

TRAVELLER



*Supplement 4: Central
Supply Catalogue*

Credits to Burn

TRAVELLER

CENTRAL SUPPLY CATALOGUE

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INTRODUCTION

Welcome to the Central Supply Catalogue for Traveller. This book contains a varied array of, well, stuff people might want, need, or wish they had had a few days ago. All items are for use with the Traveller RPG from Mongoose but not everything in this book may exist in any given Traveller game universe unless the Referee says it does.

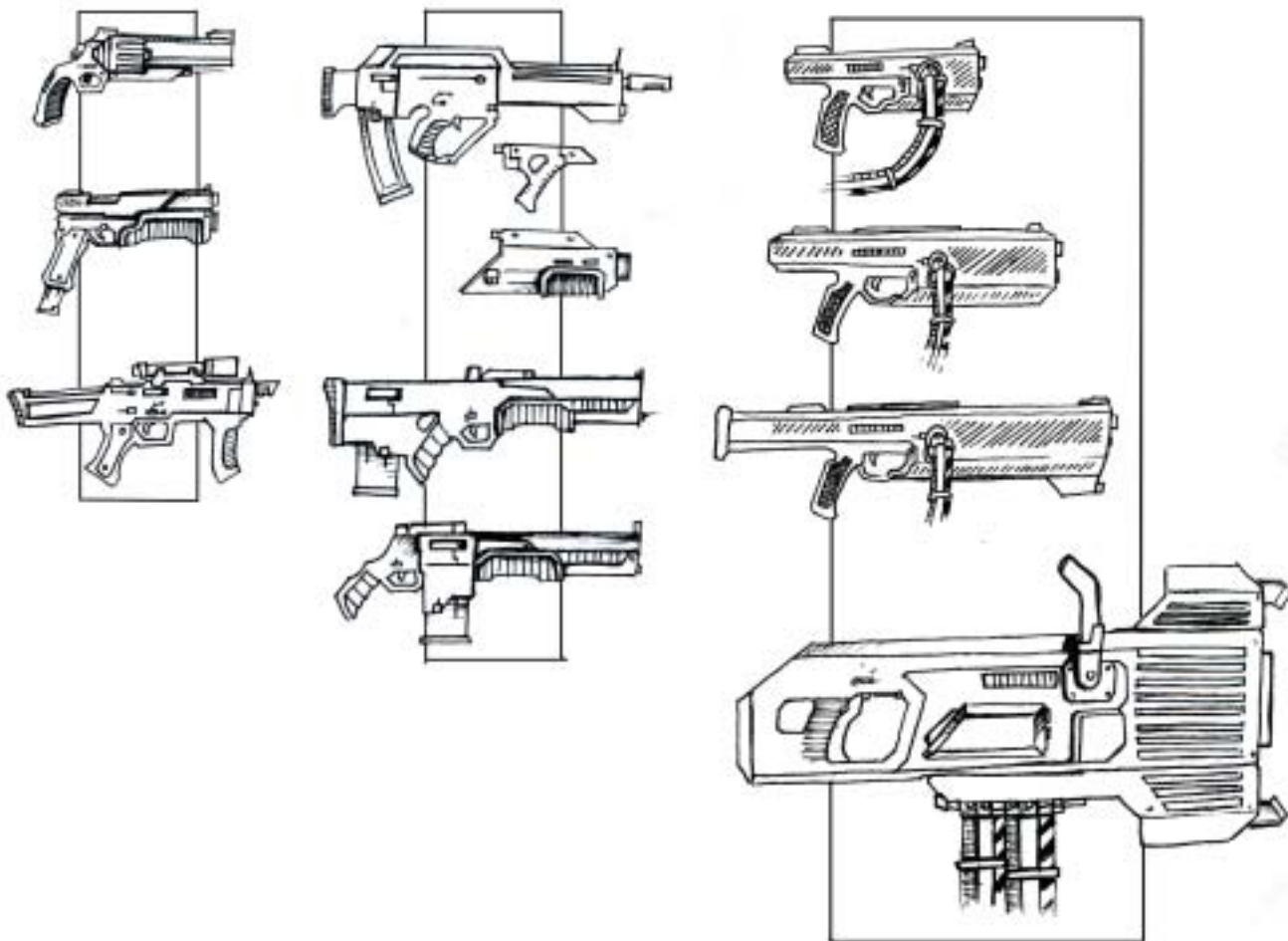
Most of the items presented herein are drawn from the official 'canon' publications of earlier Traveller versions. Some contradictions and repetitions have been resolved but for the most part what is in here is what existed in earlier versions of the game. However, there is a fair amount of new stuff too. Not all of the new items are designed with the Original Traveller Universe (OTU) in mind.

Or rather, there is no mention of such items in publications up to this point. It is up to the Referee to decide whether or not any given item is available and to deal with the ramifications of its availability.

This book is intended for use with any Traveller setting, not just the Original Traveller Universe. Where possible, assumptions about setting have not been made. However, sometimes it is necessary to make mention of background data. In this case, the Third Imperium setting of the OTU has been used as a starting point. It is not difficult to change these references to whatever interstellar polities exist in a different game universe.

This is more than a book of things to buy. It also contains information on the Tech Level system in Traveller, variant technologies and a number of other issues surrounding the use of technological items in Traveller.

Special thanks are due to Omer Golan Joel, who compiled and submitted an impressive list of gear, apparently just for fun.



RULES AND BACKGROUND

TECHNOLOGY IN TRAVELLER

The Traveller RPG deals with technology ranging from the very latest in flaked-flint applications to neural implants and antimatter power plants. Exactly what technological items are available to the travellers, or their opponents, can make a huge difference to their capabilities and the difficulties they may encounter in the course of an adventure.

The game needs some means of quickly identifying the baseline local technology and therefore establishing what it likely to be present. This is the purpose of the Tech Level system.

The Technology Level (Tech Level) of a given world or region is rated using a number which starts at zero and progresses upwards as technological capability increases. Tech levels are sometimes grouped into eras, such as Primitive, Stellar and so forth.

Tech levels are a general guide only. They give an indication of what is available to the locals but anyone expecting a single code to detail everything about a world's technology is in for some surprises.

Even within a given Tech Level there is some variation. A Tech Level designation is simply a broad guide; within each tech band there is usually some gradual progress towards higher technology. One TL 6 society might have just attained that level while another may have a 'mature' TL 6 and be moving on to TL 7, with prototype TL 7 items beginning to appear.

Sometimes a culture will be referred to with a qualifier such as 'stagnant' or 'mature'. These are usually self-explanatory. For example, a stagnant TL 6 world is not progressing; a mature TL 9 world has been at that level for a while and has worked the bugs out of its TL 9 systems. A late TL 7 world is close to advancing to TL 8; an early TL 2 world is using rather basic (and possibly less than optimal) versions of the technologies meriting its TL 2 rating.

