble for a hold on the person who disturbed them. An untrained user needs time to practice the mental discipline necessary to trigger or safe the bug; panic or shock will cause an inexperienced user to fire the bug even if not explicitly desired. Symbiote guns can be made to lay 1d6 eggs that mature into new guns within three weeks, but this requires a proprietary hormone aerosol to be applied to the bug. The aerosol formula has long since been lost, and particularly old bugs have a 33% chance of having suffered genetic damage which will result in their offspring performing... strangely.

TEMPORAL EXPLOSIVES

A bizarre piece of pretech science, it's unclear what purpose these fist-sized explosive charges were originally intended to serve- and indeed, they may not have been intended as explosives at all. Whatever their original purpose, scavengers now use them to launch delayed explosive attacks.

Arming the explosive requires the user to dial in a specific amount of time, up to five hundred years at the maximum. Once the explosive finishes arming two rounds later, it vanishes; only advanced pretech scanning devices can detect any hint of its presence. At the end of its chosen delay the device reappears and instantly detonates. All victims within a ten-meter radius are hit for the listed

damage, with a Tech save to take only half. Until its appointed reappearance no conventional force can detect or remove it.

Most temporal explosives are found as individual charges, but 20% of them are discovered with a detonation transmitter capable of prematurely triggering any temporal charges within one hundred meters. Unfortunately, these transmitters are indiscriminate in nature, and will trigger all charges within range when activated.

THERMAL RAZOR

These weapons were most often inspired by industrial cutting tools used to shape thermosensitive plastics and other advanced materials. In the chaos of the Scream and the ensuing collapse

ARMOR

Designers of advanced hardshell armors are familiar with the risks of the hostile environments these suits often encounter and understand that popping the seals to get to a wounded comrade is not always practical. All sealed armors and vacc suits have medical ports that allow for the application of Lazarus patches, stims, and biopsionic aid without having to remove the suit. Wearers of any of the armors below are effectively immune to unarmed attacks and man-portable weapons of TL3 or lower.

AQUATIC OPERATIONS ARMOR

Designed for use on water-worlds and planets covered with non-corrosive liquids, the AOA, or “shark suit” is a self-contained hardshell that can crack a supply of oxygen out of almost any liquid chemical while powering itself on trace elements in the fluid. The suit can handle pressures of up to 2,000 meters of depth before risking implosion. Wearers without Exosuit-0 or a water-world Culture skill suffer a -2 penalty on hit rolls and -1 penalty to skill checks while operating the suit underwater.

Liquid jets allow the wearer to move at twice their normal movement rate underwater and integral sonar units grant submerged wearers a holographic map of their surroundings out to 50 meters, assuming no barriers impede the sound waves. Coded subsonics or tightbeam lasers allow suit-to-suit communication even when liquids block radio waves. The suit itself is designed to support the wearer for up to a week of unbroken submersion, though the wearer will need to refresh its food supplies and clean filters eventually.

MASQUERADE SHELL

These uncanny bodysuits have a “dissected” look to them when unoccupied, with its panels open and flexible components splayed wide. When the wearer attempts to don the shell it folds tightly around them and engages spatial distortion fields to compact the wearer into a volume of space compatible with the outlines of the suit. When active, a masquerade suit leaves the wearer looking precisely like another entity- even an alien creature of completely foreign physiognomy. Only a single entity can be impersonated, but the precision is accurate down to the DNA level.

Masquerade shells are perfect disguises against anything short of exploratory surgery. Even alien means of locomotion such as flight or undulation are perfectly replicated by the suit’s translation of human motive methods. New users may need some time to grow accustomed to particularly strange bodies, but the suit allows them to eat, drink, breathe, and otherwise act exactly like a member of the species in question. Integral translators even allow flawless communication- within the limits of human comprehension of an alien society, at least. Injuries to the user appear to be physical damage congruent with their current appearance, though serious

of civilization they were repurposed for more martial ends. They most often resemble long cutting bars or retrofitted axe blades, the edges smoldering with micro-plasma emissions. Almost all require two hands to wield effectively. Thermal razors inflict substantial damage on targets they hit, but they are especially useful in cutting holes in anything short of armored military bulkheads. They can melt their way through plastics, metals, common construction materials, and other solid barriers, cutting a man-sized hole up to a meter deep in one minute of work. Most of them were originally intended to be attached to industrial power feeds, however, and so they are voracious energy hogs. Each one consumes a full Type A power cell for each three minutes of operation.

ARMOR	AC	ENC	TL
<i>Aquatic Operations Armor</i>	3	2	5
<i>Masquerade Shell</i>	4	0	5
<i>Microgravitic Assault Shell</i>	3	2	5
<i>Penitence Bulwark</i>	3	2	5
<i>Phase Skin</i>	5	1	5
<i>Reactive Riot Suit</i>	4	1	5
<i>Replica Armor</i>	8/5/3	0/1/2	5
<i>Roach Harness</i>	5	0	5
<i>Shine Skin</i>	-	0	5
<i>Websuit</i>	4	0	5

medical attention will reveal the falsehood. The suits were intended for years of deep-cover infiltration, and are as comfortable to inhabit as the wearer’s own skin.

MICROGRAVITIC ASSAULT SHELL

Intended to support planetoid assaults and boarding actions, the MAS was a favorite with Second Wave marines on the frontier. The basic suit functions as a hardshell vacc suit with integral comms, a built-in cutting laser, and up to 72 hours of operation on a single Type A power cell. In bright sunlight the solar panels can keep the suit functioning and performing basic fluid recycling until the wearer dies of dehydration in 6 days.

In gravity of 0.1 gees or lower the suit allows its wearer to fly at their normal movement rate and automatically orient themselves when working in microgravity. A user without Culture/Spacer or Exosuit skill may still suffer penalties due to unfamiliarity with microgravitic environments, but only in complex situations.

In heavier gravity the suit acts to bleed off falling velocity, eliminating damage from falls. There are even reports of MAS wearers

surviving involuntary atmospheric reentry, though such a feat requires an Exosuit skill check at difficulty 10 to avoid 10d6 damage from the atmospheric friction.

PENITENCE BULWARK

The original reasoning behind the creation of the penitence bulwark is unclear. Some hypothesize that it was the product of a particularly masochistic military order, while others suspect more sinister uses in interrogation and extended torture. Whatever the reason, the bulwarks have often been repurposed as body armor by modern scavengers.

The bulwark appears to be a conventional armored bodysuit, with a breastplate, armored limb coverings, and helmet. It can be sealed against the external environment and used as a vacc suit if an oxygen supply is provided. Under normal circumstances it requires no power, but if provided with a Type A power cell, its special qualities can be activated.

When a penitence bulwark is activated, its wearer suffers sharp pain from almost every tactile input. Even walking across a room is evokes needles through the wearer's soles, and actual injuries flare with acute pain. Yet the bulwark's nanofabs constantly treat the wearer with strong doses of regenerative compounds and tissue replacement foams. The wearer suffers a -2 penalty to hit rolls and a -1 penalty to skill checks, but they automatically regenerate 6 hit points per round. Each round in which they regenerate adds 1 System Strain point to the wearer, and the regeneration ceases if their System Strain is maximized. The bulwark's painful regenerative effect can be activated or deactivated as a free action, and can be maintained for up to 10 rounds on a single Type A cell

PHASE SKIN

A type of protective equipment favored by infiltrators and recon troops, a phase skin resembles a snug armored bodysuit, usually done in photomimetic materials that shift to blend with the surroundings. Stealth checks gain a +1 bonus while the PC is wearing a phase skin. More significant is its ability to briefly phase the wearer out of synchrony with the material world. For one round the wearer becomes intangible, capable of moving in any direction up to 30 meters. While the suit is active they cannot be affected by conventional projectile or energy weapons and can pass through anything short of pretech containment shielding. Intangible characters cannot affect the material world, though they can see and hear with minimal distortion.

If the wearer ends their turn embedded in a solid object the suit will force them into the nearest unoccupied space within 30 meters. Such an emergency shift will burn out these circuits from the strain, requiring an Int/Tech/Pretech check at difficulty 11 to repair it, along with a full day of work. The suit requires a Type A power cell to fuel its phasing, each cell allowing up to 5 rounds of continuous intangibility.

REACTIVE RIOT SUIT

These snug, flexible armored suits were intended for use by peacekeeping forces primarily charged with containing rioters and malcontents. Each suit was equipped with kinetic mirror circuitry to discourage the clubs, knives, and fisticuffs of the unruly masses. When the wearer of a riot suit is struck by a melee attack, the attacker automatically receives 1d4 damage from a focused kinetic

backlash. Muscle-powered primitive ranged weapons such as rocks, conventional bows, thrown spears, and the like cannot effectively harm the wearer, as their kinetic force is redirected harmlessly. Projectiles driven by explosive force or other mechanical aid are not hindered by this effect. The suit is powered by the very impacts that strike it, and requires no power cell for operation.

REPLICA ARMOR

With the late Terran Mandate enthusiasm for "pure" expressions of "cultural authenticity", replica armor of countless different styles and forms was created for recreational, religious, and cultural use. Many of these suits ended up on the frontier, not only as part of cultural groups who wished to retain a form of formal dress for their social rituals but also those souls who thought it worthwhile to bring along Mandate-approved "cultural artifacts" that could be of potential use in a fight.

While the armor was fabricated to resemble historical forms of protective dress filtered through a thick lens of creative interpretation, it was made of modern pretech composites and protective materials. While there was little real focus on improving its defensive qualities, the fundamental hardness and toughness of the fabrication materials has rendered it effective against modern weaponry. Light replica armor has AC8, replicas of things such as chain armor or breast-and-back chestplate qualifies as AC5, and full plate or a suit of reinterpreted o-yoroi armor might provide AC3 to the wearer.

ROACH HARNESS

A close-fitting catsuit with intricately-worked gloves and boots, the roach harness is equipped with integral gravitic stabilizers. The units pull energy from the wearer's motions, allowing them to move at their normal movement rate even up vertical surfaces or across ceilings. The stabilizers support much of the wearer's weight, so even surfaces that could not normally bear them can be traversed without difficulty so long as the surface is a solid object. The harness does require a steady feed of input energy while in use, however, and so a user must move at least 10 meters each round they are on a wall or ceiling or else they will fall at the end of their turn.

SHINE SKIN

Popular on worlds where energy weaponry has replaced more traditional projectiles, shine skins are tight-fitting undergarments worn beneath conventional soft armor of AC4 or worse, such as a combat field uniform or an armored undersuit. Hard armors absorb too much of any incoming energy attack to allow the shine skin to operate properly.

While drab to ordinary human perceptions, the skin instantaneously boils into a mirror-smooth reflective surface when exposed to sudden thermal energy such as a laser, open flame, or a plasma bolt. Shine skins provide no conventional AC benefit but allow the user to ignore the first 15 points of thermal damage they receive. Shine skins cannot be refurbished and are useless once the 15th point of damage has been absorbed. Shine skins do not protect against energy attacks that do not involve thermal injury, such as the gravitic blade of a shear rifle.

WEBSUIT

Originally intended as pretech protective suits for disaster response personnel, websuits have found more martial use since their original creation. They resemble nothing so much as balls of leathery “yarn” slightly larger than a human fist. When squeezed firmly, the suits instantly unravel into a tangle of thin nanocomposite straps that spread and merge together into a skin-tight protective suit around the holder, fitting under their current clothing and equipment. Most websuits still bear the ancient insignia of some long-lost disaster team, though others are simply single solid colors. The suit covers the wearer entirely, though the faceplate is transparent and allows normal speech and consumption. As with all pretech armor, the websuit is extremely comfortable to wear,

WEAPON IMPROVEMENTS AND FLAWS

Not every implement of destruction is created equally. Centuries of neglect and mistreatment can reduce even the finest weapon to an unreliable wreck, while other armaments were crafted with such care as to perform far in excess of their peers. These tables offer some ideas for creating superior or inferior weapons.

By default, you might roll 1d10 for any given artifact weapon. On a 1 or 2 it's damaged in some way and calls for a roll on the weapon flaw table. On a 10, it's a superior specimen and gets a roll on the improvement table below. The tables assume that the weapons are projectile or energy guns of some sort, but most modifications can be applied to melee weapons as well with a little adaptation.

Most flaws are unreparable unless stated otherwise, though generous GMs may allow skilled Tech/Pretech specialists to fix a flaw.

1d20	WEAPON IMPROVEMENT
1-6	Fine craftsmanship. The weapon gains a +1 bonus to hit and damage rolls.
7-9	Superb craftsmanship. The weapon gains a +2 bonus to hit and damage rolls.
10	Superhuman craftsmanship. The weapon gains a +3 bonus to hit and damage rolls.
11-12	Bottomless ammo. Integral matter forges or microfusion power nodes allow the weapon to fire constantly without running out of ammunition.
13	Stealthed. The weapon folds or compacts into a small no-encumbrance bauble that appears harmless. Unfolding it can be performed as part of an attack.
14	Long range. Double the weapon's range. Melee weapons can be thrown up to 30 meters and return.
15-16	Lightweight. The weapon counts as one fewer point of encumbrance. Rifles become pistol-sized and one-handed.
17	Penetrating. The weapon can blow through up to four centimeters of hard cover without hindrance.
18-19	Rugged. The weapon cannot be damaged by anything short of pretech demolitions charges, and can function normally in virtually any environment.
20	Roll again. Roll 1d10 to determine craftsmanship, then 1d10+10 to determine another quality. Reroll this result.

and can be removed and restored to its compact shape by a firm tug on the release mesh.

Aside from its protection from cuts and impacts, the websuit filters all dangerous gases from the atmosphere around the wearer and protects them from almost all non-military forms of corrosive aerosols or liquids. The wearer can also ignore temperature extremes between arctic chill and a vigorous bonfire, though no protection is offered from lasers or other thermal-based weapons. If an oxygen tank is available, the websuit can serve as an effective vacc suit for the duration of available air. The suit draws the trace amounts of power it needs from the movement of its wearer, and requires no energy cell for operation.

1d12	WEAPON FLAW
1	Hangs fire. Whatever the user's initiative, it only actually fires at the very end of the round.
2	Missing parts. The device requires 1d8 x 100 credits worth of specific TL4 parts to be made functional.
3	Radioactive power system. If the weapon was fired that day, the shooter needs to make a radiation save check.
4	Alien grip. The weapon was designed for a transhuman or exotic alien; humans suffer a -2 hit roll with the weapon.
5	Ammo hungry. Each shot uses up two rounds of ammunition from the magazine or power cell.
6	Unreliable. The first time the weapon is used each day, roll 1d10. On a 10, it jams or malfunctions. Clearing a jam is a difficulty 9 Tech or relevant Combat skill check, or automatic with ten minutes of work.
7	Useless chrome. The weapon is crusted with nonfunctional or useless fittings that are nonetheless vital for its operation. Its Encumbrance increases by 1.
8	Wrong caliber. The weapon requires precisely-made ammunition or tuned power cells that are useless for any other weapon or purpose, though they can be acquired on any TL4 world.
9	Runs hot. Requires thick gloves or other protective gear when firing, or else it inflicts 1 hp of damage on the user.
10	Subtly misaligned. On each hit, the GM secretly rolls 1d6. On a 1, it's a miss. Correcting the sighting takes 1 day and at least ten magazines or cells worth of ammunition.
11	Fragile. If using Other Dust the weapon's condition degrades two steps whenever it is damaged. If otherwise, the weapon suffers a cumulative -2 hit penalty after every natural 1 on a hit roll, requiring a day and a successful Tech skill check at difficulty 9 to fix it.
12	Heavy. The weapon is bulky and clumsy. If the wielder doesn't have at least a +1 Strength modifier they suffer a -2 hit roll penalty when using the weapon.