Essentially, a Tech Level is a broad band rather than a precise indication of exactly what is in use. Some worlds are very backward in some areas due to cultural oddities or local conditions. Others may be in advance of their baseline Tech Level in some areas. However, the code (and the explanation going with it) serves as a useful generalisation until greater detail is encountered or required.

The Primitive Era (TL 0–3)

'Primitive' societies range from those with no technology beyond tools which can be picked up from the environment (sticks and rocks for the most part) to just before the beginnings of large-scale industry. Perhaps the most important factors are the lack of communications faster than a galloping animal and the unavailability of rapid mass transportation.

Primitive worlds rarely have anything worth trading offworld, other than novelty goods such as animal hides, art and exotic foods. The locals usually lack the capability to exploit natural resources by mining, large-scale agriculture and processing of unusual items such as pharmaceuticals.

As a result primitive societies tend to remain so. They lack the capability to generate enough surplus to trade offworld. This in turn limits the amount of investment which can be made and traps the primitive world at that level. Of course, technology will slowly advance and there will be small-scale investment in many cases. Most societies are capable of supporting their people with a little to spare for trade but this is more often traded by cart to the next town over than shipped offworld on giant freighters.

A 'primitive' tech rating does not necessarily mean an unsophisticated society, or hordes of starving savages. Social systems are often largely independent of Technology Level, though there are some obvious limitations. 'Primitive' people might be entirely used to starships visiting their world and totally unimpressed by them – they may be experts at fleecing naïve offworlders of their credits and small personal items.

TL 0

TL 0 equates to the Stone Ages on Terra. It spans a period from the earliest use of stone tools to the beginnings of metal use. Mature TL 0 cultures make use of quite sophisticated shaped stone and wood tools; early TL 0 people just pick up sticks and rocks.

The typical TL 0 dwelling is a skin tent, cave or natural shelter augmented with woven plant fibres. Clothing is mainly rough animal hides. Subsistence is usually by hunting, fishing or very basic agriculture.

Some TL 0 cultures make basic canoes; some domesticate animals. None have writing of any sort, though oral traditions and various forms of art are used to store knowledge. Medicine is primitive but sometimes quite effective, with herbal remedies used in place of modern drugs.

TL 1

TL 1 equates to the period on Terra from the earliest use of metals through to the early Middle Ages. Early TL 1 cultures use copper, bronze and similar soft metals, with iron becoming more prevalent later in the era.

TL 1 societies are capable of building sophisticated towns and fortifications, using stone or brick. Many scientific principles are understood, though often partially or incorrectly and these are used in warfare, engineering and navigation. Agriculture is somewhat

advanced, using irrigation and animal power is common. Water power may also be harnessed.

Carts and wagons are used for land transport, while oar and sail powered coastal vessels are used at sea. Open-ocean navigation is not usually possible. Weaponry takes the form of sophisticated hand weapons such as swords and manually powered missile weapons such as the crossbow and bow. Metal body armour and large siege engines, catapults for example, may be used by organised military forces.

TL 2

TL 2 equates to the period on Terra from the late middle ages to the industrial revolution (roughly 1400 to 1700 AD). Large cities are possible, with good trade routes crossing land, sea and even open ocean between them. Canals and other large-scale engineering works are undertaken where there is a need.

The printing press makes written materials available to a larger segment of the population, though literacy levels may not be high. Wind power may be in use later in the era, along with primitive firearms and artillery.

TL 3

TL 3 is roughly equivalent to 1700 to 1860 on Terra, averaging around the early 1800s. This era sees the rise of industrial capability. Early in the period steam power is a novelty and most movement is animal powered or uses sailing ships. By the mature TL 3 era, steam powered industry and transportation is common. Railroads and steamships make large-scale movement possible while primitive telegraph systems allow rapid, if limited, communications over a great distance.

TL 3 societies usually have a basic understanding of electricity and various sciences, including fairly advanced medicine. Anaesthetics, antiseptic and various pharmaceuticals, along with a better understanding of disease transmission, increases the life expectancy of the average citizen.

Early TL 3 cultures normally fight with a mix of smoothbore flintlock muskets and cannon plus hand weapons. Mature TL 3 cultures can build breech loading rifled cannon capable of accuracy over a long range plus percussion-cap weapons with improved range and accuracy. Mature TL 3 is generally seen as the point where a culture becomes capable of 'modern' warfare, not involving large bodies of close-packed troops.

The Industrial Era (TL 4–6)

Industrial societies have electricity and power generation which begins with steam and moves to more advanced systems including internal combustion and nuclear fission. Industrial societies are capable of making good firearms but cannot do a great deal about a major offworld threat.

Industrial-era societies generally produce sufficient goods to be able to trade some of the surplus offworld and conversely they make a reasonable market for offworld goods. It is still difficult for worlds of this sort to generate enough hard cash to pay for major imports of high-tech goods, however. As a result Industrial worlds tend to be a target market for the products of pre-stellar economies. This is because goods of a slightly higher Tech Level are easier to maintain and keep working (and thus more worthwhile purchases) than high-tech gear.

Although they are titled industrial societies, TL 4–6 cultures are not always industrialised. The term merely means they possess technology allowing them to build an industrial society if other factors allowed. Among those other factors are society and population. Large-scale industrialisation requires a fairly large and densely concentrated population. Many TL 4–6 worlds have sufficient population for industrialisation but it is too widely distributed to make this practical. They are still considered to be industrial-tech worlds but they are not producers of large amounts of goods.

TL 4

TL 4 is the beginning of the industrial era, about equivalent to the late 19th and early 20th Century on Terra. Railroads and steamships are now commonplace and large-scale industry is capable of producing large volumes of goods. Hot air balloons and airships are possible, though limited and early crude experiments with internal combustion engines are undertaken.

Repeating firearms and primitive machine guns dominate warfare, allowing a TL 4 army to pose at least some threat to a higher tech force lacking armoured vehicles. Radio and telephone communications become widespread as the era advances and the use of plastics allows new industrial capabilities.

TL 5

TL 5 is characterised mainly by the use of petrochemicals and electricity. Steam power is usually also in use. Isolated societies attaining TL 5 by their own efforts tend to make use of mechanical and hydraulic engineering, with basic electrical systems where they are most suitable. Societies which are part of a higher tech culture make greater use of electric motors and control systems for the same purposes. These systems will be bulky and clumsy compared to more advanced electrical systems available at higher Tech Levels.