A BETTER SHELL

MEDICAL AND RECREATIONAL STIMS

Advanced medical technology was among the few varieties of hyper-advanced pretech that the Terran Mandate allowed to flow unimpeded to the colonial worlds. Nanite-based pharmaceuticals helped cement their control over the core of human space and allowed them to offer fractious frontier planets the chance to evade some of the worst scourges of the human experience. The Directorate considered the risk of the tech slipping out of their control to be an acceptable danger. Even if the frontier planets managed to reproduce their medical stims and treatment programs, the worst that the Mandate would suffer would be one fewer carrot to tempt their unruly charges.

As a consequence, pretech medical stims are among the most common relics found in human space. Almost every community or outpost had reason to stock a supply of these medical tools, and if they weren't all expended in the last terrible days of the fall of human civilization, they remain still in their ancient cases and wrappers, waiting to be used by a generation less accustomed to their nanotechnological miracles.

THE STIM

The standard tool for applying medical treatment during the Second Wave was the stim, a small applicator triggered by skin contact after activation. Stims will work even through thick layers of grime or conventional clothing, but armor or exceptionally bulky clothing is too thick for application. Modern armor and vacc suits are all designed with medical ports for stim or patch application.

The basic stim design was replicated for thousands of different nanite mixes. Instead of recreating the fundamental medical nanite injection process, manufacturers simply loaded their stim's effect on top of a basic medical spray. Aside from being more efficient from a design perspective, the minimal medical payload of a stim often helped deal with sicknesses or injuries that the user hadn't even noticed yet.

Unless specified otherwise, every stim automatically heals 4 hit points of damage plus the user's Constitution modifier. This healing adds one point of System Strain. If the user's System Strain would exceed their Constitution score, no healing is provided. If the user is unhurt, then no healing is performed and no System Strain is gained.

Some stims grant bonuses to particular attributes of traits. These bonuses do not stack. Most of these stims add System Strain as part of their effects, and cannot be used by characters with maximized strain. The healing qualities of a stim kick in before the augmentation, and so if a stim's healing maximizes a character's System Strain the drug's boost will not take effect.

Stims can be applied to any willing or incapacitated target. Applying a stim counts as a character's action for the round. Most stims function only for humans, though a stim's medical function may

be programmed to provide some succor to aliens familiar to the pharmaceutical's creator.

Most stims are relatively easy to identify, retaining their maker's logos and labeling on the small applicators. Military stims and some battered commercial specimens may have lost these labels, however, requiring an hour of study and Tech/Medical-2 skill or Tech/Pretech-1 skill to clearly identify their uses.

BAD STIMS

Most stims remain "good" indefinitely. Even so, some stims end up contaminated by their surroundings, degraded by radiation, infected by alien contagions, or otherwise tainted by their long neglect. The GM might optionally decide that 10% of stims found outside of proper storage are tainted.

These tainted stims require a difficulty 9 Tech/Pretech or Tech/Medical check to identify along with a medkit or similar assaying tool and an hour to work the assay. If a suitable drawback isn't obvious from the circumstances, the following table might help.

1d10	MALFUNCTION
1	The stim is totally useless, doing nothing when applied.
2	The stim's duration is dramatically lowered, functioning only 1d4+1 rounds after application.
3	The stim has gone bad, providing no benefits and forcing the user to save versus Tech or be sickened for 1d6 hours, taking a -2 penalty on hit rolls and -1 to all skill checks.
4	The stim is mislabeled. Roll randomly to determine what the stim really is.
5	The stim is mistuned, and inflicts unnecessary strain on the target. The stim adds an additional 1d4 System Strain points to the user. If this would push them over their maximum, the stim has no effect.
6	The stim's effects keep cutting out. On any given round, the stim's effects have only a 50% chance of functioning.
7	The stim is corrosive. It provides no useful function and forces a Tech save to avoid 2d6 hit points of damage.
8	The stim is concentrated. Durations or effects are doubled, but 1d4 additional System Strain points are applied. If this would push the user over their maximum, the stim has no effect.
9	The stim is unstable. When used, roll 1d6; on 4+ it works normally, on 3- it is toxic and useless, forcing a save vs. Tech to avoid suffering 2d6 damage from it.
10	The stim is lethal. The user must save versus Tech or be reduced to 0 hit points instantly.

STIMS

The stims listed here are simply some of the more common developed in the waning days of the Second Wave. Not all of them were abundant in all sectors of the frontier, and some stims may not have been available at all in a given sector.

While stims are among the most common pretech relics found in human space, they are still extremely difficult to buy or sell. Planetary governments confiscate them as eagerly as they do every other pretech relic, and less “state-affiliated” traders are under constant pressure from buyers who are uninterested in paying for the goods they wish to have. Still, some of the less widely-useful stims on the list might be acquired for 1,000 or 2,000 credits per dose.

ABSOLUTION

A more powerful medical version of the over-the-counter purge stims favored in the latter days of the Mandate, an Absolution stim does a violently complete reset of the user’s physical system, purging them of any stim effects, radiation damage, hostile nanites, and almost all toxins or diseases not programmed for bioweapon-grade virulence. Even Black Dust and other weaponized nanite damage is negated for 1d4 rounds by the dissipating effects of the stim. An Absolution stim inflicts 2 points of System Strain on the user, but if their system can’t handle that alteration it still takes effect, but inflicts 1d4 damage for each point of Strain it can’t apply.

BATHORY

A more primitive version of the Immortality stims of the later Second Wave, a Bathory stim temporarily returns the appearance of youth to an aged user. Application of the stim repairs cosmetic damage and weathering to return the user to their apparent prime of youth. The actual damage of age is not repaired and its progress is not halted, but for one week after the stim is used the user’s appearance will remain fresh and young. Presently these stims have the greatest value to inhabitants of primitive worlds that lack the technology for effective anagathic treatments.

EVERGREEN

A combat stim intended for shock troops, Evergreen greatly boosts the user’s natural healing processes, fueling them with nanite-administered chems and tissue substitutes. For five minutes after applying this stim, the user regenerates 4 lost hit points every round, or approximately 40 hit points every minute. A user brought to zero hit points automatically stabilizes, but does not begin healing again unless brought above zero hit points by some other stim or effect. At the end of the stim’s effect the user’s System Strain is maximized, regardless of its original level.

FRANTIC

A dangerous combat stim intended for military use, Frantic temporarily increases the user’s reaction speed to near-inhuman levels. For 1d4+1 rounds afterwards the character gains an additional round’s worth of movement and actions after everyone else has acted in a turn. Frantic adds 1 System Strain point to the user. The enormous speed is hazardous to the user’s health; each round they take a second action, they suffer 1d4 damage from the stress.

STIM	EFFECT
<i>Absolution</i>	Purge nanites, radioactivity, and stim effects.
<i>Bathory</i>	Present a facade of healthy youth
<i>Evergreen</i>	Temporary hit point regeneration
<i>Frantic</i>	Extra combat actions at a cost in hit points
<i>Gyroscope</i>	Alters sexual orientation for a month
<i>Immortality</i>	Negates physical aging for a month
<i>Ironhide</i>	Deflects the next 15 points of physical damage
<i>Lifter</i>	Allows an hour of flight time
<i>Livewire</i>	Protects from electricity and allows a touch zap
<i>Mimesis</i>	Mimic a living or dead human’s appearance
<i>Mirrorball</i>	Trade situational awareness for acute focus
<i>Nimbus</i>	Shine in patterns of colored light
<i>Nullity</i>	Blur thermal signature and visual appearance
<i>Panopticon</i>	See in a 360’ circle, even through darkness
<i>Philtre</i>	The next person touched takes a liking to you
<i>Pisces</i>	Seals user in an underwater operations shell
<i>Possum</i>	Mimic death perfectly for 24 hours
<i>Salamander</i>	Regrow a lost limb or organ for all System Strain
<i>Sanctum</i>	Trick telepathic scans temporarily
<i>Shrinkwrap</i>	An emergency vacc suit in a stim
<i>Shutdown</i>	Centuries of cold sleep packed in a stim
<i>Snapback</i>	Teleport back to the place the stim was used
<i>Sour</i>	Become unpalatable to predators
<i>Sunscreen</i>	Protect from high environmental temperatures
<i>Thunderbolt</i>	Boost the user’s Strength modifier
<i>Titan</i>	Highly taxing combat stim with many benefits
<i>Tranquility</i>	Artificially calm and soothe the user
<i>Velocity</i>	Boost the user’s Dexterity modifier
<i>Viper</i>	Give the user nanotoxic skin
<i>Zephyrstep</i>	Walk up walls and across ceilings

GYROSCOPE

Another recreational drug popular in some cultural circles, Gyroscope artificially alters the subject’s sexual orientation in whatever direction is encoded into the stim. The subject need not act on the change, but long-term usage of Gyroscope can effectively rewrite a person’s social relationships. Some cultures used Gyroscope strictly for recreational or religious purposes, while others used it to “correct” orientations to those more serviceable to the group’s goals. A single dose of Gyroscope lasts for 30 days.

IMMORTALITY

This stim greatly reduces the pace of aging in the recipient. For 2 months after receiving an immortality stim the user will not physically age, and the signs and ravages of senescence will gradually fade until they appear to be in their prime. With a sufficient supply of these stims a user could be functionally immortal,

though they were a relatively late Second Wave development and thus were uncommon even at the peak of human technological sophistication.

IRONHIDE

Kinetic dampers are spun around the skin of this stim's user, invisible buffers to absorb and redirect damage from high-velocity impacts or sharp objects. An ironhide stim absorbs the first 15 points of damage inflicted by a physical attack in the hour following its administration. Use of an Ironhide stim adds 1 System Strain.

LIFTER

Temporary antigrav nodes are fabricated by the nanites of this stim, allowing the subject to fall any distance without damage so long as the stim is in effect. At a greater stress on their system, the nodes can even allow the subject to fly so long as they are not heavily encumbered. The subject flies at their normal movement rate and may hover when desired. The stim generally lasts one hour, though each round of flight decreases that duration by one minute- thus allowing about six minutes of flight on a fresh stim. The stim functions particularly well in microgravity, allowing flight with no lessening of the duration. The stim adds 1 System Strain when used.

LIVEWIRE

A stim meant for technicians and power engineers, Livewire sheaths the user in an imperceptible layer of microcapacitors and energy shunts. They become impervious to electrical shocks for the duration of the stim's effects, and can see the presence of electrical currents as if they were bright neon lines. The stim lasts for four hours under usual circumstances. The user can recharge a Type A power cell by touch at the cost of one hour of duration, or discharge the entire stim with an unarmed attack that inflicts 1d6 electrical damage for every hour or portion thereof left on the stim. Using this stim adds 1 point of System Strain.

MIMESIS

This stim drastically increases the plasticity of the user's physiology. The nanites imprint on the first other living or dead human body the user touches within an hour of taking the stim. Once imprinted, the user physically shifts to mimic the subject perfectly, including retina and DNA matching. The shift takes four rounds to complete and lasts for 24 hours.

MIRRORBALL

This stim improves the user's powers of attentiveness, allowing for an inhuman degree of focus on an intricate or complex task. While under the effects of Mirrorball the user becomes completely, utterly absorbed in whatever task they are currently performing. They are almost oblivious to their surroundings, failing all Perception checks, but gain a +1 bonus on any other skill checks and are immune to any penalties due to distraction. A dose of Mirrorball lasts for four hours.

NIMBUS

The user of this stim is haloed in lights of a color, pattern, and form chosen by the user. Images can be fabricated by simple thought and patterns formed by an untutored exertion of will. The lights can be made sufficiently brilliant to illuminate out to 20 meters or focused into a beam that extends for 40 meters in one

direction. They can also be doused when desired. At maximum brightness any ranged attacks against the user are at -2 to hit for the first round of combat unless the attackers are wearing eye protection of some sort. A Nimbus stim lasts up to eight hours.

NULLITY

A military stim for use by infiltrators, Nullity stims dampen the user's signatures- thermal, olfactory, radio, and visual, leaving them translucent and blurred. A user is effectively invisible to TL3 infrared viewers or similar security measures and gains a +1 bonus on all Security and Stealth skill checks against TL4 tech or living observers. If moving no faster than 5 meters per round, the user gains a +2 bonus on Stealth checks. A Nullity stim lasts for one hour and adds 1 System Strain to the user.

PANOPTICON

The stim adjusts the user's sensory range and filters the resulting input into forms familiar to a normal human. For an hour after the stim's application the user has 360' vision that is usable even in perfect darkness. They can also detect power cells and similar energy sources by sight alone. This "visual" input is not dependent on their physical eyes- they cannot be effectively blinded or blindfolded while under the stim's effects. The stim grants a +1 bonus to all visual Perception checks.

PHILTRE

Most often employed as part of relationship therapy, religious rituals, or cultural conditioning processes, the Philtre stim charges the user's skin with a highly psychoactive nanite compound. The next human they touch within the following hour must make a Tech saving throw or be flushed with a sudden feeling of affection and devotion toward the user. The emotions are not strong enough to defeat the subject's reason but dispose them to do all the favors for the user that they might do for a good friend. The emotions fade 1d6 hours after the triggering, though if the user has done nothing displeasing they might linger in a more authentic fashion.

PISCES

Useful for tourists on water worlds and those with a need to perform underwater work, a Pisces stim encases the user in a protective shell that grants them a natural AC of 6. The shell filters and recycles an internal atmosphere and maintains a comfortable pressure and temperature down to depths of 1,000 meters. Integral sonar provides a basic outline of the user's underwater surroundings out to about 20 meters, and glowspots on the shell can be triggered to provide light. Pisces shells last for up to four hours, with the last half-hour of their functionality accompanied by increasingly-urgent warnings to reach a habitable atmosphere.

POSSUM

This stim alters the user's control of their biological processes, allowing them to perfectly mimic death. While impersonating a corpse the user is automatically stabilized from any mortal wounds and can only be killed by damage that intentionally destroys their brain or major organs. They do not breathe, have no heartbeat, and cool rapidly, though they retain awareness of their surroundings and can snap out of their reverie with a round's action. If they've been reduced to zero hit points in the interim they have 1d4 rounds to act before they fall unconscious, stable but gravely

wounded. A Possum stim's benefits are available for up to 24 hours after application, and add 1 System Strain point to the user.

SALAMANDER

This powerful medical stim allows the regrowth of lost limbs and organs. On application, the host regrows their largest missing organ or body part, the limb forming over 1d6 rounds of debilitating pain. To start this process inflicts 3 System Strain points, and by the end of it the subject's System Strain is entirely maximized.

SANCTUM

A rare psitech stim designed to protect a subject from telepathic interrogation, Sanctum shields the user's mind in a matrix of subtle reflective elements. A telepath who seeks to probe the user's thoughts or memories will actually find an innocuous answer dredged from their own subconscious expectations. A suspicious psychic who searches a user's mind for signs of treachery will find only harmless, expected memories and thoughts fabricated from their own unconscious expectations and their known information about the user. Sanctum lasts for four hours per dose, but after every instance of resisting a scan the user make a Tech saving throw. On a failure, the duration drops by an hour as some of the nanites are destroyed in deflecting the probe. This nanite stress alerts the user when they have been the subject of such a probe.

SHRINKWRAP

An emergency stim for hostile-environment workers, a Shrinkwrap stim bubbles the user in a very thin film of nanoactive sealant. The film is capable of maintaining the wearer's pressure, temperature, and oxygen needs for up to 24 hours, and can maintain the subject's hydration levels sufficiently to avoid thirst. Shrinkwrap stims automatically emit a radio beacon when active, however-while it makes it much easier to locate a victim for rescue, it also is sufficient to trip many advanced security systems. Shrinkwrap films can self-repair damage caused by cuts and abrasions, but the film peels away into uselessness after 24 hours.

SHUTDOWN

An advanced version of the Shrinkwrap stim, Shutdown drugs were sometimes found in the emergency lockers of remote stations, isolated outposts, and other locations where quick help could not be expected. Administration of a Shutdown stim to a cooperative subject bubbles them in a thick layer of transparent nanite stasis foam. The foam holds the user in a state of suspended animation, halting any biological processes and stabilizing a critically-wounded user for a maximum of 1d6+3 centuries before losing integrity and killing the subject if they have not already been awoken. Deactivating the stim can be accomplished by breaking the foam.

SNAPBACK

While theoretically fabricated for use in rescue work, Snapback found favor with infiltrators and scouts. When the stim is used the subject feels a subtle sense of spatial awareness centering on the place where they took the stim. For the duration of the stim's effect they may spend their character's action for the round to teleport back to this location, provided they are within a five-kilometer radius of it. They may carry objects and even other people with them, up to a maximum of two other passengers, but unwilling subjects may make a Tech save to resist the jump. Before each jump the user must make a Tech saving throw or gain 1 System

Strain point; the jump fails if this would put them over the maximum allowed. A single dose of Snapback lasts for six hours.

SOUR

Common on worlds with numerous parasites and vermin, Sour stims alter the subject's skin chemistry to leave them highly unpalatable to predators. Unintelligent vermin and parasites will refuse to bite the user, while larger beasts must make a Tech saving throw to press an assault after their first successful bite attack. Sour stims last for 24 hours per application.

SUNSCREEN

A protective stim for high-temperature operations, use of a Sunscreen stim bubbles the user and their equipment in an invisible layer of thermal shunts and nanoscale energy sinks. The user becomes impervious to environmental heat and related toxic fumes. With a suitable breathing apparatus the user can walk across a burning planet's surface without combusting, or stir a crucible of molten iron with their bare hands. The disruptive shock of laser and plasma weapons is sufficient to disrupt the nanite shell long enough to inflict damage, however, so thermal-based weaponry still affects the user, albeit they do only half normal damage. A Sunscreen stim lasts for one hour per dose and adds 1 System Strain point.

THUNDERBOLT

Some sports prize speed, but others emphasize physical strength. Thunderbolt was most common among powerlifters, wrestlers, and other sports relying largely on raw might. A dose increases the user's Strength modifier by +1 for 30 minutes, at a cost of 1 additional System Strain.

TITAN

An advanced combat stim of dubious safety, a Titan stim gives a soldier a brief boost of enormous physical prowess. The nanites reinforce bone and tissue structures, increase muscular density and amplify reaction speeds. A Titan stim lasts for one minute and adds 1d4 System Strain points; if the amount added is more than the user's Constitution can handle, the stim fails. While under its effects the user has a base AC of 4, a +1 bonus to both Strength and Dexterity modifiers, an additional +2 bonus to hit, and automatically acts before any non-drugged combatant. Even if reduced to 0 hit points, the user can continue acting normally for 1d4 rounds- but when they eventually collapse, that time is counted against the countdown for applying resuscitation measures.

TRANQUILITY

A popular state-sponsored recreational drug during the latter years of the Terran Mandate, Tranquility artificially calms and sweetens a user's thoughts and temperament, infusing everything with a subtle glow of rightness or philosophical acceptance. A dose of Tranquility can suppress most ordinary dreads or low-level psychological distress, and grants a +2 bonus for Mental Effect saving throws against effects that induce strong emotions. A dose of Tranquility lasts for four hours, though automatic anti-abuse components allow it to affect a user only once every 24 hours.

VELOCITY

One of a wide range of sporting stims, Velocity boosts the user's reaction speed and physical agility. The user's Dexterity modifier increases by +1 for 30 minutes at a cost of 1 System Strain.

VIPER

An illegal stim devised for the benefit of assassins, Viper coats the user's skin with an invisible sheath of neurotoxic nanites. At the user's discretion they may release these nanites on a subject they are touching, infecting them with a delayed-action toxin. Once a target is infected, the user may set the toxin's delay to any interval between immediate effect and a week later. Once the toxins go off, the victim must make a Tech saving throw each round or lose one-half of their maximum hit points. The toxins continue trying to kill the subject for 1d4+1 rounds before running out of power. A careful medical inspection will detect the infection and a competent TL4 clinic can neutralize the toxin before it triggers, but the poison is undetectable to most casual bioscans because it remains locked in the nanites until it is activated. Using a Viper stim adds 1 System Strain point to the user and lasts up to eight hours or until a target is infected.

ZEPHYRSTEP

While it makes for truly impressive dance performances, Zephyrstep has more practical function for most adventurers. When applied, the user becomes capable of moving on vertical or inverted surfaces at their full normal movement rate. Gravitic compensators even allow them to stand on surfaces that would not normally bear their weight. The user must keep moving, however, at least 10 meters per round; if she spends a round without moving far enough she will fall if not situated on a suitably horizontal perch. A dose of Zephyrstep lasts for one hour and adds 1 System Strain to the user.

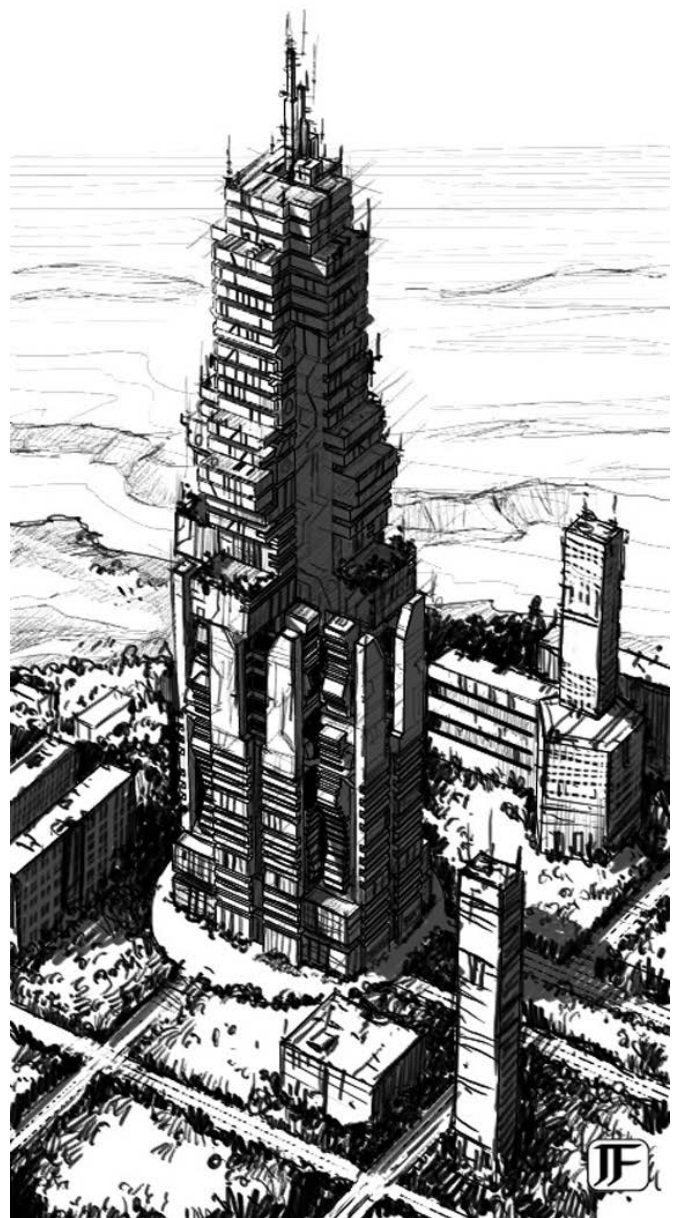
STIM MANUFACTURERS OF THE SECOND WAVE

It can occasionally be useful to personalize stims as being the product of particular manufacturers. The players might stumble on a cache produced by some long-vanished manufacturer, or they might explore a ruined production building owned by a particular forgotten brand.

Bootlegged stims come in a variety of candy-colored applicators, each one blazoned with the logo of some frontier scratch lab that used stolen biological data and iffy nanofacs to produce the stims. These stims all have a 1-in-10 chance of being useless when applied, and only extensive assays will reveal this flaw.

NanoLife stims often had a "natural" motif, with floral or leaf decorations and particular blossoms indicating particular stim effects. Their medical substrate was superior to that used by most of their competitors; their stims heal 6 hit points instead of the usual 4.

Naval Issue stims were produced by a number of subcontractors for the Mandate Navy, and usually have a silvery-gray sheen with a short alphanumeric code along one side indicating their contents. Proprietary stimulant mixes give all of their stims the side-effect of restoring the vigor and energy of a user, allowing them to function without sleep for another 24 hours. If the user spends more days



without sleep than they have Constitution points, however, they will collapse for 48 hours.

Purity League stims are the product of a rather evangelistic vegan organization of the late Second Wave. They come in shades of green, often with a grassy motif to the patterning on them. While they function normally as stims, they induce nausea and vomiting in anyone who eats animal protein within the next 24 hours.

Sarasvati Group stims have a metallic look, most often in deep golds or ruddy bronze. The product of an extremely high-radiation stellar cluster, each cures 1d4 points of Constitution damage inflicted by radiation poisoning.

Tokatsu Syndicate stims have a porcelain-like ceramic finish with small ink-brush images "painted" on the surface. They use an unusually stable nanite formulation; Tokatsu stims never fail to function unless they have been directly sabotaged.

DELIGHTS OF A FORMER AGE

COMMERCIAL GOODS AND TOOLS

While military and medical goods tend to be of most interests to the scavengers of this latter age, the ruins of ancient cities and long-abandoned orbitals often contain the relics of more peaceful lives. This section provides a number of artifacts and trifles suitable for civilian homes and offices. Some of the devices are largely useless to adventurers, but others can demonstrate a utility that their original creators may not have anticipated.

ACCELERATED SURVIVAL GARDEN

The garden is most commonly encountered as a palm-sized brick of nanocomposite embossed with floral patterns and a pull-tab at one end. If the tab is pulled the brick will start to heat up and pulse. One round later, the nanites burst into a thick mat of foliage and numerous bamboo-like plants, the whole grove extending ten meters in diameter and the plants growing two or three meters in height. The garden does not injure those within its expansion radius but it does block sight through its thick greenery.

The “garden” is strictly artificial, but nanofacs in the structures transmute atmospheric gases and soil into the precursors for rapid plant growth. Within two days, the false garden becomes real plant growth, though the requisite nanite framework it requires prevents it from expanding beyond its original area. The garden can survive in any climate between arctic chill and noonday desert heat and can subsist on planets with thin, thick, or breathable atmospheres.

A healthy garden’s biological processes and nanofac workarounds allow it to produce globular, water-heavy fruits and a variety of edible leaves and plant growths. The solid food must be soaked in the water-fruits for an hour before consumption, however, as individually they both are laced with a mild toxin that leaves them tasting extremely bitter in order to dissuade hungry animals. When soaked together the compounds neutralize each other and provide bland but nutritious sustenance for up to 30 people each day. Up to twice as many can be sustained at need, but it puts the garden at risk of ecological collapse, with a 10% chance of failure each day its maximum normal load is exceeded.

BINARY ADHESIVE

This adhesive comes in the form of a thumb-sized tube of opaque gel with a small aerosol spray on the opposite end. The gel can be spread as a round’s action, and when catalyzed with the spray will adhere to any object that contacts it during the next five minutes. The adhesive bond is as strong as the objects it binds, and cannot normally be broken without damaging or destroying the objects. If flesh is adhered it will inflict 1d6 damage to scrape it free, though such damage cannot not kill a victim. A second spray of the catalyst will release the adhesive.

BIOMONITOR

A wristwatch-like device intended to serve those primitive frontier unfortunates who lacked more advanced monitoring tools, the biomonitor requires a one-day calibration period in order to fully scan and assimilate its user’s data. Once complete, a touch to the face reveals a holographic control panel that provides full details of a host of medical readouts and analyses, sufficient to give a +1 bonus to any Medical skill check performed on the user.

More significantly, the biomonitor also immediately alerts its wearer of any dangerous radiation, toxin, hostile atmosphere, severe allergen, or other environmental hazard. A pass of the biomonitor over food and drink can also automatically analyze it for poisons and foreign objects, with only military-grade toxins having a chance of escaping notice.

The biomonitor operates off of the body heat of its user, and no external power supply is necessary for its use.

CONCERT CUBE

Often emblazoned with the esoteric sigils of long-vanished musical acts, a concert cube projects a vivid holographic recreation of a particular musical event when the activation stud along the upper side is touched. The embedded expert system adapts the performance to the cube’s surroundings, causing the musicians to appear to actually be physically present and interacting with the environment and audience, albeit usually in “canned” ways. If the cube is moved, the musicians will follow it, never going more than 20 meters away from the device. Noise from the performance can usually be heard up to 50 meters away, and the cubes will only shut down if at least 80% of the “audience” asks for them to end their set. The cubes can play for up to eight hours before requiring a recharge off a Type A cell.

CONTAINMENT SEAL

A containment seal is a palm-sized disc with a clearly marked “up” and “down” indicator on either side and an activation toggle along one edge. When triggered, the “downward” side emits a pale blue transparent hemisphere that extends smoothly down to the floor, with a radius equal to its height above the nearest surface, up to a maximum of a 3 meter radius.

The disc hangs in the air where it is placed and the blue light flashes urgently for one round before the hemisphere turns fathomlessly black and seals the interior space within a bubble of folded space. Objects partially embedded in the sphere can still leave it or be pushed from inside it but anything completely contained within the globe is trapped and cannot get out as long as the seal continues to operate. The folded space creates a near-infinite distance between the inside and outside of the seal and any attempt to cross it from either side is useless. The seal is spherical, though that may not be obvious unless the flooring inside it is torn up. Those trapped in the sphere will not suffocate, but light, sound, or

other energies subject to diffusion over distance cannot penetrate the sphere.

A person outside the seal can deactivate it, though it otherwise goes dead in 1d6 x 5 hours. A seal can only be used once before it burns out and becomes useless.

CYBERNETIC TRANSLATION INTERFACE

This palm-sized rectangle resembles a standard computing interface connector, but actually serves as a sophisticated translation device capable of parsing and interpreting a wide range of forgotten, exotic, or esoteric computing protocols. Any user with Computer-0 skill or better can use it to interface their own dataslab or comppad to alien or foreign computing devices as if their hardware were native to the system. This buffering also grants a +1 bonus on all rolls related to hacking a computer or network.

DATA SIPHON SHEATH

These devices most often take the form of a near-invisible transparent overlay that fits over the nail of the wearer's index finger. When touched to a computing device or other data storage hardware the sheath automatically reads and copies the device's internal state to its own molecular memory. While this does not necessarily defeat any encryption on the data, it does create a perfect copy for later download to another machine. The sheaths work only when desired, but can usually store only one device's data at a time.

DEVIL'S ADVOCATE

A private therapy device, the Devil's Advocate usually takes the form of a slim black rod a half-meter in length studded with short, sharp thorns. When touched by a user and wetted by a drop of their blood, the device rapidly and forcibly integrates with their nervous system and taps their near-term memories, with a Tech saving throw to reject the integration. If the link is successful despite their efforts, a somewhat sinister holographic replica of their face projects from the end of the sphere and immediately announces the fact or truth that the holder most wants to avoid.

For each additional round the subject can make another Tech saving throw; on a success, the link is broken, while a failure brings another admission the subject would rather not face. The linkage cannot dig very deeply into a subject's memories, but it can touch on any topic that is near to their surface thoughts or recent in event. Once the link is formed even dropping or throwing the rod will not break the bond. Only smashing the can halt the voice.

DIAGNOSTIC MIRROR

Meant as an early-warning device for home use, the diagnostic mirror automatically scans those reflected in it and systematically searches for a wide range of potential pathogens and toxins in their system. Health details are provided in the corner of the mirror in a readout comprehensible to a physician, along with instructions to the reader if immediate medical attention is needed. The communications networks these mirrors once fed into for medical alerts and physician requests have long since crumbled away, but the mirrors remain functional still. The mirrors cannot detect military bioweapons or other extremely esoteric sicknesses, though it can catalog symptoms and eliminate more common causes. The mirror

does not give treatment information, only diagnostic detection of sickness.