Cities are large and can contain very tall structures. It is also possible to build living spaces in quite hostile environments, such as in arctic conditions or underwater (in fairly shallow waters). Some industry and food production is possible in these places, though it is not very efficient.

An early TL 5 culture corresponds roughly to the beginning of the 20th Century on Terra, with animal power still in extensive use. Mechanisation proceeds throughout the era until by the end of the period most functions are carried out by machines.

Warfare is also mechanised. Armoured vehicles, combat aircraft and large gun-armed maritime warships are common, as are submarines. The latter are rather crude. Artillery is good and may be self-propelled in a mature TL 5 society. Personal automatic weapons are also available.

Advances in rocketry make possible very basic orbital flights and the creation of a satellite network. Guided missiles, of an extremely simple sort, are possible by the middle of the TL 5 period. Radar is also available and gains in reliability as technology progresses.

TL 6

One of the benchmarks for assigning a TL 6 classification to a given society is its spacefaring capability. A TL 6 culture will be capable (if sufficient industry exists and the need is perceived) of creating a very marginal orbital defence force and undertaking significant exploitation of local orbit. Satellites of various types can be launched, though they tend not to be present in very large numbers and it is possible to build a very basic orbital station. Missions to other nearby planets could be undertaken with extreme risk.

A TL 6 society will usually have access to nuclear power and fairly good electronics. It is possible to build a very large and crude computer with the capability of a Model 1. Electronic consumer devices are affordable, though most worlds will import these rather than making them, if there is regular offworld trade. TL 6 roughly equates to the mid to late 20th Century on Terra.

Warfare can be conducted with nuclear missiles and long-range aircraft as well as missiles, armoured vehicles and rotary wing aircraft. Automatic small arms are common and guided anti-tank and anti-aircraft missiles are available to infantry, giving TL 6 forces a fighting chance against more advanced cultures.

The Pre-Stellar Era (TL 7–9)

Pre-stellar societies possess sufficient technological sophistication to be capable of putting craft into orbit and even carrying out routine flights to the far parts of their own system but cannot build interstellar craft.

Not all pre-stellar societies actually possess space vessels. Spacefaring capability requires a fair amount of industrial output to support it and not all worlds perceive the need even if they have the capability. However, the label is a handy one. It indicates local industry is capable of building spacecraft if the need is perceived, thus the world can offer modest technical support to visiting spacecraft.

Pre-stellar societies tend to buy from higher tech worlds and export across the industrial to early stellar tech range. Pre-stellar goods can find a wide market on many worlds, even where higher tech items are available – some things can be made just as well at TL 8 as TL 10.

Pre-stellar worlds usually have some means of offworld defence, starting with high-altitude interceptor aircraft and primitive anti-orbit missiles. Some build orbital missile or gun platforms or rather basic system defence craft; others buy in more advanced vessels built to a basic specification which is easy to maintain with local resources.

In short, pre-stellar societies form part of the economic mainstream of interstellar culture. They are advanced enough to play a useful part in an interstellar economy and the TL 7–9 range is not very difficult to reach and maintain for a colony or homeworld, so is reasonably common.

TL 7

By Tech Level 7, orbital flight is fairly commonplace and the possibility exists of small outposts on other worlds in the system. On-planet travel is fast and efficient, with high speed rail travel and supersonic aircraft making long distance movement easy. Personal transport is usually ubiquitous.

Varieties of 'green' power generation systems are available, such as solar and wind power. These are possible at earlier Tech Levels but are very inefficient until TL 7. Advanced nuclear fission plants can be built small enough to fit on a truck or to run a small town.

Electronic systems are prevalent and effective. A planetary network of some kind may well exist, with communications equipment and computers tied into one or more communications webs.

Most combat equipment is fairly conventional, using projectile weapons and guided missiles but early beam lasers are available and may be used in some cases. Overall, TL 7 equates to the last two decades of the 20th Century and the early years of the 21st on Terra in most ways.

TL 8

In the early 21st century, humanity on Terra is on the cusp of Tech Level 8, with some early versions of TL 8 technology in use.

A TL 8 culture can reliably launch fairly large loads into orbit and can construct space stations. Manned missions to other planets in the same system are possible at modest risk and as technology develops this becomes almost mundane. Weather control and very limited terraforming are possible, though only on a small scale.

On-planet travel can make use of hypersonic aircraft and deep-diving submarines, with other underwater technologies making cities in the depths a possibility. These include seabed farming techniques and early versions of the artificial gill.

TL 9

The defining factor for TL 9 is gravitic technology. Late in the TL 8 era, experiments in gravity manipulation begin to bear fruit.

Once these phenomena can be reliably reproduced and used to implement useable technology, the culture has reached TL 9. The Jump drive comes about in the mature TL 9 phase as a result of gravitic technology. The combination of Jump with artificial gravity allows reliable starships to be created. Only Jump-1 is available at TL 9.

On-planet, gravitic tech allows the construction of grav cars and air/rafts as well as industrial applications, ultrafast 'levitating' trains and gravity-assisted structures including orbital cities. Ground vehicles rarely completely disappear but increased use of grav vehicles results in changes to the ways cities are built. Tall buildings with landing ports, separated by parks and other open areas, are common. Arcologies (self-contained towns or cities within a single structure) are possible before TL 9 but only really become viable at this point.

A TL 9 world will usually have some form of orbital defence capability and may operate a system patrol squadron, or even a small interstellar navy. On-planet, the first grav tanks are available. These are usually armed with mass driver guns and powered by small fusion power plants. High-altitude aircraft often incorporate partial gravity-tech assistance to increase manoeuvrability and allow trips beyond the atmosphere to intercept a space vessel.

The Early Stellar Era (TL 10–11)

An early stellar-era society has the technical capability to build interstellar craft, though of course this requires both a perceived need and the industrial base to do so. Early stellar societies are capable of playing a major part in an interstellar economy; producing goods and operating their own interstellar freighters to transport them.

Early stellar societies are defined by the capability to build Jump drives, or at least the ability to understand them and build one if necessary. TL 10–11 worlds are usually able to fabricate spares for starships and other high-tech devices and routinely use advanced computers, communications systems and weapons. An early stellar era world would be able to put up a decent fight against an invader, though higher technology always tells.

In the Original Traveller Universe, many of the main worlds of the Third Imperium (and most other major starfaring cultures) are around TL 10–11. This level is relatively easy to attain (at least, compared to more advanced techs) and is sufficient to contribute to the interstellar economy.

TL 10

Improvements in fusion technology makes power plants smaller and cheaper. Coupled with advances in general starship technology, this allows increased commercial and military use of interstellar space to become possible. Deck gravity plates are one such advance, greatly increasing the comfort of passengers and crew.