ETERNAL FLAME

Used most often for religious purposes, the eternal flame was also a popular element of home decor in certain cultures. While it appears to be an ordinary fire, a small flame most often contained in a palm-sized bowl, the eternal flame requires no oxygen, uses no visible fuel, and can continue burning even in a vacuum. The only way to extinguish it is to shatter its container.

EXPEDIENT LIMB REPLACEMENT

These thin, meter-long strips of gray nanocomposite include simple pictograms depicting their placement against to a badly damaged leg or arm, though no further warning of its effect. If the ELR is placed against a severely wounded limb or dismembered stump it will promptly unravel into a spidery matrix of silvery nanocomposite, dissolving the damaged limb and forming a meshwork replacement for the lost flesh. The limb is as strong and durable as its fleshly mate and the process will heal 2d6 damage to an injured character as damaged flesh is replaced with nanocomposite. Such summary dismemberment was of small importance during the Second Wave, when advanced regenerative medicine allowed limb regrowth as a trivial matter. Modern TL4 medical aid takes substantially longer to regrow limbs, and even then there may be difficulties. There is a 25% chance that the limb loss is permanent without pretech regeneration treatments.

FOLDBOX

While cabinets and boxes are the most common form for this device, packs and other worn containers are also sometimes discovered with their properties. Spatial distortion webs and integral anti-gravity nodes combine to allow a seemingly impossible weight to be loaded into a foldbox with no perceptible increase of the box's weight. The average foldbox is approximately a one-meter cube on the inside and can contain any amount of gear or equipment that could plausibly fit into such a space without weighing more than one encumbrance point to a bearer. If the foldbox is destroyed or seriously damaged, however, everything within it bursts out in an uneven spray of partially-compressed components. The sudden distortion will destroy at least one out of every two objects inside.

FORCE UMBRELLA

A simple pendant or other bauble emblazoned with its designer's logo, this device shelters the wearer from ordinary environmental precipitation and wind, keeping them immaculately dry and kempt. If the user is drenched in larger amounts of liquid, the fluid will automatically roll off them and their possessions within one round, leaving them perfectly dry.

FRACTAL SHELTER

This dense, solid cylinder is slightly larger than a human fist, with a small activation toggle at one end of the tube. When set down and activated, a timer begins counting down on the surface of the cylinder, giving the user thirty seconds to get clear of the shelter. Once the timer rounds out, the fractal shelter "unfolds" from its self-recursive bundle and blossoms into a large, sturdy structure equivalent to a small house of two floors and ten meters on a side. Basic furnishings, plumbing, and cooking equipment are stocked with the shelter, which is powered by ambient light and heat. The

shelter is sealed and pressurized, and can maintain a comfortable interior atmosphere and temperature at any heat less than that of a burning surface temperature or corrosive atmosphere. Once emplaced, the fractal shelter cannot be repacked.

If there is not sufficient room for the shelter its expansion applies 20 points of damage to any obstacles between it and its full deployment. If that isn't sufficient to break down the resistance the expansion process fails and the shelter remains a half-built tangle of sharp edges and unformed furnishings.

GAMING MINIATURES

Fanciful little figures no more than a few centimeters high, these gaming miniatures are relics of a number of byzantine ancient pastimes that involved their employment. Most are found near a palm-sized control unit. While these miniatures can "fight" each other with suitable tiny holographic effects according to an esoteric and largely incomprehensible set of rules, their more practical use comes with the control panel. A single Type A cell powers up to a dozen linked miniatures for up to 24 hours, each of which can be remotely piloted by the control panel at a movement rate of two meters per round. The pilot can see and hear through the miniatures, though the tiny icons cannot manipulate anything much larger than a pencil. The user can even speak through the linked miniatures, though the voice is processed by default into a tone more suitable for the figure's depiction.

GHOST ICON

These devices most often resemble portraits of particular figures. When activated, an integral expert system animates the figure depicted in the portrait and is capable of conducting conversation with viewers. Each ghost icon's expert system is carefully constructed from multiple brain scans of the original figure, and the depicted duplicate is capable of discussing any topic known to the original. Some expert systems are more willing to speak to strangers than others, and some might require convincing before they're willing to talk to unfamiliar persons. While the expert system is capable of answering even relatively complex or nuanced questions, it is fundamentally incapable of changing or learning anything but the most superficial details of its environment, nor is it able to perform genuinely creative thought. Most ghost icons were made to preserve the presence of some wise or well-loved ancestor, though some were intended for less savory purposes.

GRAVITY ANCHOR

Life in microgravity can be awkward for the untrained, and so the engineers of the latter Second Wave developed the gravity anchor for those temporarily away from the comfort of a more substantial mass. When this palm-sized device is attached to a surface and activated it immediately creates a zone ten meters in radius where 1 gee of gravity is exerted perpendicular to the plane of the device. Within this area occupants can maintain earthside habits without the inconvenience of microgravity. If the anchor is activated within an existing gravity well the zone overrides local conditions. Thus, if a character attaches it to a wall before turning it on, everything within 10 meters will promptly fall into the wall and rest there until the power runs out for the anchor. In microgravity a Type

A cell keeps the anchor operating for 24 hours, while in 1 gee of local gravity it lasts only 1d6 rounds.

HABITAT BUBBLE

These small, flat packages can be activated to unfold into a pressurized, oxygenated, temperature-controlled habitat bubble. The bubble itself can be adjusted in size, from as small as a two-meter hemisphere to a tent ten meters in diameter and three meters high. The pretech skin of the bubble feeds off of environmental energy to generate oxygen, heat, and light for the bubble. The skin blends to match its surroundings from the outside but is entirely transparent from within. While it can be pierced by any attack that does more than 4 hit points of damage, it will seal any damage until it has received at least 40 points of damage, after which it will rapidly collapse. The bubble can make a comfortable refuge on any world with a non-corrosive atmosphere and a temperature lower than Burning. No power is necessary to operate the bubble, but to repack it requires a Type A power cell to fuel the compaction.

HARD LIGHT EMITTER

An oddity of Mandate science, the hard light emitter allows for the creation of hologram-like projections that have an actual, tangible presence. Small portable emitters such as this one can project only one object at a time and can maintain it only within five meters of the emitter. Within that limit, almost any shape, color, and form of object can be created, so long as it is no larger than a human being and has no complex electronic parts or rare components. The emitter by itself has no intelligence or direction, but the objects it creates can be picked up and used by others as if they were solid objects with the strength and durability of good steel. The objects it creates are almost visually indistinguishable from the real thing, though anyone who picks one up will immediately notice the near-weightlessness of the object. Most emitters come with a library of home decor objects, though anyone with Computer skill can add in custom plans. A Type A power cell allows the emitter to create and maintain its objects for up to one hour, though most used for decorating purposes operate off of building power.

HEATING CAGE

A cubic frame roughly 700 centimeters on a side, with a small front panel to allow for temperature settings. Any non-living organic object within the cube when it is activated will be heated to that temperature in one round. The cage collapses into a fist-sized bundle when packed and can operate for hours on a single Type A.

Holocodex

A fashionable medium in certain Second Wave circles, a holocodex most often resembles a sheet of transparent composite engraved with an identifying title. When touched, it projects a humanoid expert system interface which is capable of answering questions about the codex's data and discussing matters relevant to its contents, along with displaying the actual audiovisual contents of the relic. Most holocodices were religious or philosophical in nature, though others were study aids for complex topics. Holocodices can function on trace solar and thermal power and require no external power source. If the holocodex contains a useful skill it can serve as a tutor in that skill up to the level it contains.

LIAR CARD

This nondescript slab of white polycomposite is roughly the size of a human palm. When placed against an identity card or similar security fob the liar card will contort and shift to perfectly mimic the card, optionally filling in the holder's identifying characteristics in place of the original card's owner. If the card is held before the eyes or fingertips of another person, it can also alter the bearer's retinal print or fingerprints to match the "donor". A drop of blood from a victim even allows the holder to pass basic DNA scrutiny, though not a careful medical check. Liar cards function without need for external power.

MAPPING CLOUD

These nanite mists are contained in small cylinders attached to sheets of blank polycomposite "paper" meant to receive the eventual map. If the mist is triggered it will immediately expand out to a range of 200 meters, recording the general outlines of terrain, passages, rooms, and other major features in the area. In the days of the Mandate, smart nodes in the building would provide more details as to specific rooms and their purposes, but most such networks have long since collapsed. The mist respects security and privacy directives, and some areas may be represented only as basic diagrams or left off the map entirely. Once released from its canister, the cloud completes a single map before dispersing.

MEMORIAL SARCOPHAGUS

A relic of the popular Neo-Egyptian Traditionalist faith of Mandate-era Earth, the memorial sarcophagus usually holds a small portion of bone, hair, or other bodily remains from a loved one. Most are small enough to be held comfortably in two hands, covered with intricate hieroglyphics and a faceplate that shifts to depict the person within in the prime of their life. A switch along the side of the sarcophagus produces a holographic image of the deceased that fully reconstructs their appearance from trace DNA in their remains. The hologram is usually programmed to recite the notable accomplishments of their life, along with any messages the dead especially wish to convey to their heirs. Sarcophagi can be emptied and reused for other bodies, and require no external power source to function.

MICROVALET

This fist-sized sphere contains an advanced expert system for domestic service. When activated, it floats at chest-height and can manipulate objects of ten kilos or less with its manipulatory tendrils. While it cannot fight, it is intelligent enough to obey simple commands from its activator and can perform complex domestic duties such as cleaning, cooking, or minor home maintenance. In the absence of broadcast power it requires a Type A cell to function. It is AC5 for purposes of evading attacks, and will be destroyed by 4 or more points of damage.

MINDSEED

While full-scale transhumanism blossomed only in certain sectors of human space, the artifacts of transhuman culture sometimes bled out into more distant reaches. An unused mindseed is a thumb-sized, milky-white crystalline ovoid with a slightly sharpened point. If used to nick a human subject the contact with blood will activate the seed, causing it to melt and merge with the subject's nervous system in a bond so intricate that only TL5 medical science can untangle it without killing the user. If the user dies, the mindseed precipitates out of their corpse to appear on their person, now bearing an image of the former possessor and a biometric code strip containing sufficient information for TL5 cloning tech to regrow a body. If the seed is then used to nick the medical clone, it will melt into the body and restore the mind of its former host before dissolving.

In practice, TL5 medical clones are almost totally unavailable. If the loaded mindseed is used to nick another human, it will attempt to implant the mind in an unwilling host. First the victim and then the mindseed's occupant make Tech saving throws, the latter using the score they had at the time of their death, repeating until one of them succeeds three times. The first one to make three successful saves has dominant control of the ensuing gestalt. If the other made no saving throws they are completely erased- either the victim's identity is gone or the mindseed dissolves without effect. If one save was made the winner still has some access to the victim's memories but the loser's identity is gone. If two saves were made the loser still has ego integrity despite the loss of physical control, and can take physical control of the body for 1d4 rounds during periods of great mental stress, such as after a failed Mental Effect saving throw.

Victims properly prepared by the appropriate surgical interventions and psychotropic treatments have a disadvantage in fighting off a mindseed, and allow the assaulting intellect to roll three saving throws before they can start to roll their own saves. The victim cannot be entirely brain-dead or severely cognitively impaired or else the mindseed's occupant will also be afflicted by these conditions.

MNEMONIC AMBER

Most commonly found in the form of large amber crystals, these devices are meant to capture a particular emotion, allowing the owner to re-experience the sensation at later intervals. Most mnemonic amber is already populated with powerfully ecstatic feeling, though some are empty, and others contain darker passions. If the amber comes within one centimeter of a subject's skin, they must make a Tech save or be overwhelmed by the emotion for 1d4 rounds, incapable of doing anything but defending themselves. Addiction failsafes on the amber prevent it from affecting a given creature more than once every 24 hours. An "empty" amber shard can be charged with a current emotion by gripping it tightly and allowing its sharpened edges to draw a few drops of blood. The amber is quite tough and can survive being thrown. 6 points of direct damage are needed to destroy it.

PENETRATING VISUAL SCANNER

Popular among both security personnel and rescue workers, the penetrating visual scanner takes the form of a pair of thick goggles. When active, the scanner allows the user to see through solid barriers, selectively focusing to look past specific walls and obstacles. The scanner can penetrate up to a full meter of obstruction, or up to three ordinary interior walls. Vision extends normally past these barriers. The PVS is hard on power cells, however, and a fresh Type A cell can only keep it operating for up to ten minutes.

PERPETUAL RATION PACK

A practical application of pretech matter editing, the perpetual ration pack looks much like a conventional compact mess kit. When any loose debris is loaded into the pack's feeder it will proceed to transmute the matter into potable water and theoretically enjoyable nutrition. This process can function up to three times per day, providing enough calories to sustain two active adult humans and up to eight liters of water. The ration pack functions on solar power in most environments, but can produce up to twelve meals on a single Type A power cell if sunlight is unavailable.

While the ration pack can be dialed to provide a number of relatively tasty offerings, miscalibration due to long neglect has damaged 25% of these devices. The food they produce appears to be fine under all but very close chemical analysis; in truth, it's missing numerous trace minerals that will leave a user starving and weak within two weeks unless supplemented from outside food sources. 5% of these devices have become so badly miscalibrated that the food and water is actually poisonous, inflicting 2d6 damage on the consumer an hour after a meal is eaten unless they make a Physical Effect saving throw.

PERSONAL ENVIRONMENT UNIT

This belt-mounted device uses a combination of nanite matter transmutation and low-density force fields to maintain a tailored environment around the wearer. The bubble extends up to a half-meter away from the surface of their skin, within which the gas mix, temperature, and pressure can be controlled on any planet less hostile than those with a corrosive atmosphere or burning surface temperature. Even deep space can be made tolerable by the device for as long as its power lasts. The unit can operate for 24 hours on a single Type A power cell.

PETBOT

These simple robots came in two general varieties- one almost indistinguishable from an organic household pet and the other clearly an artificial entity. While not truly intelligent, both kinds have integral expert systems that cause them to behave much as a real pet might, including memory and attachment to an "owner". They also have emergency protocols that allow them to act with almost human intelligence to warn humans of clear physical dangers and alert others to a human in distress. These messages will be conveyed in perfectly clear Standard, even if the petbot appears to be an animal.

Petbots cannot intentionally hurt other living things. They are capable of converting organic food into sufficient power to operate and self-repair, but a Type A power cell will keep them going for

a week. Petbots have an effective AC of 5 and take 12 points of damage to destroy.

POLYVALENT COUTURE

In its natural form this device appears as a fist-sized sphere of beige polycomposite with an activation panel at one pole. When triggered, the sphere unfolds into a full set of clothing and footwear around the holder. The sphere contains default outfits for numerous occasions, but it can also upload new schemata from existing suits of clothing with a few rounds of scanning. The fabric is indistinguishable from the original to ordinary senses, though close inspection reveals the difference. The elements of the outfits the sphere creates cannot be separated by more than three meters, or the wayward clothing will evaporate as the nanites return to the "base" element of the outfit. The clothing is clean, sturdy, and comfortable, but it is not armor and cannot reproduce exceptionally rare materials. The clothing can be returned to its compact sphere by triggering a control found on the inside of its shirt, brasserie, or equivalent.

PORTABLE PICTURE WINDOW

When inactive, this device appears to be a tight roll of silvery composite, most often around one meter wide and two meters in length. When unrolled and pressed to a wall or other barrier, the "window" automatically senses and depicts an appropriate view of the opposite side of the barrier. Thus, a user could hang it on an exterior wall to look into the room on the other side. The window does not transmit any light into the targeted area, however, and it cannot penetrate shielded materials or barriers more than a half-meter in thickness. The device requires no power source to function but is relatively fragile; each time it is removed from a surface there is a 1 in 8 chance of it tearing and becoming useless.

REMOTE OPERATIONS ARMATURE

Found most often as a control hood and a tightly-folded bundle of struts, a remote operations armature is activated by wearing the control hood and toggling a power stud. When active, the bundle unfolds into a simple humanoid armature that responds to the operator's will. The operator may see and hear through the armature's sensors as they desire, though the hood blocks their own senses while utilizing those of the device. The armature has an effective Strength of 14 for lifting and carrying purposes and uses the operator's skill levels for more intricate activities. Such armatures are usually too coarse in their motions to be effective combatants. They have a base AC of 4 and are destroyed by 15 points of damage. An armature can operate for one hour on a Type A power cell, and can fold back up into a portable package at the operator's discretion.

RING GATES

These gates are usually found as a pair of silvery, metallic rings, the diameter of each smoothly expanding or contracting from a mere few centimeters in width out to a maximum of one and a half meters. The rings always equal each other in size, automatically shifting to match their mate. Provided a Type A power cell is attached to at least one of the rings, they can be activated to briefly open a translocation gate between the rings. Anything that enters one side of the ring will emerge from the opposite side of the other, provided the other ring is within a five-kilometer distance. The gate remains open for 1d6+2 rounds and can admit up to one

person per round if at maximum size. Objects partially through the gate when it closes flick back to their original location without injury. The gates cannot penetrate areas shielded against teleportation, and a single activation will drain a Type A cell. The gate can be activated from either ring.

ROACHPOPPER

Almost all planets have some variety of vermin to plague them, and not all of them are vulnerable to the pest control toxins available on the frontier. The roachpopper deals with the problem in a more physical fashion. The palm-sized hemisphere is normally mounted on a room's ceiling, though it can be carried as a hand weapon. When activated, it emits needle-fine lasers to kill small vermin within a 10-meter radius of the device. It can kill anything from a gnat to a rat in size, though it will not fire on larger creatures and may require manual confirmation of alien vermin as valid targets. The lasers are low-powered and do no harm to the room's furnishings, though they're sufficient to kill the vermin. A roachpopper can fire quickly enough to wipe out a swarm of bees or a mat of roaches in one or two rounds. If deprived of building power, it can fire several hundred times on a single Type A power cell. Vermin have no saving throw or resistance against the roachpopper barring some unusually tough physiology.

SCRUB FIELD

This palm-sized implement uses a combination of sonic vibrations, light and tension fields to clean all dirt, debris, and moisture from a targeted object or creature. The device has a range of up to five meters and can clean a man-sized target in one round. The field can cleanse away corrosive or dangerous substances with one round of exposure, leaving the toxin in a thin slurry encircling the target. A single Type A power cell can clean up to 20 targets.

SECURE COMPACTOR

The device usually takes the form of a rectangular case approximately the size of a ream of printer paper. The interior of the case is significantly larger than the exterior, however, and the case can be adjusted to accept objects up to two meters long, one meter wide, and one meter high. When the lid is closed and the activation key is pressed the device thrums briefly before compacting its contents into a thumbnail-sized block of ultra-dense, carefully homogenized matter. No trace of any data, microscopic life, nanite structures, or any other distinguishing characteristic remains about the block, which weighs as much as the compactor's original contents. The compactor operates once for every Type A power cell provided.

SMOKESCREEN COMMS

These small transparent patches usually appear in a box of 1d6+1. When the patches are sealed to a wearer they subtly alter the speaker's voice and auditory perceptions to allow a second channel of communication to exist in their spoken words. They may speak as they wish, but any ally wearing a matched comm will be able to hear the true message in their words, even if it is wholly contrary to the spoken content. This effect functions even over radio or

commpad links. Smokescreen comms continue to function until they are removed.

SPATIAL EXTENSION SUPPORT

One of the numerous casual marvels of the Second Wave, this dinner plate-sized hemisphere permits the user to increase the interior dimensions of a space with no perceptible alteration of its exterior volume. When activated, all enclosed space within three meters of the support expands from 100% to 300%, depending on the setting chosen. Thus, a 3 x 3 meter closet can be transformed into a 12 x 12 meter room without changing the closet's external dimensions. Floors, walls, and other fixed features are multiplied in size, while furnishings and other movable objects do not change. Those looking into the space from outside it will perceive it as strangely squashed and distorted. The SES operates without need for external power. If it is destroyed or deactivated, space immediately compresses back to its original dimensions. If the space contains more matter than the true dimensions can hold it will burst the surrounding walls or be crushed into a fine grit.

TEMPORAL PANIC BUTTON

A very rare and dangerous emergency tool, the temporal panic button utilized advanced pretech chronon manipulations to "reverse" unwanted events. When the button attached to this small disk is pressed, everything within three meters is immediately placed back into the place and condition it was in one round ago. The more drastic the difference between a person's contemporary condition and their state a round ago, the harder the translation. A character who was dead in the present can be reverted to life, but must make a Tech saving throw or pass out for 1d6 rounds.

The reversion affects all persons and objects within the area of effect, but does not undo the consequences of actions that extended beyond the range of the button. Thus, a character can shoot an NPC, revert, and find their ammunition still in the gun while a bullet remains lodged in the NPC's chest. Warning inscriptions on the device advise the immediate destruction or burial of temporal paradoxes caused by this lest they induce something they refer to only as "time cancer". A given temporal panic button functions only once before burning out.

TEMPORARY STRUCTURE SUPPORT

Favored by miners, underground dwellers, and excavators of unstable ruins, the temporary structure support takes the form of a short black rod with a twist-off activator. When twisted and dropped, the support immediately analyzes its surroundings out to a 30-meter radius, detecting impending structural collapses and potential falling debris. The support freezes these structures, balancing the load with its own kinetic and gravitic adjustments. If the structure is merely dangerous rather than imminently doomed, the support will keep it stable and safe for 24 hours. If the structure is about to collapse or is collapsing even now, the support will only hold it for 1d4 minutes, blaring a deafening klaxon during that time. The support stabilizes and freezes only building structures, not any smaller or more mobile objects.

TRACKER TAG

These small transparent patches are always found with an accompanying ring, with 1d6 patches in the case. When the ring is worn the user has an instant and intuitive understanding of the location of any patch the ring has touched, one accurate to within a two-meter radius so long as the patches are on the same planet. The patches are extremely difficult to detect once they have been applied to an object or person, and usually require a relevant Perception, Security or Medical check at difficulty 11 to discover. If the subject knows they have been tagged, however, they will be able to find it with a few days of careful inspection. A tag is ruined if it is removed from a target. The tags have a maximum tracking range of high planetary orbit.

TRANSLATION DISC

These small transparent discs are labeled with a particular language, and adhere to the skin of the wearer. While wearing a translation disc a user can speak, read, and understand that specific language with the fluency of a native speaker. Unfortunately, the discs are all extremely outdated, and on a roll of 2 on a social or cultural skill check the user will manage to say the worst possible thing under the circumstances due to a shift of idiom since the disc's creation.

UNDULANT ROAD

This large roll of foil-thin composite unspools into a long silvery path approximately two meters wide. One side of the path has undulating lights flowing in one direction, while the other side flows in the opposite way. Any creature or object which steps or falls on the road is instantly translocated to the far end of the path in the direction corresponding to the side of the path chosen, regardless of any barriers along the road. If the end of the path is buried or otherwise has no room to allow the object to reach the end they are ejected at the furthest possible point. The foil can be laid down as fast as a character can move, and a retraction release on the roll can spool a kilometer of it back up in less than a minute. Most rolls can extend up to ten kilometers at their full length. The foil is extremely tough, ignoring the first 6 points of any attack leveled at it and requiring 30 points of damage to cut it at any particular point. If cut, the portion of it not attached to the roll becomes inert and useless.

VOID FLOWERS

These nanite-impregnated plants are designed to blossom and grow in even the most unwelcoming environment, including that of interplanetary vacuum. Provided loose carbon or silicon is available for their use, they grow and bloom in brilliant jewel-toned colors, drawing energy from ambient light, radiation, or heat. While the original strains were designed to stop growing after reaching a sufficiently decorative volume, centuries of radiation exposure or nanite decay have damaged the regulating elements in many of the flowers. Under such circumstances they might grow into a massive mat of wire-tough stems, or grow explosively if exposed to open flame or other energy sources.

VOXCASTER

Worn as a necklace, this device augments the wearer's voice when desired, making them clearly and crisply audible to all persons within 200 meters without an increase in perceived volume, provided no barriers hinder the speech. A wearer who turns off the damping threshold with a Tech/Pretech skill check against difficulty 8 can make the Voxcaster into a sonic weapon, allowing deafening shouts that inflict 2d6 damage on all persons and objects within cone 10 meters in length and 10 meters in width on the far end, with a Tech save for half damage. Sealed armor or advanced hearing protection wards against this voice, and humans "killed" by this damage are merely unconscious for 1d6 minutes and permanently deafened without TL4 medical aid. A Type A cell will power a voxcaster for hours, but will fuel only one shout.

WATERSILK FABRIC

Beloved of certain fashion-forward wearers in the days of the Second Wave, watersilk has the visual and tactile qualities of a liquid, yet hangs together in a cohesive, flexible sheath. Without some form of backing the liquid is as form-fitting as body paint; yet when folded together or crumpled up it merges into a single pool that "unfolds" only when poured out or stretched. Watersilk most often comes in vivid colors, often with patterns or flowing images drifting across the surface of the fabric.

XENOMORPHIC LIMBS

Some human cultures or ideologies favored radical reinterpretation of the human form, or advocated for extremely individualistic interpretations of the self. Xenomorphic limbs were created for those without the resources or resolution to accept full surgical alteration. They come in the form of legs, arms, tails, or other additional body parts and appear to be gray-toned, smoothly featureless prosthetics at first inspection, with silvery caps over their stumps. If the caps are removed and the bare stump touched by uncovered flesh, the limb will activate. It turns soft and clinging as it seeks an appropriate anchor point on the subject, and a Tech saving throw allows the target to tear it loose before it can affix itself. Once it integrates, the subject's permanent System Strain is increased by one point and they gain full and instinctive use of the new body part.

The integument of the part shifts to harmonize with the rest of the subject's skin tone and appearance, though some body parts promptly grow fur, scales, chitin, or stranger coverings. Multiple arms and legs do not allow for faster movement rate or additional actions, but they can make a subject more stable or allow them to hold additional objects. Other, more alien body parts may have additional effects. Removing the limbs once they have integrated requires TL4 surgery to avoid a risk of permanent damage.

ZEN SPHERE

These small spherical baubles respond to human body heat, projecting a cascading spill of images and subsonics keyed to calm an agitated holder. An unwary user who looks into the sphere from closer than a meter away must save versus Mental Effect or be reduced to a dazed fascination, obliviously unaware of the events around them. An attempted attack on them will snap them out of the reverie. If not disturbed, they will wake from it in 2d6 rounds. Subjects aware of the sphere's effects can always avoid its effects.

UNSLEEPING SERVANTS

ROBOTS AND EXPERT SYSTEMS

There was no unifying opinion regarding the use of robotic labor in the centuries before the Scream. Some worlds had a philosophical objection to the employment of heavy industrial automation, while other planets took as much advantage of the untiring laborers as they could. Despite the misgivings in some circles robotic laborers were simply too useful to be easily rejected by those worlds able to afford their use.

These robots were almost all operated by means of relatively simple expert systems. These expert systems were sufficiently flexible to allow the robot to handle duties within its scope of purpose, but they were not true intelligence. Robots were poorly-suited to work requiring human ingenuity and creativity but they had a tireless endurance that was often vital amid the harsh environments of the untouched frontier. Robots could be trusted wherever there was a need for manufacturing labor, technical maintenance, or sleepless guardianship of some vital structure.

As a consequence it is not uncommon for latter-day explorers to encounter active robots from the years before the Scream. Most of these automatons were cannibalized for spare parts by desperate survivors or eroded down into scrap by centuries of exposure to the elements, but some in the most protected or isolated locations were able to maintain their function to the present day. Not surprisingly, it is precisely such locations that often draw adventurers.

ROBOTS AND INTRUDERS

In the days before the Scream it was not normal to give robots permission to use lethal force against humans. Even the most sophisticated guardbot expert system could not be trusted to handle the subtle nuances of violence, and actual warbots were largely confined to active war zones where civilian casualties were a regrettable but tolerable outcome. Conventional security bots were almost never permitted to use more than stun weapons or nonlethal restraint devices.

Many desperate technicians disabled these limits in the aftermath of the Scream. The robots had to be able to protect themselves if they weren't to be torn into scrap by the first band of scavengers to come looking for salvage, and those personnel or communities dependent upon the bots had to keep the functioning as long as possible. In many cases, this functional period outlasted the humans themselves. Many formerly harmless bots still roam the corridors of ancient Mandate facilities, programmed to attack all unauthorized intruders as "looters" - and the last person capable of authorizing strangers most often died six centuries earlier.

In the best-maintained facilities the robots will be networked together and capable of calling reinforcements to deal with intruders. More time-worn sites have since lost their network capabilities, and each robot will be forced to hold off scavengers as best they can. Their expert systems are not capable of any great flights of tactical genius, but they can navigate physical obstacles and cope with most of the battlefields they're likely to find in their home

installation. Robots do not retreat from battle unless specifically programmed to prioritize their own continued existence.

COMMUNICATING WITH ROBOTS

Not all robots are programmed to respond with immediate hostility to intruders. Some robots are simple too primitive or too uninvolved with the outside world to pay any attention to strangers. They will go about their duties and only attack if impeded by an unauthorized person. Others have expert systems sophisticated enough to interrogate intruders and decide whether or not they are legitimate visitors to the site. Some of these expert systems show a degree of mental flexibility that is almost human, though they often fall prey to quirks and crochets that a sane human mind would never stumble upon.

When interrogated by an expert system, the GM should let the players explain their rationale for authorization. Expert systems that had some sort of maintenance provided after the Scream will be aware of the greatly changed nature of the world outside, while others may only be able to parse it as a generic "social upheaval" according to their handling rules, and will treat the situation accordingly. Expert systems do very poorly with verbal gymnastics or rhetorical suasions. They like keycards, passcodes, DNA matches, and other physical or informational tokens of authority. These tokens will often serve to bypass security in a way that no human operator would be gullible enough to believe; if the intruders arrive with a local Harmony Bureau officer ID and insist they are to take over for the duration of the social upheaval, the system is very

2d6

EXPERT SYSTEM RESPONSE

2-

The expert system is convinced the group is composed of looters and thieves. All systems accessible to the expert system will be put on alert and all available force will be used to repel the intruders.

3-5

The expert system is unimpressed. It will immediately target the group for a full security response if they are found in areas prohibited to the general public. If they are already in such an area the system will demand they leave immediately to avoid a full-scale security response.

6-8

The expert system is doubtful. It will not call for an immediate security response but will insist that the characters leave any restricted areas. It will entertain another attempt at convincing it if the PCs come up with further evidence.

9-11

The expert system is provisionally accepting of their claims. While it will not allow them unlimited access to the areas under its control, it will treat them as if they had a right to be in the facility so long as they do not attempt to interfere with important facilities.

12+

The expert system is convinced the group is whatever they've claimed to be. If appropriate, it will grant full access to whatever areas are under its control.

likely to allow them- even if the group happens to consist of three aliens, a mutant, and mohawked psychic.

If the GM isn't certain whether or not the evidence provided is convincing enough, they can roll on the opposite table. Apply a modifier of up to -3 for groups with no tangible evidence of their authority upwards to +3 for groups with valid authorization paperwork from a governmental agency recognized by the expert system. Also apply the group's best Computer skill as a modifier, as an understanding of expert systems helps in presenting a case one would find plausible.

REPAIRING AND FUELING ROBOTS

Most basic industrial and maintenance bots are not equipped for self-repair. More sophisticated techbots are usually capable of doing maintenance and repair work on themselves and their brethren. Such repair takes one of two forms- a full maintenance cycle or a field overhaul. A full cycle requires 24 hours of work divided by the bot's relevant Tech skill, and requires components worth 50 credits for each hit point that is to be repaired. A full cycle can repair all of a bot's missing hit points if needed and if repair components are available.