It becomes much more viable to set up colonies in the far outsystem or other star systems. Ships are still restricted to Jump-1 however. On-planet, grav vehicles become more common than those travelling on the ground or water and all but entirely replace aircraft.

The standard infantry weapon is the Advanced Combat Rifle, which uses electrothermal-chemical (ETC) propulsion instead of conventional chemical propellant. This allows a smaller, lighter round with better hitting power. Plasma weapons are available to arm combat vehicles while advances in gravitic-assisted manufacturing make crystal iron armour possible. Other technologies include basic repulsors and medical anti-viral techniques.

TL 11

The availability of Jump-2 engines is the benchmark for TL 11. This opens up exploration and commercial opportunities as starships are no longer tied to mains of close-together star systems. In an interstellar community, TL 11 is an important economic step as it allows local yards to build ships for sale or to compete in trade with those from other systems. This is because J2 is fairly standard for commercial ships, even those built at higher Tech Levels.

The first true synaptic computers become available, along with high-capacity personal data transfer equipment. This allows users to have high-end computer support even when they are away from a terminal. On worlds with an integrated data system, there may literally be nowhere on the planet where a citizen does not effectively have a supercomputer in his or her pocket. The first large-scale free-floating structures using gravitic support also become available, though they are not common.

In a military context, unpowered personal armour suits (combat armour) become available at TL 11. These render troops effectively immune to the commonest hazards of the battlefield; shell fragments and similar light projectiles. Many lower-tech small arms cannot breach combat armour, making TL 11 a turning point for battlefield operations.

The Average Stellar Era (TL 12–14)

The defining factor for average stellar cultures is that the Jump drive is a mature technology and vessels can be built with higher Jump numbers than 2. As always, this does not mean they are built on the world in question but the technological base exists to construct and maintain them.

Interstellar travel is thus fairly routine, reliable and safe for most such worlds. In addition, a TL 12–14 society is generally capable of weather control and terraforming (the latter on a relatively modest basis) if the industrial base to support these activities exists.

Average stellar worlds are usually the big players in the interstellar economy, exporting finished hightech goods to many other worlds

and bringing in raw materials in return. The technology available to such societies borders on the wondrous; gravitic technology is routinely used to build very graceful buildings and even flying cities.

In the Original Traveller Universe, Average Stellar is the high end of capability for most interstellar powers, with higher tech worlds being very rare and even the top-end (TL 13 or 14) worlds being uncommon at least.

TL 12

The 'Stellar' era begins at TL 12 with the introduction of the Jump-3 drive. Gravitic units can now be made small enough to allow personal grav transport. Medical science is capable of producing broad-spectrum antitoxins and advanced prosthetics.

Warfare is again changed by the availability of man-portable plasma support weapons and vehicle-mounted fusion guns. These powerful weapons force vehicles to either be extremely well armoured or fast to avoid being hit – or both. The invention of nuclear dampers and superdense armour offsets the increased lethality of the battlefield only a little.

TL 13

Progress is evolutionary rather than revolutionary in the middle of the Stellar era. The Jump-4 drive opens up few new possibilities but it does make interstellar communications faster and more efficient.

Data storage is mainly in holographic form within optical crystals and hand-held cameras are available which can record full holographic images, including building up a picture of an object from various angles to fill in details unable to be seen from any one direction. This is largely automatic; many TL 13 citizens do not realise it is happening at all and cannot understand why a lower-tech item does not produce very good results. In some ways, TL 13 represents a threshold of capability – most people know how to use the tools rather than the techniques and have difficulty functioning at lower Tech Levels where there is less automated support.

On the battlefield, powered battle dress becomes available, along with advanced plasma weaponry. Casualties can routinely be treated using custom-grow replacement body parts and in some cases can be reanimated several hours after death.

TL 14

Incremental technological advancement continues with the development of the Jump-5 drive and meson communicators. Military starships and vehicles can use bonded superdense armour, while ground troops are sometimes armed with light fusion guns. It also becomes viable to build an entire city as a flying grav-supported structure.

The High Stellar Era (TL 15–16)

Some experts claim TL 15 begins at the point where the average human is incapable of understanding how most of the devices around him function. Certainly the level of sophistication is very high indeed.

The Jump-6 drive is the defining factor for high-stellar technology, though there are many other important advances at this level. Electronic devices are extremely powerful yet small, reliable and robust. Almost every facet of life is pervaded by extremely potent yet easy-to-use technology.

High stellar technology allows routine travel over very great distances, permitting faster communications. This in turn allows an increase in the manageable size of a society and the distance over which cultural influences are felt.

In the Original Traveller Universe, TL 15 is the very top end of technical capability for most regions, with very occasional worlds having higher technology available. In some cases this is due to access to relic technology from now-vanished societies or the presence of a research installation. Occasional higher tech aliens are encountered but this is very rare indeed. In most Traveller games, even TL 15 items will be uncommon as this represents the (expensive) cutting edge of available technology.

TL 15

TL 15 is characterised by the development of the Jump-6 drive, which may represent the pinnacle of Jump technology. Other starship techs include a primitive black globe generator, which allows new options in strategy.

TL 15 societies are capable of creating robots and prosthetic body parts virtually indistinguishable from their natural counterparts. Other advances include synthetic anagathics (anti-aging treatments) which make an extended lifespan available to a larger segment of the population.

TL 16

At TL 16, it becomes possible to build an artificial intelligence indistinguishable from organic intelligence. Brains can be transplanted and some memory transfer is possible. Learning is possible via direct injection of a knowledge-bearing Shotgun, though this technique is far from perfect.

The main new technology at TL 16 is the tractor, a reverse repulsor. Tractors are somewhat unreliable but the technology has some uses where fine control is not vital. Primitive neural weapons are available for use in personal combat.

Advanced laser systems begin to appear at TL 16. These represent what may be the pinnacle of laser technology, though post-TL 20

developments might result in a new breakthrough. Similarly, the defensive sandcaster reaches its probable pinnacle at TL 16 with a 'sand' cloud which can be manipulated using gravitic systems and polarised electrically to deflect charged particle beams.

The Advanced Stellar Era (17–20)

The 'Jump-6 limit' remains in force for some time after the invention of Jump-6 drives. Various promising fields of technology eventually fail to produce a workable Jump-7 or higher drive. However, other technologies continue to advance.

Among these technologies are things previously considered impossible, including weapons causing matter to disintegrate and reliable antimatter power plants. Some benefits of these extremely high technological levels are incremental, such as the gradual miniaturisation of many complex systems. It thus becomes possible to build better grav plates or stronger hulls on the same displacement, or to free up more space aboard a vessel by using smaller components with similar functions.

In the Original Traveller Universe, TL 17+ worlds were extremely rare and always had a specific rationale for their presence.

TL 17

The benchmark for the beginning of the Advanced Stellar period, which begins at TL 17, is the development of a workable antimatter power plant. Antimatter systems are available at earlier Tech Levels but TL 17 marks the beginnings of reliable and safe use.

A starship-grade disintegrator weapon also becomes available at TL 17. It is not possible to build disintegrators on a small scale at this level of technological sophistication. Starship-grade advanced fusion guns are also available, representing fusion gun technology's extreme capabilities. Little further development is possible after this point.

TL 18

At TL 18 disintegrator technology has advanced sufficiently to allow a turret-mounted version to be built for starships. Missiles using antimatter warheads become a viable weapon system. Crude versions are available at earlier Tech Levels but reliability is an issue – which means no sane captain would allow one aboard his ship.

In medicine, intelligent antibodies permit most diseases and toxins and even some effects of aging, to be dealt with by the body without any need for medical treatment. At this TL new stocks of antibodies must be introduced to the patient's system every year or so, ensuring his body is ready to deal with any infection or other health issue.

TL 19

At TL 19, a proton screen becomes available, partially protecting starships from missiles using antimatter warheads. This device

functions largely in the same manner as nuclear dampers do against nuclear warheads. The technology is very much in its infancy at this point.

Stellar research allows changes to be made to the characteristics of stars by introducing the right materials in the correct quantities. This is a risky technology and is imperfectly understood at TL 19. The Darrian people managed to cause a nova by experimenting at TL 16; by TL 19 some of the hazards are avoidable. However, experimenting on stars remains something best done well away from inhabited systems.

TL 20

A prototype Jump projector weapon becomes available at TL 20. It is extremely erratic and unreliable even by the standards of Jump-technology systems and can only be built as a spinal mount. However this system does form the basis for later development which may create a weapon system suitable for large-scale deployment.

The white globe projector also becomes a possibility. This is a version of the black globe which allows a ship to use its sensors and weapons while protected and represents a more useful version of the technology. However, TL 20 white globes are clunky and somewhat unreliable.

Beyond TL 20

Beyond TL 20 it becomes difficult to predict what might be possible. In the Original Traveller Universe, a race known as the Ancients achieved TL 25 or possibly even higher. They managed to create wonders such as ringworlds, teleportation devices and hand-held disintegrator weapons. It is not known whether the Ancients broke the Jump-6 barrier or were able to sidestep it somehow, though it is quite possible they found some means of faster travel.

The Ancients also managed to reduce several planets to asteroid fields and to thoroughly devastate others. Their weaponry is almost beyond imagining.

TL 21+ is the realm of all but magical technologies. It is best left loosely defined as a plot device for the Referee. It hardly matters whether a given alien artefact was built at TL 21 or 31, or even 101 unless the game routinely features such items. In virtually all Traveller games, ultra-high-tech items will be an once-in-a-lifetime find and thus entirely unique. A detailed system for rating them is neither really desirable nor easy to create.

The Referee should consider carefully the implications of any given ultratech device. Giving the Player Characters a power plant the size of a can of soup which can run a battleship might make life too easy for them. So could a magic wand able to make enemy tanks disintegrate. Unless of course it is damaged, prone to malfunction or otherwise imperfect...

TECH LEVEL OF A GIVEN SOCIETY

Normally a Tech Level code is given for an entire world, which may contain millions or even billions of people. Obviously this is a generalisation. The tech code simply indicates what level of technology can be locally supported in the main populated region; the major cities and the region around the starport.

It is possible to encounter considerable variance around this baseline level. Typically, any world with a reasonable starport (C or better) will have at least some quantity of imported technology available. This will be expensive of course.

Imported technology is usually no more than 3 TLs higher than what can be made locally. Anything much more sophisticated either requires offworld maintenance personnel or else breaks down too fast to be much use.

World governments, starport operators and the like may well have access to higher tech equipment. These entities can usually afford to have maintenance personnel on contract and to buy in the spares they need to maintain a limited amount of higher tech equipment than could be maintained locally.

Thus it is not uncommon to find TL 9 computer and communications equipment at a starport on a TL 4 world. However, this gear must be maintained with offworld help – it is beyond the locals' capability to support and is thus not considered when rating the local Tech Level.

World governments and port operators often bring in advanced weapons and vehicles for their personnel from offworld. This is usually considered necessary for the security of the port or capital city and serves as a form of insurance against well-armed offworlders who think they can do as they please. Private individuals may also buy in higher tech items if they have the need and the cash.

Thus there is no guarantee a supposedly defenceless TL 4 world might not have orbital missile batteries protecting its starport and a small security detachment in advanced armour, armed with laser rifles, on call to deal with crises. However, these items are imports and are not part of the local technological capability.

As a rule, some higher tech items may be available to casual purchasers around the starport but away from it the local Tech Level prevails. Note the TL of a given world or society indicates what can be locally made and supported but these items could be based on theory developed offworld at a higher tech location.

Only on the most isolated world does everything have to be discovered by the natural progression of science. On most worlds, the locals know what can be done at higher Tech Levels even if they cannot do it themselves. This means that rather than develop, say,

Gravitic technology with all the blind alleys and false starts associated with such an endeavour, most worlds start out knowing what can be achieved and are able to obtain the scientific and mathematical knowledge to do it for a modest sum of cash.

Thus worlds which are part of a starfaring culture will often be able to produce high-tech items sooner than those which have to do all the research for themselves. A single setback could convince a world government a given technology is unviable or impossible but a research team who knows it can be done may proceed.

Of course, the Tech Level of a given world is a guideline only. Cultures can progress more quickly in some areas than others. For example a given world may have an overall Tech Level of 8 but could be very good with computers and electronics, possessing TL 9 or even 10 in those fields. More than one or two Tech Levels above the baseline is unlikely, however, as the supporting industry must be available.

Similarly, some worlds have lower tech in some areas. A world may have TL 11 overall but lag at TL 9 or 10 in some areas, such as weaponry or transportation. Some technologies may be entirely absent. For example an airless world will have little use for the theory of aerodynamics, though it would be fairly easily to learn the principles if this became necessary.

Technology also varies from one region to another. The baseline Tech Level of a given world is available, as a rule, to most of the population of the major cities and the main populated areas. However, outlying and rural areas may have a lower sustainable Tech Level – usually 1 or 2 TLs below the central region at most.

There may also be small enclaves possessing a very different Tech Level to the one listed. For example, the people who live and work at a class C port on a TL 4 world may have TL 9 equipment and the capability to support it but they are not considered to be the main population of the world and so the TL rating is not based on what they have. The estates of an offworld noble or a corporate mining installation might have a high-tech capability but again this is not available to most of the population so is not considered. There might also be primitive people living in far corners of the world who are not considered when rating the TL of the world.