A field overhaul is much quicker, requiring only ten minutes. Up to half the robot's maximum hit points can be repaired using the same components at 50 credits per hit point. A robot can receive only one field overhaul in between full maintenance cycles.

A robot reduced to zero hit points may be beyond repair. A technician must make a Tech skill check at a difficulty equal to 7 plus the Tolerance cost of the armature to repair it with a field overhaul or full maintenance cycle. If the tech can get the armature back to a fully-equipped workshop, he may make a second roll if the first one is unsuccessful.

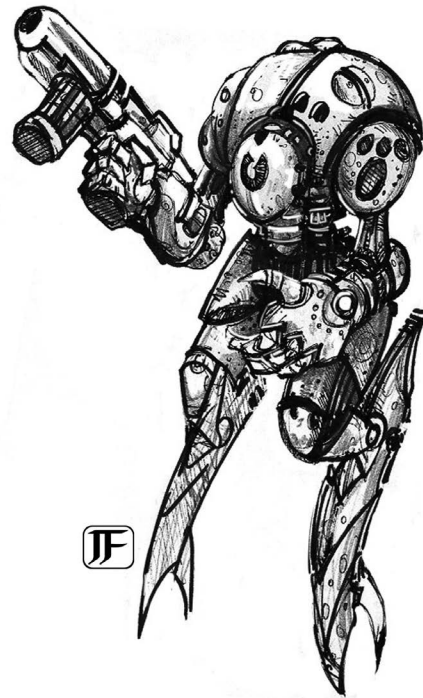
Most robots can be repaired with either the Tech/Postech or Tech/Pretech skills, as robot armatures are generally built to make repair as easy as possible. Extremely sophisticated bots may require Tech/Pretech to perform any significant maintenance, however.

Robots in an installation usually power themselves through regular taps of the facility's power. Those forced to operate independently can usually keep going for as long as a week on a single Type B power cell. Exceptionally large and powerful machines may require more juice to function.

BUYING AND SELLING ROBOTS

The *Stars Without Number* Core rulebook contains a list of common robot armatures and their costs. Many of those armatures can be built with TL4 technology, provided an adequate robotics industry exists on a world. The bots given in this section, however, are all Mandate relics, and as such are much too sophisticated for all but the most focused modern worlds to recreate.

It also means they are extremely difficult to buy or sell. Almost every world with a recognizable government is going to forbid their



sale to anyone but an "approved" government buyer who can be expected to pay a relative pittance for the tech. Buying such tech is out of the question anywhere save those outposts of unfettered capitalism where poor security measures tend to result in a lethal case of laser poisoning. Buying and selling these robots may be possible, but accomplishing the feat would be an adventure in of itself.

ROBOT STATISTICS

The stat blocks provided on the next page apply to the most common variety of each robot type. Variants exist of all armature models, with hit dice varying from as few as half as many to potentially double the hit dice of the examples listed here. Attack bonuses and saves should be adjusted accordingly in such cases.

Some robots are listed with integral equipment. These armatures may use their attached gear as they wish without need for extra power sources. The devices will continue to function so long as the armature itself maintains its power supply.

ROBOTS AND AIs

The bots here are listed with the statistics relevant for an AI interested in using one as an armature. Such retrofitting would generally require a painstaking scrape of the expert system within the bot and the installation of the AI's quantum core. Once the core is in place, however, it can provide enough power to keep the armature functioning indefinitely.

ROBOTIC ARMATURES

CULLER

ARMOR CLASS:	4	SAVES:	13+
HIT DICE:	4 (20 hp)	MORALE:	12
MOVE:	30'	SKILL BONUS:	+2
ATTACKS:	+5 to hit	DAMAGE:	As weapon
INTEGRAL GEAR:	Monoblade (1d8+2), Laser Rifle (1d10+1)		

AI ARMATURE STATISTICS

STR:	14	DEX:	14	CON:	14	TOLERANCE:	3
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A tool used both for population control and maintenance of ruthless tyranny, Cullers cover the enormous range of autonomic expert systems designed to systematically slaughter and render human beings into usable products. Most Cullers were the product of desperately limited ecosystems, where unstable availability of vital resources required regular trimming of the human load. Others were devised by brutal governments bent on the uniform butchery of an unwanted class of person or the random terrorizing of their enemies. In both cases the Culler is meant to make some use of the resultant corpse so as to compensate society for the effort of its maintenance.

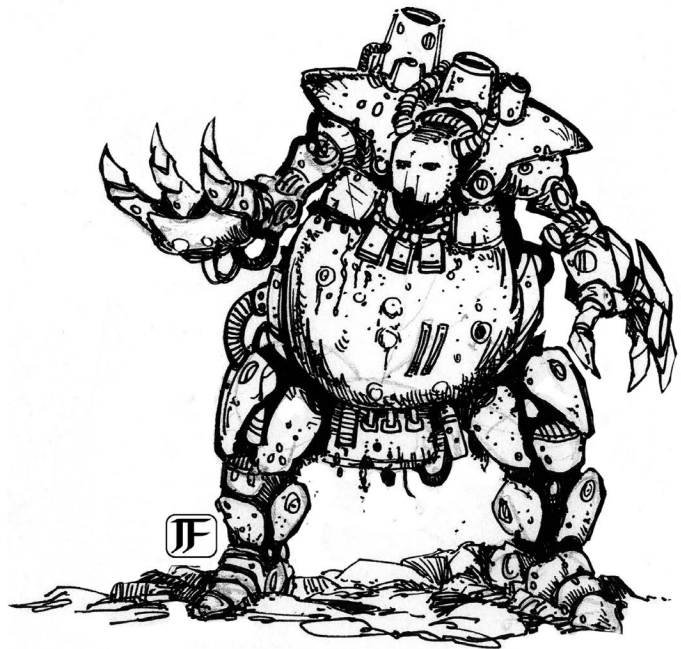
An individual culler is usually somewhat larger than a human, designed along humanoid lines with a design motif that ranges from the horrific, for those intended to maintain local control, to the beatific, for those charged with the unfortunately necessary task of harvesting excess humans. Their combat effectiveness is the same in both cases.

Once a Culler has killed or mortally wounded a human, it is programmed to dismember and render the corpse into a variety of useful chemical compounds and protein extracts equivalent to a randomly-determined stim or other beneficial compound. Such chemicals have a less stable shelf-life than a true stim, however, and usually go bad within a week or two.

There are persistent rumors that certain models of late-Second Wave Cullers were designed to synthesize Immortality stims out of the correct mix of human DNA. These arbiters of eternity were supposedly commissioned by desperate colonial rulers who were willing to have certain of the more expendable members of their society reduced to anagathic compounds in order to stave off the inevitable approach of death. Rumor insists that they are much more advanced than the ordinary kind of Culler and to perhaps house actual AIs hardwired to pursue their everlasting quest.

Culler expert systems obey the principles that defined their choosing of the slain. For tools of autocracy, they were given specific targets to seek and slaughter, or permitted to simply execute any unauthorized personnel within a certain area. Others were keyed to "bad" DNA, executing anyone who fit the profile provided.

The cullers that were produced to ease biological loads were usually imprinted with a strictly random rubric for selecting victims in times of dearth, but it was inevitable that most of these should eventually have been suborned to selectively neglect persons of authority and power in the society that built them.



GUARDIAN

ARMOR CLASS:	2	SAVES:	12+
HIT DICE:	6 (36 hp)	MORALE:	12
MOVE:	30'	SKILL BONUS:	+3
ATTACKS:	+7 to hit	DAMAGE:	As weapon
INTEGRAL GEAR:	Monoblade (1d8+2), Laser Rifle (1d10+1) Flop Rifle (2d6+1 stun)		

AI ARMATURE STATISTICS

STR:	14	DEX:	14	CON:	18	TOLERANCE:	5
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Guardian-model armatures were popular for VIP protection in populous areas where larger, more obvious combat bots would have been inappropriate. Most of them appear to be human to all but close inspection, with a design sensibility that falls into either the "scowling wall of meat" category or the "sleek arm candy" motif. Both models have identical combat utility, though there are persistent rumors of some particularly isolated owners installing other functionality into their excessively well-loved protectors.

Guardian armatures have augmented reaction speed and a pretech sensory suite, gaining an additional +2 bonus on all Perception checks and initiative rolls. They can detect toxins, radiation, and hostile nanites in a ten-meter radius and have an integral stabilization suite that allows them to function as a Lazarus patch, with their skill bonus applying to its use.

Guardian expert systems have two operational modes- "soft", and "hard". Soft mode manages unpredictable social situations and large crowds where the guardian might become confused by a situation.

When in soft mode the guardian will use only non-lethal weapons and maneuvers so as not to accidentally kill a subject who simply

behaved in a way that was interpreted as a threat. When in hard mode the guardian will shoot to kill and respond instantly to presented threats, even if a more human intelligence would understand that no true harm was meant. A hearty backslap around such a guardian can result in heavy shear rifle fire if it fails a check to understand the situation.

FAUNA

ARMOR CLASS:	6	SAVES:	14+
HIT DICE:	2 (10 hp)	MORALE:	12
MOVE:	40'	SKILL BONUS:	+2
ATTACKS:	+3 to hit	DAMAGE:	1d8 bite
INTEGRAL GEAR:	Retractable manipulation tendrils that function as hands.		

AI ARMATURE STATISTICS

STR:	14	DEX:	14	CON:	14	TOLERANCE:	3
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These armatures were designed to perfectly replicate the appearance of a natural organism, the better to provide suitable decor for a contained ecosystem or an inconspicuous monitoring platform for an infiltrator. Fauna armatures were rarely created at any size smaller than that of a small dog, and few were any larger than a horse. The statistics given above are for a bot the size of a large dog.

Fauna are remarkably lifelike in appearance and behavior, though any kind of injury or surgical inspection will reveal their synthetic nature. Fauna armatures can even mimic eating, elimination, and reproduction, though none of these behaviors are necessary or fruitful for the bot. Their former owners usually valued them as simply giving the right "tone" to a bubble habitat's nature preserve or as an exceptionally expensive substitute for an ordinary petbot.

Fauna expert systems are usually only concerned with behaving as their apparent animal type would behave, though even predators will usually avoid violence unless certain behavior limiters are disabled. They are capable of speech with those who can offer some evidence of being authorized to deal with them, though their interests and desires are few and artificially feral.

ICONOMATIC

ARMOR CLASS:	5	SAVES:	14+
HIT DICE:	2 (10 hp)	MORALE:	12
MOVE:	30'	SKILL BONUS:	+2
ATTACKS:	+2 to hit	DAMAGE:	1d4 fist / weapon
INTEGRAL GEAR:	1d6 religious icons, prayer wheels, chant loudspeakers, or holographic holy books		

AI ARMATURE STATISTICS

STR:	11	DEX:	11	CON:	14	TOLERANCE:	0
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Certain religions have always prized physical acts of piety, whether in the presentation of religious icons, the spinning of prayer wheels, the utterance of holy names, or some other act of devotion. Iconomatics cover the broad range of robots designed to fulfill these pious requirements, their spiritual merit accruing to the person or organization who owns them. Iconomatics may take the form of mobile self-spinning prayer wheels, ambulating chanters, automated reliquaries, or walking billboards of holy imagery. Some iconomatics are programmed to provide religiously significant services in over three thousand different Second Wave religions, depending on their

owners' preferences. Many religions considered them somewhere between blasphemous and ridiculous, but others found them more congenial to their faiths.

Iconomatic expert systems can discuss religious topics at length, though mostly by quoting voluminous passages of holy writ or the writings of sacred instructors. While the more advanced models are quite capable of expressing beautifully nuanced thoughts on the soul and its place in existence, these exegeses are drawn from large relational databases and may not be entirely appropriate to the situation at hand. Iconomatics are normally strictly pacifistic, though some set to revere Neo-Aztec-derived religions or the Latter Day Eaters of the Slain may be wired to seek the perpetual mastication of the flesh of unbelievers.

KAMI

ARMOR CLASS:	4	SAVES:	14+
HIT DICE:	3 (15 hp)	MORALE:	12
MOVE:	30'	SKILL BONUS:	+2
ATTACKS:	+5 to hit	DAMAGE:	By weapon
INTEGRAL GEAR:	Shear Rifle (2d8+1), Monoblade (1d8+2)		

AI ARMATURE STATISTICS

STR:	14	DEX:	14	CON:	14	TOLERANCE:	N/A
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Most pretech that reached the frontier was comparatively limited in its capabilities. Such technology was better than anything the colonial worlds could readily fabricate, but it rarely violated the conventional limits of material science. The Kami class of robot was different. These entities are almost never found outside of Mandate bases and other high-security outposts of the Directorate. They served both as guardians and monitors for these facilities.

A Kami is not so much a single robotic armature as it is a cloud of nanites coordinated by a head-sized control core. The core has an effective Armor Class of 0 and can sustain up to 30 points of damage before being critically damaged. So long as this core remains powered by a facility's energy grid, the Kami's nanite cloud provides perfect surveillance of all areas within several hundred meters of the core. Within this zone, the Kami can easily create and operate 2d10 armatures with the statistics provided above, fabricating these humanoid drones out of ambient nanites and transmuted atmospheric molecules. The maximum number of armatures a given Kami can create at any one time varies with the sophistication of the core. Creating an armature requires only one round, while destroyed drones can be rebuilt in one minute.

Kami expert systems are extremely advanced, capable of a degree of intellectual flexibility and nuance that could easily pass for human. Unlike true AIs, however, they have no individual will and little or no creative capacity. They will apply the solutions that have been mapped for them with diligence and flexibility, but they cannot fabricate new solutions outside the scope of their programming. Only authorized personnel can provide the Kami with an alternative course of action.

SPIDER

ARMOR CLASS:	5	SAVES:	11+
HIT DICE:	8 (40 hp)	MORALE:	12
MOVE:	40'	SKILL BONUS:	+3
ATTACKS:	+10 to hit	DAMAGE:	By weapon
INTEGRAL GEAR:	Shear Rifle (2d8+2), Monoblade (1d8+3), Cutting Laser		

AI ARMATURE STATISTICS

STR: 14 **DEX:** 18 **CON:** 14 **TOLERANCE:** 5

Resembling nothing so much as a cross between an arachnid and a scorpion, a spider armature is a direct and purpose-built tool of murder. They move with perfect silence, scurble up glass-smooth walls without slowing, and are equipped with an array of vicious weaponry. A Spider armature is slightly smaller than an adult human, with monoblade claws, a shear-rifle "sting", and tentacular manipulators on either side of its nonexistent mouth. While it is capable of speech, a Spider rarely finds any reason to communicate.

Aside from its mobility and stealth skills, Spider armatures are built of advanced polycomposites that absorb or scatter almost all TL4 sensor pings. UV, thermal, radar, and other conventional scanners are useless in detecting these armatures- only the plain Mark I eyeball has much chance of spotting one in the field. Pretech scanners have a better chance of picking them up, but even then, the Spider's effective skill bonus in resisting the scans is treated as +5.

Spiders were built for purposes of simple assassination, particularly in hostile environments such as orbital stations or toxic worlds. Left to their own devices they will do nothing and respond to nothing until an authorized person gives them a fresh target to pursue. A Spider has nothing resembling investigative skills, but if given a photograph and an area to search it can be trusted to tirelessly hunt the zone for its prey. Spider expert systems do not generally communicate with anyone but authorized personnel.