Thus the Tech Level rating of any given society can vary somewhat from the baseline listing. As a general rule, the greater the distance a region is from the main populated areas and/or the more isolated it is (culturally or by terrain), the lower its Tech Level is likely to be.

Technology and its Effects on Society

As already noted, technology is often independent of cultural sophistication. A few government types require a certain amount of technological sophistication, while others are well suited to low-tech societies. However, technology does have a profound effect on society.

The main reason for technological development is to make life easier. In very low-tech societies, people spend most of their time working at subsistence-based tasks such as hunting or farming. A few craftsmen can be supported by the small surplus produced by others, trading their expertly made goods for food and clothing but there can be no economy in the recognizable sense as there is simply not enough surplus produced to allow meaningful trade and specialisation.

As Technological Level improves, sufficient food and other necessities can be produced by a smaller number of people, freeing others to do different work. Exactly what skills are supported depends very much on the needs of the society – warriors, administrators, craftsmen, explorers, rulers, artists and game designers all require the support of others working at the tasks of food production and basic industry.

Advanced functions such as exploring new lands or launching space missions can only be carried out by societies who have built a pyramid of specialised industrial activity beginning with farming or other food production. Thus technology is not only necessary to enable the equipment for a grand endeavour to be built, it also frees up the people needed to work on the project.

However, even those working in subsistence industries will have a greater income and more free time as technology increases. This creates a market for entertainment and luxury goods as well as devices which further increase productivity and save labour.

Thus, as a rule, higher technology results in more goods being bought and sold and more people working as traders, administrators and in other industries not contributing directly to the survival of the population. There are few poets and artists in a society where everyone needs to toil 10 hours a day in the fields just to avoid starving. Conversely, higher technology not only makes better medical science possible, it also allows more people to leave the subsistence race to become medical professionals.

Technology, therefore, enables a society to do more in terms of great works and grand projects and allows more individuals to pursue their desires rather than their needs. However, there is more to it than that.

Certain technologies have a profound effect on society. Industrialisation, for example, requires a densely packed population to operate, which results in urbanisation. The development of railroads, reliable steam ships and powered vehicles will also change the shape of society.

Mass transportation allows people to move around more freely and allows goods to be transported cheaply over long distances. These two factors tend to cause people to move around, becoming less parochial in their outlook. A world with good transportation and lots of population movement will have a more unified culture than one where people live all their lives in one village, town or city.

Mass communications also have a major effect, depending on how they are used. It is only really possible to have true democracy where everyone can vote on a given issue in either very small communities or where there are good communications. Mass communications can have a unifying effect on the population of a world. Cultural divisions may remain but the 'us and them' worldview is often eroded when people regularly encounter folks from very distant regions via the world datanet or their personal communication channels.

Medical technology also affects society. People are often more fatalistic (and tolerant of hardship) in societies where a large segment of the population fail to reach adulthood due to disease or accident.

Thus technology itself does not shape a society but the capabilities offered by technology will have a profound effect.

Technological Item Availability and Cost

A limited selection of items can be obtained in any given location. Most will be of local origin and therefore of the baseline local Technology Level. Close to a starport or in a major city, imported items will also be available. Most imports will be one or two Tech Levels higher than the local tech.

There is little point in importing lower-tech items in most cases so it will not usually be possible to buy a stone axe on a TL 12 space station. One could probably be sourced and shipped in to order but this would be quite expensive as well as fairly pointless under most circumstances.

Some items are ubiquitous. For example, the dagger becomes available at TL 1. Daggers and knives are available at all Tech Levels. Such items are pretty much the same in terms of cost and function right across the range of Tech Levels.

Other common items not varying much in price include personal weapons. Although, say, a slugthrowing rifle is rated at TL 5, rifles are generally available anywhere the Tech Level is above 5 (subject to local law of course) and imported to many places where they are not available. The price varies little in most cases, though rarity drives it up on low-tech worlds.

It is generally not possible to buy outmoded items at higher Tech Levels, except as novelties. Thus a TL 12 gun store might have a range of autopistols because they are very useful, it will not normally sell flintlock weapons unless there is a local demand, perhaps among sports shooters.

As a general rule, basic items like knives, handguns, rope, first aid kits, tents and the like will be available most places at their listed price, unless they have to be imported. In that case, the price will be higher. Most of the items in the shops will be built at the local

Tech Level or at the Tech Level of whatever nearby industrial world supplies the dealers. Items above this Tech Level will cost more.

An item 1 TL above local Tech Level may be offered at its normal price or not much higher but after this the cost rises steeply. Travellers can expect to pay up to 25% extra for items 1 TL above local, up to 50% more for 2 TL and double listed price for items 3 TL above local Tech Level. Even higher tech items may have to be imported specially and if available will command very high prices. The Referee should feel free to gouge the players for every possible credit. If they want cheap high-tech items, they will need to travel to a higher tech world.

These comments do not usually apply to major trade centres. A large port will usually have goods coming in from many worlds, with a range of Tech Levels. There will still be little very low-tech stuff on offer, mainly because buyers can get something better for the same price.

Prototypes and Low-Tech Variants

Normally when a new technology is introduced, it starts out borderline useful at best and is gradually improved. To take an example from Terra, the automobile was available from the end of the 19th Century, at TL 4. However, the ground car is listed in Traveller as being a TL 5 item. TL 5 equates to the mid 20th Century, say 1940–50.

The TL 5 ground car is the standard model (or at least, TL 5 is the lowest Tech Level where a useful ground car can be built). The TL 4 model can be considered to be a rather crude prototype. Cars of this period were modest in performance at best. 5-horsepower engines and rudimentary controls were normal. Speed and range were laughable and overall the vehicle was only a little better than nothing.

A TL 5 ground car will obviously be more basic than one built at TL 7 or 9, but it will perform the same function acceptably well. Higher technology brings improvements but you can get by with the minimal-tech model.

This is the case with most technologies. The item is listed at the point where it becomes generally useful. It will often be possible to build a prototype (usually less than half as capable) one Tech Level below the introduction tech, or to reverse-engineer an advanced item to a lower Tech Level using simpler methods and systems.

Prototype items tend to exist where a society has had to develop technology in isolation. A mature TL 7 society, for example, may begin to prototype some items that are characteristic of TL 8. This does not violate some cosmic rule; it is part of the natural

progression of technological capability. When enough workable TL 8 items are generally available, the culture will merit re-rating to TL 8 in the astrographical guides. As a rule, prototyped items are expensive, clunky and prone to major 'teething troubles' which are gradually ironed out as the technology matures.

Reverse-engineering is a different matter. This is a matter of taking a concept or device from one Tech Level and applying it at a lower TL, using simpler methods. For example, it might be possible to remove a broken Doohickey Gauge from a TL 9 starship and build something to do the same job at TL 7. The resulting Frankensteinian mess of TL 7 electronics will not fit in the Doohickey Gauge housing and is likely to sprawl across the console and onto the floor but it might suffice to get the job done... long enough until a proper replacement can be found.

Reverse-engineering can also be done with concepts. A TL 5 ground car developed by an isolated culture by means of natural tech progression will likely not be as good as one built by a culture which can look at more advanced models and 'borrow' features from them. These may have to be implemented by more primitive means, such as mechanical systems rather than electronics but overall a TL 5 implementation of a known concept will be more impressive than a version developed from a prototype.

Thus, returning to the automobile example, a ground car built at TL 5 on a typical world in the Traveller game universe will be rather better than an average 1950s car from Earth. Note, however, the TL 5 listing for the ground car is a start point. Most ground cars on the market are built at higher Tech Levels. The function is much the same; cost is similar but in terms of comfort and usability higher tech vehicles are much better.

Creating Lower-Tech Versions

The creation of lower-tech versions of technological items is always subject to Referee approval. The following rules are presented as a guideline only.

Determine the final cost of one item and its performance, size and so on using the table overleaf. Roll for each item in the table separately.

The 2d6 roll is modified as follows:

–3 per Tech Level difference

+1 per level of relevant skill only when reverse-engineering a known system

+1 if using known concepts (for example a TL 4 society trying to build a TL 5 ground car, having seen examples from offworld)

If any roll (for cost, performance, bulk or reliability) comes up a modified value of zero or less, the project is a total failure. It must still be paid for in full.

2d6 roll	Cost Multiplier	Performance	Bulk	Reliability
0–	Project Fails	Project Fails	Project Fails	Project Fails
1	20	5%	500%	10%
2	18	10%	400%	20%
3	16	20%	300%	30%
4	14	30%	280%	40%
5	12	40%	260%	50%
6	10	50%	240%	60%
7	8	60%	220%	70%
8	6	70%	200%	75%
9	4	80%	180%	80%
10	3	85%	160%	85%
11	2	90%	140%	90%
12	1.5	95%	120%	95%
13+	1.25	100%	100%	100%

Performance, Bulk and Reliability are as compared to the higher tech item.

PROTOTYPES:

Prototypes of items expected at the next TL above can be created by a research project. This is abstracted as follows: The project to create a single prototype absorbs funds and resources equal to (2d6x5) times this cost. Once a single item has been produced, others can be built at the unit cost. It is only possible to prototype items from the next higher TL.

REVERSE-ENGINEERING:

Reverse-engineering a component from a higher Tech Level can only be done on a small scale. The project absorbs funds and resources worth 2d6 times the final cost of a single item. Once the project is completed, other items can be built at the unit cost.

Example: A starship engineer needs a TL 10 component (which normally costs Cr. 1,000) to fix her drives but the ship is stuck on a TL 8 world with no source of offworld spares. With no alternative, the engineer tries to fabricate the part. She has Engineer (M-drive) skill at level 2 and is using a known concept since she has the broken component in front of her. This is worth a net +3 on all rolls. However, the two Tech Level difference imposes a –6 penalty, for a final modifier of –3.

With no alternative, the engineer sets to work. A 2d6 roll of 10 (modified to 7) indicates the component is subject to a cost multiplier of 8. The final cost of a replacement component will be Cr. 8000. Rolling for performance, the engineer gets a 7, (modified to 4), indicating the item's performance is only 30% of the item being replaced. The Bulk roll comes up 8 (modified to 5), giving a final size equal to 260% of normal. Reliability comes up a 9 (modified to 6), indicating the component is 60% as reliable as the proper TL 10 one. Rolling for the project cost gives a 6, so the project overall cost 6 times the unit price of the improvised component.

The engineer has created a gigantic mess of wires and circuit boards which does the job of the original component about 1/3 as well and

breaks down almost twice as often. The project has cost Cr. 8000 x 6, or 48,000 credits. The engineer builds a second component for when the first inevitably melts or explodes. Now she has figured the design out the cost is Cr. 8,000 - the unit cost of the item.

If this replacement component was not suitable, or if the project failed, the engineer could repeat the whole process, risking total failure or a hugely expensive and less useful item but potentially producing something better.

Higher Tech Versions

As already noted, the Tech Level of any given item is the first TL at which it becomes widely available. Often, increased Tech Level will not greatly improve an item. For example, a knife made at TL 2 is functionally the same as one produced at TL 12. It might hold its edge better or resist corrosion but the basic cutting function remains the same.

Other items are totally altered by technology. A TL 1 medical kit will do much the same job as a TL 7 one, albeit with more primitive materials. However once advanced sensors and electronic equipment becomes available, such items become much more effective and are essentially a different item. Where this is the case, this book presents more than one version of the same general type of equipment.

For example, a Model 2 computer is the same device as a Model 1 but using better electronics. The model designation represents a level of capability rather than a specific design. It is thus possible to build a Model 1 (normally available from TL 7 onwards) at any Tech Level above that, obtaining the equivalent capabilities on a smaller frame.

As with reverse engineering, all higher tech items are subject to Referee approval. In most cases there is little to be gained by building an item at a higher TL. For example, a nuclear fission reactor has a maximum output which is not greatly affected by building it at extremely high Tech Levels. The technology is outmoded by then, it cannot be developed past a certain point and is replaced by more advanced technologies, such as nuclear fusion.

RULES AND BACKGROUND

For items able to be improved by technology, they usually cost roughly the same as the base model but include extra features. For example a ground car built at TL 10 might have computerised driving aids, several kinds of navigation and entertainment system and be able to park itself. It might even be self-cleaning. It will certainly be safer and more comfortable than the basic model but it will not cost any less. It is very rare for a higher technology model to be built more cheaply using the same specification as the base model.

As a general rule, most technologies reach their pinnacle 2–3 TL after introduction and are subject to diminishing returns after this. If an improved-technology item is desired, use the following system to determine its capabilities.

Some items are functionally limited. For example, increasing the muzzle velocity of a handgun round will increase both recoil and stress on the weapon's frame. This may make the weapon unusable due to excessive recoil or hazardous to fire, possibly even prone to chamber explosions.

Determine the final cost of one item and its performance, size and so on using the table below. Roll for each item in the table separately.