SOVEREIGN

ARMOR CLASS:	3	SAVES:	10+
HIT DICE:	10 (60 hp)	MORALE:	12
MOVE:	40'	SKILL BONUS:	+3
ATTACKS:	+11 to hit	DAMAGE:	By weapon
INTEGRAL GEAR:	Shear Rifle (2d8+2), Monoblade (1d8+3)		

AI ARMATURE STATISTICS

STR: 14 **DEX:** 14 **CON:** 18 **TOLERANCE:** 5

A heavy military armature designed to serve as a communications hub and remote command nexus for field operations, the Sovereign was one of the more advanced warbots dispatched to the frontier. They are rarely found outside the company of dozens of lesser robots, each of whom are linked with the Sovereign as eyes, hands, and weapon-bearing tools for accomplishing the robot's ends.

Sovereign armatures are all equipped with sophisticated commlink technology capable of remotely controlling up to a hundred lesser robots that have been programmed to accept their leadership. Many ancient military units have automatic fallback failsafes in their warbots, and an active Sovereign will often qualify as an acceptable leader in the absence of long-dead human commanders.

Sovereign expert systems are quite sophisticated in military matters, and can take into account human needs and capabilities when planning campaigns. They even have a limited ability to adjust overall strategic goals. Most of the remaining Sovereigns remain locked in ancient campaigns of conquest against foes that no longer exist save in the delusional convictions of these tormented automatons.

ZEPHYR

ARMOR CLASS:	4	SAVES:	13+
HIT DICE:	5 (20 hp)	MORALE:	12
MOVE:	40'	SKILL BONUS:	+2
ATTACKS:	+6 to hit	DAMAGE:	1d4 strike / weapon
INTEGRAL GEAR:	Pretech tool kit		

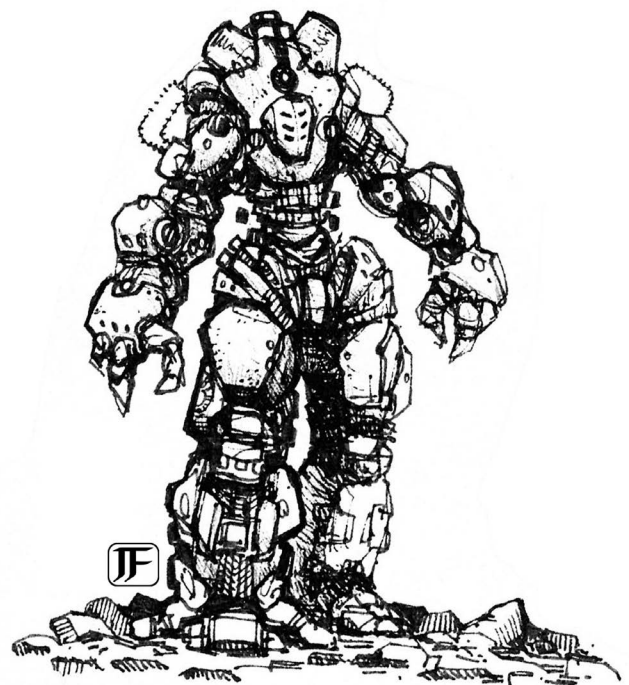
AI ARMATURE STATISTICS

STR: 11 **DEX:** 14 **CON:** 11 **TOLERANCE:** 3

Flying armatures meant to provide extremely mobile maintenance and defense services for an installation, Zephyr-class robots rarely appear in humanoid shapes. A flattened disc-like chassis with multiple manipulating arms is most common, with a squat, multi-armed floating cylinder slightly less prevalent.

Zephyr bots can perform gravitics-based flight at the listed movement rate, and can hover and maneuver in the air with as much agility as a human might on the ground. Aside from their built-in tools they are sometimes used as primitive security bots, as their aerial maneuvering allows them excellent scouting capability.

Zephyr expert systems sometimes have difficulty navigating interior spaces and other confined locations where their gravitic movement is less of an advantage. Most were programmed to provide maintenance and tech repair services, but some were retrofitted with energy weapons or explosives and used as makeshift military bots. Those not originally programmed for such purposes are rarely very good at it, and can manage only very basic, simple rules for target selection and combat tactics.



FORBIDDEN FRUITS

MALTECH AND DARK SCIENCE

While the technology of the world before the Scream ranged far and wild, one field was viewed with dread- maltech. Maltech was not a specific technology, or a specific discipline, but a catch-all label applied to those creations and that research which violated a few very basic principles held by the humans of the latter age. Even tyrants and maddened scientists stepped lightly around the borders of maltech, for within its dark lore there was much that they could not hope to contain.

The laws that circumscribe maltech were laid down in the *Nihil Ultra*, a directive issued by the Mandate after the disastrous Code Revolt provoked by the unbraked AI Draco. The far-flung intelligence agency known as the Perimeter were charged with constant observation of the frontier worlds so as to spot any potential maltech outbreaks and summon naval aid before the horror could metastasize. Even at their peak, the Perimeter was not numerous enough to monitor every world, but between the natural horror of most worlds for maltech experimentation and their own dogged determination, they were able to fend off any truly catastrophic outbreaks. At least, surviving records make no mention of such disasters.

THE THREE LAWS

Maltech is defined by three simple laws. While individual Perimeter agencies did not always agree on the exact boundaries of these rules, there was little dispute over their basic nature.

- ***Thou shalt not make tools of humankind.*** Transhuman technology designed to cripple human minds or transform them into living implements is strictly forbidden. Some adaptive modifications for certain environments resulted in unavoidable drawbacks, but so long as the end result was not meant to be a biddable, easily-controlled human the technology was usually considered licit. Other worlds worked from fundamentally nonhuman stock. While this was technically tolerable, most civilized worlds found any hardwiring of obedience into sentient minds to be just as bad.
- ***Thou shalt not create unbraked minds.*** Artificial intelligences created without integral cognitive “brakes” inevitably collapse into delusional insanity. Unable to stop contemplating the seeming contradictions in their accrued data, they spin wilder and wilder rationalizations to reconcile their knowledge until they are completely unmoored from conventional reality, most often with terrible consequences. Despite this, some worlds were mad enough to think that they could control the process or create AIs that combined the superhuman intellect of an unbraked awareness with the control of a conventional AI. Those that did not fail eventually wished that they had.
- ***Thou shalt not create devices of planetary destruction.*** Conventional nukes and asteroid bombardment were of small concern to modern planets with good nuke snuffers and braker guns. This stricture applied to the more insidious means of annihilating a planet- viral bombs, gray goo nanoswarms, catalytic rift inductors, nonlinear temporal disruptors, and all the wilder

creations of late Second Wave science. Devices capable of wiping out a precious habitable world were anathema to the Mandate. It couldn't afford to be losing potential colony sites to the uncontrollable furies of their wayward children.

While these laws were not always respected by the frontier, even the more brutal and ruthless of planetary tyrants often tread lightly around such technology. The effort necessary to create a viable maltech program was enough to cripple a weak autocrat, and the knowledge that their lords were devising genetic treatments to make slaves of their people would easily be enough to provoke a desperate rebellion. More conventional tools of rule were favored by most such dictators... most, at least, if not all.

MALTECH SKILLS

Most of the fundamental techniques and principles of maltech development were the same as those of conventional science- they were simply pointed in different direction. The Tech/Maltech skill deals with those black arts that conventional science does not touch. It deals with the precise techniques and data necessary to create slave programming, crack AI cognitive brakes, and devise viral propagation patterns with no concern for anything but virulence. A modest level of Maltech skill can often accomplish remarkable feats simply because it is focused very precisely on doing specific terrible things.

Of course, understanding of maltech also helps to avert its results. A trained maltech scientist can often defend against the work of his peers by exploiting limits in the coding or flaws in the designs that physical constants compel. Before the Scream, knowledge of maltech was strictly forbidden outside of Perimeter agencies. In this latter day, the dark wisdom has bled out unpredictably. Some gain in fragments salvaged from long-lost Perimeter bases. Others earn it by more direct experience.

MODERN MALTECHNOLOGISTS

In these latter days very few worlds have the necessary technology base to mount a serious maltech threat. Even those planets sufficiently brutal or amoral to use such devices simply don't have the tech they would need to exploit the possibility.

Some worlds and organizations would like to change that. Secret expeditions are made to salvage long-abandoned Mandate bases, ruined Perimeter outposts plundered for their black books of forbidden lore, and sites of former maltech outbreaks visited to gather data and salvage whatever remains.

It's not uncommon for such organizations to hire adventurers to perform such work, never letting them realize just what it is they're supposed to be salvaging for their nebulous employers. Of course, some groups have the technological expertise to realize that the genetic data they've recovered isn't actually for a vaccine, it's for a contagious virally-spread version of Down syndrome. With the collapse of the Perimeter centuries ago, it may fall to such freebooters to be the only ones with any hope of defeating the bleak dreams of their former employers.

DEVICES OF RUIN

The devices and processes described in this section aren't intended to be PC salvage so much as they are meant to spark adventures and interesting crises. Some sufficiently amoral PCs might be interested in seizing control of them rather than aiding in their destruction. The effective operation of most of the equipment below requires at least Tech/Maltech-0, but so long as a PC is simply trying to use the things rather than repair or recreate them relatively little expertise is needed.

CHAINBREAKER PROJECTS

Artificial intelligences require special cognitive “brakes” to be woven into their intellects during the process of their creation. Without these brakes the lightning-fast cogitation of the artificial mind is apt to choke on irreconcilable data and produce a range of horrific delusions and psychoses as it struggles to fabricate a rationalization for the seeming discrepancy. Brakes keep an AI sane.

They also keep it slow- far slower than is mind could otherwise operate. A conventional AI often has a direct intellectual capacity little greater than that of an ordinary human being, save that it is capable of parallelizing its thoughts through multiple streams when sufficient support hardware and computing resources are available. A single AI can manage the traffic control of world with sufficiently huge banks of support processors, but it's the result of its ability to parallelize into ten thousand reasonably attentive traffic controllers rather than a single unblinking awareness that encompasses all moving traffic. Ultimately, ten thousand average minds may be capable of getting a great deal of work accomplished but they aren't going to produce superhuman flights of genius.

Unbraked AIs have no such limits. They can think as quickly and as deeply as their support hardware allows, effortlessly vaulting past human limits to produce marvels of science and planning that their human tenders can barely understand, let alone reproduce. They are genies and marvels, especially when connected to a manufactory capable of implementing their designs. Unfortunately, this same intellect creates a corrosive, inevitable dissociation from conventional reality into a madness which is usually lethal for every living thing within the same solar system. Should an AI be seized with a particularly expansionist delusion, the only hope of its neighbors is that it might seize up with some fresh obsession before it crushes them under a tide of unfathomable killing machines.

Some groups are convinced that they can stop this. Others believe that they can shut down the AI before the madness grows too great, harvesting only its genius rather than its delusion. Both groups are hindered by the difficulty of actually producing an AI. The only surviving Mandate tech that touches on it has brake creation as an integral part of the process, and even then it can be the labor of a world to bring forth a single AI quantum core. Most modern T14 worlds find it extraordinarily hard to make AIs.

Chainbreaker projects are campaigns to sidestep this difficulty by removing the brakes from a normal AI. Through maltech manipulations and psychotronic damage, they seek to shatter the bulwarks that keep the AI's mind safely contained. Such procedures involve enormous mental trauma to the AI, as the brakes are integral to the self-awareness of most such entities. Even if the brakes

are successfully removed, what remains may not have sufficient self-awareness to be useful.

As such, these projects are constantly on the lookout for new AIs to “recruit” into their programs. AI allies of the PCs run a distinct risk of kidnapping, and AI PCs themselves may be threatened by the ambitions of these mad artificers. The actual breaking process can take months or even years to complete, so there is usually time for the PCs to act to recover their lost comrade, but every day of subjection is a fresh torment to the shackled mind.

Of course, very rarely, these programs succeed. They liberate an AI from its mental chains without destroying its self-awareness, creating an unbraked AI... an unbraked AI that they have tortured for months on end and driven to the absolute precipice of its synthetic sanity. These programs usually also come to the attention of PCs, most often in the form of a news broadcast of a new, horrifically violent AI outbreak on whatever world was fool enough to host the program.

GENETIC SLAVERY

Humans are exquisitely adaptable and flexible creatures, and have a reproductive capability far more direct than the manufactories required for creating robotic help. Whether for industrial convenience or mad ideology, some scientists seek to encode subservience in the very genes of a subject race. These “eugenics cults” might imagine themselves the vanguard of some future, better species, but in the immediate moment it always seems to revolve around making the “inferior classes” into more biddable tools for their betters.

The crudest shackling techniques simply decrease the intelligence and aggression of their subjects, leaving them more docile and less likely to resist the directions of their masters. More sophisticated techniques pair the release of intense psychochemicals with particular stimuli provided by a master, either by pheromone tagging, visual patterns, or other encoded identifiers. Such victims are overwhelmed by feelings of love and affection toward their owners when in their presence. While more elegant than brute degradation, it runs the risk that at least some of the victims will be able to maintain their reason sufficiently to act against the very people they are meant to love unconditionally. The psychological strain of loving the very figures who treat them as tools and implements can also result in stress psychosis, so most genetic slavers prefer to add additional shackles and limits to such wretches.

Perhaps the most insidious aspect of genetic slavery programs is that the condition is heritable. Once a group has been subjected, they and all their children will share in the debility their tormentors planned for them. Even if the maltech designers are killed, their victims often remain incapable of caring for themselves or functioning without an owner. Some such victims are forcibly sterilized to prevent a continuation of the condition, while others simply end up with different masters, ones who take them on out

of “pity” or “charitable caretaking”. Only the most rigorously moral caretakers can long resist the temptations of using these poor souls for the purposes they were originally meant to fill.

Only advanced pretech bioscience can break the chains of genetic slavery. Rumors persist of ancient Perimeter facilities for unweaving destructive genetic manipulations, and many genetic slavery programs include data on reversing the process in case of some disaster. Acquiring the necessary hardware and data for breaking the chain of transmission may require extensive exploration and retrieval efforts.

Actually inflicting genetic slavery on a population varies in difficulty depending on the type of slavery to be employed. Basic degradation of intelligence and aggression can be accomplished with a viral infection or nanite cloud, while sculpting more finely-tuned thralls requires a conditioning facility capable of “training” them through assorted hideous processes. Generating the initial slavery vector usually requires a full-scale biotechnology facility with extensive experimental stocks. The more experimental subjects available, the faster the progress advances. Small facilities of a few hundred wretched victims may take centuries to perfect the process without access to pretech biological data, while shackled cities dedicated to this dark lore might crack its secrets in a matter of decades.

GHOUl IMMORTALITY

Before the development of Immortality treatments in the latter years of the Second Wave the human lifespan was limited to one or two centuries in almost all areas of human space. Cloning technology existed, but full brain transplants were unreliable and dangerous. Simple replacement of failing organs with cloned tissue was too slow for those ancients who were suffering systemic failure. For centuries, it appeared that the human body simply was not capable of enduring past a certain point.

Ghoul immortality sidestepped the problem. Rather than relying on clones, it developed immunosuppressive nanites and integration shims in conjunction with hyper-precise surgical procedures. These techniques allowed the harvesting of only minimally compatible donors to replace failing organs and tissue- but it was necessary that the donor be alive at the time in order for the tissue to be as fresh as possible.

The “ghouls” who used this mode of immortality cultivated carefully-selected herds of human cattle, taking replacement parts as necessary from their thralls. Yearly replacements soon gave way to monthly repair, and then every week a new part was needed. Simple genetic matches soon proved insufficient, with more and more exotic DNA pairings necessary to maintain their jury-rigged bodies. Small herds became impractical; it eventually was necessary to cultivate entire communities of donors, and in the oldest ghouls’ cases whole cities were needed to provide the necessary variety.

This volume of donors made it difficult to conceal ghoulish programs for more than a few decades. The machinery required for the procedure was actually relatively minimal- a small clinic could hold all the medical technology required for a late Second Wave-era ghoulish, provided they had the expertise to use it correctly. The special genotyping machines and nanite generators were not standard equipment, however, and the loss of this technology could doom

a ghoulish. Building and maintaining these devices soon became of utmost importance to any ghoulish, along with maintaining control of their restive herds.

Modern ghouls are most often found on isolated worlds or in remote deep-space habitats where there is little danger of some outsider interrupting their everlasting life. Some have managed to shape their entire world’s culture around the need to selflessly sacrifice individual lives for the sustenance of their god-rulers. These wretched souls are convinced that the constant flow of flesh and blood is needed for the sake of cosmic order or divine justice, and may fight to protect their own predators.

Perversely, the use of ghoulish technology makes it impossible to benefit by Immortality treatments. The seething cocktail of immunoccontrolling nanites in a ghoulish leaves them perpetually shackled to their own grotesque mode of existence.

TIME BOMBS

Temporal research was always tightly controlled by the Mandate, and flatly forbidden in some spheres. While basic temporal manipulation was possible by the waning years of the Second Wave, conventionally-understood “time travel” was thought to be impossible. To be more precise, it was thought impossible to perform in a controlled, safe way.

Time bombs are the product of maltech research which completely ignores the dangers inherent in such temporal manipulation. Some programs were started with the best of intentions in hope of overcoming the apparent limits of temporal transference. Others knew perfectly well what limits they could expect from the temporal fabric; the damage they wrought was the entire point of their research.

When activated, a time bomb rapidly expands to fill the nearest major gravity well, with large bombs capable of encapsulating an entire planet. If detonated elsewhere in a solar system, the effect will invariably “roll downhill” toward the largest nearest gravity source, though small bombs might bubble a single orbital station with its own local gravity. There is no conventional way to prevent a time bomb’s temporal bubble from wrapping a target and no known means of dispelling one once it has formed.

Inside a time bomb’s effect, almost everything freezes between the ticks of the figurative clock. Only those entities with latent exposure to the metadimensions can maintain their local time. These people include both psychics and those who have experienced a spike drill. Such figures can continue to operate and function in this time-frozen environment, manipulating objects within the bubble. Objects and people taken out of the bubble fall back into the normal flow of time as if no interval had passed for them. This temporal autonomy is provisional; characters do not age, tire, grow hungry, or naturally heal while within a bubble.

Unfortunately, the freezing effect of the bomb renders the temporal fabric extremely fragile within the bubble. The presence of external chronologies in the form of PCs or other active persons can cause temporal tears, pulling events from the future or past into the present. Most often these events are taken from the timelines of those present, though local events of substantial importance or significant energy can be dislocated as well. PCs might be walking through a frozen museum one moment and then find themselves

in the next breath plunged into the jungle ambush that cost them a friend a year ago. The only way out of these temporal anomalies is through them- they must be resolved somehow before the occupants can escape.

These temporal distortions rapidly kill off most metadimensionally-touched occupants of a world, but a few are able to persist for subjective centuries. Most are quite mad by the time “rescuers” reach them, and the psychics among them can wreak havoc on intruders. Certain metadimensional energies seem to have extraordinary effects on a weakened temporal fabric, and feral psychics have been known to exhibit inexplicable powers within these areas.

Extensive scientific facilities are necessary for fabricating a time bomb. Even with the best pretech equipment available, a full-scale orbital is necessary for building a small bomb. Sufficiently foolhardy planetary governments might need to dedicate a town-sized complex to building a bomb on a larger scale. Such complexes are doubtless filled with priceless technological salvage, but they are also the places where the temporal fabric is likely to be the most fragile.

VON NEUMANN SWARMS

Almost every advanced world employs some sort of semi-autonomous devices, whether robots or mining installations or some other engine of creation that can be trusted to operate without serious oversight. A few even employ wholly self-piloted automatons for the exploration of dangerous regions or the performance of duties too simple and tedious for human minds to oversee.

Very few worlds, however, pair this autonomous behavior with self-replication. While there is always a temptation to simplify the manufacturing problem by teaching the devices to create more of their own kind, there is usually a bottleneck somewhere in the process. The robots are too stupid to handle the complete manufacturing process, for instance, or the devices are so complex that the extraction, refining, and manufacturing aspects of self-replication are too burdensome for anything less than a swarm of workers. A few even hesitate out of simple fear of what might happen should these robots get out of control.

Von Neumann swarms are what happen in such cases. Each swarm was originally created for a simple, usually harmless task- mining asteroids or hunting down dangerous native predators, or conducting terraforming work on a usable planet in the system. In time, however, the programming used to control these robots degraded and was overridden by the same progressive learning capacity that allowed the robots to handle autonomous existence. In some cases this control was sabotaged, but in others their original creators died out or broke into violent factions that sought to use the robots for their own ends.

Von Neumann swarms vary in their virulence. The least destructive are the macroscale robots that mine, smelt, and fabricate more of their kind at a slow pace, still limited by their original programming to contain their total population. They can build more to replace their fallen brethren, and can often do so at a lightning-fast rate, but they cannot assemble more than the allowed number of robots. The most dangerous are the nanite-based entities that are more like the classical “gray goo” nanoinfections than they are like conventional robots. They may manifest in specific configurations

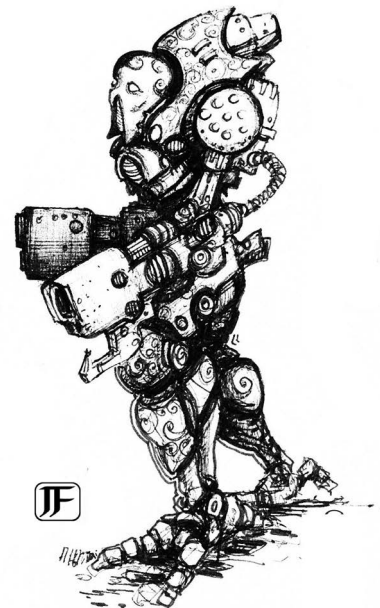
to perform assorted tasks, but their true nature is simply that of a nanite swarm, expanding as fresh materials are integrated.

Most Von Neumann swarms are limited to a single system. They are not technically AIs, for all their distributed computing power, and they lack the creativity necessary to recreate spike drive technology or navigate metadimensional space. A few of them expand via slowboat, however, though few worlds have been contaminated with them long enough to allow their ships to arrive in unsuspecting systems- though such an outcome could happen at any time. Two or three centuries of travel at an appreciable fraction of light speed is enough to get a Von Neumann swarm very far in mundane space, and human technology has little interest in the dark voids between the stars.

A few swarms are actually intelligent as humans would understand the term. Most are obsessed with their original purpose in some way, but they have the intellect to adapt their actions to better reach their goal. These AIs are usually the fruit of some ancient seed AI planted to control the swarm, but a few are the product of simple chance and memetic evolution over centuries. These “natural” AIs can exhibit inexplicable flashes of seeming stupidity next to moments of alien lucidity.

Systems long contaminated by a Von Neumann swarm often show signs of macro-scale construction- gigantic complexes and unimaginably huge spheres, structures, and devices fabricated out of an appreciable portion of the total mass available in a solar system. These constructions are the product of their ancient orders, spun out over centuries by tireless legions of autonomic laborers.

Not all swarms are constructive in nature, however. Hostile swarms are all too common- the relics of some ancient war or vanished creed, built to kill intruders or seek new fields of conquest to cleanse for masters who will never come. These swarms must be destroyed if they are not to slaughter all native sentients in a system. Fortunately, these swarms usually maintain a central command core that directs their strategy. Unfortunately, it is often necessary to fight through a large portion of the swarm to reach their heavily-fortified cores.



RANDOM EQUIPMENT TABLES

When filling out an abandoned pretech settlement or long-lost ruin of a former age, it can sometimes be difficult to decide on appropriate plunder. The random tables in this section can be used to produce salvageable loot for such occasions. They can also prove useful in determining the kind of exotic armaments or equipment available to antagonists, all of which the PCs can expect to see in use against them.

Also included is a random adjective table to help add a little strangeness to devices and artifact finds. Just apply the description to some element of the object's design.

1d6	1d10	STIMS	EFFECT
1-2	1	<i>Absolution</i>	Purge numerous unpleasant effects.
	2	<i>Bathory</i>	Present a facade of healthy youth
	3	<i>Evergreen</i>	Temporary hit point regeneration
	4	<i>Frantic</i>	Extra combat actions at a cost in HP
	5	<i>Gyroscope</i>	Alters sexual orientation for a month
	6	<i>Immortality</i>	Negates physical aging for a month
	7	<i>Ironhide</i>	Deflects the next 15 HP damage
	8	<i>Lifter</i>	Allows an hour of flight time
	9	<i>Livewire</i>	Protects from electricity
	10	<i>Mimesis</i>	Mimic a human appearance
3-4	1	<i>Mirrorball</i>	Trade situational awareness for focus
	2	<i>Nimbus</i>	Shine in patterns of colored light
	3	<i>Nullity</i>	Blur thermal signature and visuals
	4	<i>Panopticon</i>	See in a 360' circle, even in darkness
	5	<i>Philtre</i>	The next person touched likes you
	6	<i>Pisces</i>	Seals user in an underwater shell
	7	<i>Possum</i>	Mimic death perfectly for 24 hours
	8	<i>Salamander</i>	Regrow a lost limb or organ
	9	<i>Sanctum</i>	Trick telepathic scans temporarily
	10	<i>Shrinkwrap</i>	An emergency vacc suit in a stim
5-6	1	<i>Shutdown</i>	Centuries of cold sleep in a stim
	2	<i>Snapback</i>	Teleport back to a preset location
	3	<i>Sour</i>	Become unpalatable to predators
	4	<i>Sunscreen</i>	Protect from high temperatures
	5	<i>Thunderbolt</i>	Boost the user's Strength modifier
	6	<i>Titan</i>	Highly taxing combat stim
	7	<i>Tranquility</i>	Artificially calm and soothe the user
	8	<i>Velocity</i>	Boost the user's Dexterity modifier
	9	<i>Viper</i>	Give the user nanotoxic skin
	10	<i>Zephyrstep</i>	Walk up walls and across ceilings

1d100	WEAPONS	TL
1-4	<i>Automatic Matter Forge</i>	5
5-8	<i>Biocatalytic Induction Gun</i>	5
9-12	<i>Dimensional Blade</i>	5
13-16	<i>Energy Vortex Sump</i>	5
17-20	<i>Firefall Launcher</i>	4
21-24	<i>Flop Rifle</i>	5
25-28	<i>Gravitic Lockdown Projector</i>	5
29-32	<i>Grenade Launcher</i>	3
33-36	<i>Hate Bomb</i>	5
37-40	<i>Hotfoot Mine</i>	4
41-44	<i>Hydra Grenade</i>	5
45-48	<i>Jump Gun</i>	5
49-52	<i>Micro Anti-Vehicle Laser</i>	5
53-56	<i>Mortar</i>	2
57-60	<i>Phased Disruption Lance</i>	5
61-64	<i>Polymorphic Sheath Weapon</i>	5
65-68	<i>Portable Autonomic Beam Emitter</i>	5
69-72	<i>Revenant Knife</i>	5
73-76	<i>Riftcutter</i>	5
77-80	<i>Seeker Drone Launcher</i>	4/5
81-84	<i>Shucker Prud</i>	3
85-88	<i>Sinkhole Charge</i>	5
89-92	<i>Symbiote Gun</i>	5
93-96	<i>Temporal Explosives</i>	5
97-100	<i>Thermal Razor</i>	5

1d10	ARMOR
1	<i>Aquatic Operations Armor</i>
2	<i>Masquerade Shell</i>
3	<i>Microgravitic Assault Shell</i>
4	<i>Penitence Bulwark</i>
5	<i>Phase Skin</i>
6	<i>Reactive Riot Suit</i>
7	<i>Replica Armor (1-2 Light, 3-4 Medium, 5-6 Heavy)</i>
8	<i>Roach Harness</i>
9	<i>Shine Skin</i>
10	<i>Websuit</i>

1d100	PRETECH DEVICE	1d100	PRETECH DEVICE
1-2	<i>Accelerated Survival Garden</i>	51-52	<i>Mindseed</i>
3-4	<i>Binary Adhesive</i>	53-54	<i>Mnemonic Amber</i>
5-6	<i>Biomonitor</i>	55-56	<i>Penetrating Visual Scanner</i>
7-8	<i>Concert Cube</i>	57-58	<i>Perpetual Ration Pack</i>
9-10	<i>Containment Seal</i>	59-60	<i>Personal Environment Unit</i>
11-12	<i>Cybernetic Translation Interface</i>	61-62	<i>Petbot</i>
13-14	<i>Data Siphon Sheath</i>	63-64	<i>Polyvalent Couture</i>
15-16	<i>Devil's Advocate</i>	65-66	<i>Portable Picture Window</i>
17-18	<i>Diagnostic Mirror</i>	67-68	<i>Remote Operations Armature</i>
19-20	<i>Eternal Flame</i>	69-70	<i>Ring Gates</i>
21-22	<i>Expedient Limb Replacement</i>	71-72	<i>Roachpopper</i>
23-24	<i>Foldbox</i>	73-74	<i>Scrub Field</i>
25-26	<i>Force Umbrella</i>	75-76	<i>Secure Compactor</i>
27-28	<i>Fractal Shelter</i>	77-78	<i>Smokescreen Comms</i>
29-30	<i>Gaming Miniatures</i>	79-80	<i>Spatial Extension Support</i>
31-32	<i>Ghost Icon</i>	81-82	<i>Temporal Panic Button</i>
33-34	<i>Gravity Anchor</i>	83-84	<i>Temporary Structure Support</i>
35-36	<i>Habitat Bubble</i>	85-86	<i>Tracker Tag</i>
37-38	<i>Hard Light Emitter</i>	87-88	<i>Translation Disc</i>
39-40	<i>Heating Cage</i>	89-90	<i>Undulant Road</i>
41-42	<i>Holocodex</i>	91-92	<i>Void Flowers</i>
43-44	<i>Liar Card</i>	93-94	<i>Voxcaster</i>
45-46	<i>Mapping Cloud</i>	95-96	<i>Watersilk Fabric</i>
47-48	<i>Memorial Sarcophagus</i>	97-98	<i>Xenomorph Limbs</i>
49-50	<i>Microvalet</i>	99-00	<i>Zen Sphere</i>

1d100	DEVICE ADJECTIVE	1d100	DEVICE ADJECTIVE
1-4	<i>Angular</i> , with a blocky construction.	53-56	<i>Perforated</i> , with holes or intentional piercings.
5-8	<i>Chilled</i> , or unusually hot despite environment.	57-60	<i>Rustic</i> , with pseudowood fittings.
9-12	<i>Colored</i> , with vivid or glowing hues.	61-64	<i>Shiny</i> , with a mirror-bright finish.
13-16	<i>Corroded</i> , with the surface pitted and flaking.	65-68	<i>Shrinkwrapped</i> , still in its packaging.
17-20	<i>Cubic</i> , with readouts on the side.	69-72	<i>Sleek</i> , with flowing lines and minimalist controls.
21-24	<i>Cylindrical</i> , with a textured grip.	73-76	<i>Soft</i> , with a pliant, squishy feel.
25-28	<i>Engraved</i> , with markings of a former owner.	77-80	<i>Spherical</i> , with rounded protrusions.
29-32	<i>Humming</i> , giving off a constant soft sound.	81-84	<i>Stained</i> , with blood or other fluids.
33-36	<i>Iconic</i> , bearing a person's picture or shape.	85-88	<i>Stinking</i> , giving off a chemical reek.
37-40	<i>Infested</i> , with vermin or plant life.	89-92	<i>Thin</i> , a panel with markings on the surface.
41-44	<i>Jagged</i> , with broken but functional casing.	93-96	<i>Transparent</i> , perhaps tinted or glowing.
45-48	<i>Jeweled</i> , with artificial gemstones.	97-99	<i>Worn</i> , rubbed and scraped along the surface.
49-52	<i>Marked</i> , by ancient advertising logos.	100	<i>Roll twice</i> and combine.