The 2d6 roll is modified as follows:

- +3 if one Tech Level above
- +5 if two Tech Levels above
- +6 if three Tech Levels above
- +7 if four Tech Levels above
- 2 if improving two factors
- 4 if improving three factors
- 6 if improving four factors
- 8 if improving five factors

If any roll (for cost, performance or bulk) comes up a modified value of zero or less, the project is a total failure. It must still be paid for in full.

It is only necessary to roll for the factors that are affected by higher technology projects. Thus if a character does not want to try to alter the device's cost then no roll is made, the device costs the same as the normal version. We assume this was a target of the design process, for example 'create a high-tech baseball cap which is lighter and has more vibrant colours but costs no more than the standard one'.

Performance, Bulk and Reliability are as compared to the standard item.

* More than one type of performance can be enhanced. For example, top speed of a vehicle is one type of performance, range at cruising speed is another, as is acceleration.

Performance is a catch-all category for the various features of a device. Some features are easy to calculate, such as a project to create a grav cycle with higher top speed. If the basic vehicle can make 600 kph and the higher tech one performs at 130% of the standard model's capability, then it can make 780 kph.

However, some features are harder to calculate, such as armour protection and weapon damage. The procedure here is to calculate the maximum value the base model can have and the maximum value for the augmented version. Half the difference between the two is applied as a modifier to the augmented model's capabilities, rounding to the nearest whole value.

For example, a TL 9 advanced autopistol has 135% of the performance of the basic model. A basic autopistol delivers 3d6–3 damage for a maximum of 15 points. 135% of this 20.25, rounded to 20. The difference is 5, half of which is 2.5 (rounded to 3). So this TL 9 autopistol does 3d6–3+3, or 3d6 damage.

The project to create a single advanced item absorbs funds and resources equal to (3d6x5) times the base unit cost. Once a single item has been produced, others can be built at the unit cost.

2d6 roll	Cost Multiplier	Performance*	Bulk or Weight
0–	Project Fails	Project Fails	Project Fails
1	120%	50%	110%
2	110%	60%	105%
3	100%	70%	100%
4	90%	80%	95%
5	90%	90%	90%
6	90%	100%	85%
7	80%	105%	80%
8	80%	110%	75%
9	80%	115%	70%
10	75%	120%	65%
11	75%	125%	60%
12	75%	130%	55%
13	70%	135%	50%
14	70%	140%	45%
15	70%	150%	40%
16	60%	155%	35%
17	60%	160%	30%
18+	50%	175%	25%

Example: The Referee decides to invent a new ground car, an advanced TL 9 design. This is pretty much at the outer edge of ground car design – further improvements in technology produce minimal returns. The Referee wants to improve three factors of performance (top speed, acceleration and range before refuelling) as well as creating a cheaper car. This is a fairly ambitious project, attempting to improve four factors. Modifiers to each 2d6 roll are a +7 for Tech Level and –6 for the number of factors, making a net +1 on the roll.

First, the Referee rolls for cost. A fairly poor 4 comes up, modified to 5. The vehicle will cost 90% of base price. For a ground car this is Cr. 6,000, so the unit cost for the vehicle will be 90% of 6,000, or 5,400 credits.

How good is this improved vehicle? Rolling for top speed the Referee gets a 5 (modified to a 6), which is worth 125% of base capability. A TL 5 ground car can make 150 kph, so this TL 9 model will manage 187.5 kph. Acceleration comes up a 7 (modified to 8), or 130% of base. Range before refuelling is necessary is also 130% better due to a modified roll of 8.

The end result is a car which is a bit cheaper, accelerates faster and has a higher top speed and goes further than the standard model on a single fuelling. The improvements are modest but there is only so much that can be done with internal combustion technology.

Building Custom Items

Normally when a character wants to create a variant item, it is simply a matter of choosing a number of optional add-ons and adding them to the final price and weight of the item. The assumption here is the character is selecting standard fittings from an available range and having a gunsmith (or similar craftsman) fit them, or else buying an item with the full options package.

However, it is possible to design and build a weapon or other item from the ground up. Ideally this allows the creation of an integrated system, though it can also produce turkeys. The system is very simple. Select a base model to work from, decide what the desired outcome of the modification process is to be and use the table below to determine the outcome.

The results of custom design at any given Tech Level are not as impressive as using higher tech materials or techniques but both processes can be combined. In other words, it is possible to design a TL 9 revolver with various improved features, then use this as the basis for the custom design process. It is not permissible to use either process more than once (so it is not possible to custom-design a weapon, implement it at a higher TL and then custom redesign it) as this process assumes all attempts to make the design work have already been made.

If standard options are to be included in the item, such as gyro-stabilisation on a weapon, then the cost and mass of these upgrades must be added to the base values for the item before the custom design attempt is made.

As with higher tech items, the more factors which are to be improved the greater the difficulty of the project. Most custom devices attempt to integrate several additional features at a cheaper cost, lighter weight, or both.

Unlike the higher tech items table, it is necessary to trade-off one factor for another. For example, if a character wants to customise an air/raft to go faster and carry a greater load, he can trade these factors off against increased cost. A +2 modifier can be applied to any factor (or can be split between 2 factors) in return for a –3 modifier somewhere else.

The table below assumes a small-scale project to create a single device in a typical workshop. The project costs 2d6 times the base cost of the device but once a working prototype is in hand additional devices can be built at the unit cost.

Factors that can be altered include but are not restricted to: Cost, Mass, Performance (such as damage, armour protection, top speed, acceleration, reliability)

Determine the final cost of one item and its performance, size and so on using the table opposite. Roll for each item in the table separately.

The 2d6 roll is modified as follows:

- + best relevant skill level, for example Engineer (electronics) for a device using electronic systems.
- 1 per additional accessory, for example a laser sight and secure weapon feature is 2 accessories.
- 3 per +2 modifier applied elsewhere.

This process tends to result in improvements in the desired area at the cost of problems elsewhere. This is reasonable – a cheap weapon might be unreliable and a powerful ground car might be expensive. However, a bit of luck and a high skill level can offset the disadvantages.

If any roll (for cost, performance, bulk or reliability) comes up a modified value of zero or less, the project is a total failure. It must still be paid for in full. The character can try again once the cost is paid but must start from scratch.

It is necessary to roll for cost, reliability and bulk/weight for all custom-design projects. Unlike the creation of higher tech items it is assumed major design changes are being made and the outcome is therefore more variable.

2d6 roll	Cost Multiplier	Performance*	Bulk or Mass	Reliability
0-	Project Fails	Project Fails	Project Fails	Reliability
1	500%	10%	300%	Project Fails
2	400%	25%	250%	6**
3	300%	40%	200%	5**
4	250%	50%	175%	4**
5	200%	60%	150%	4**
6	150%	70%	125%	3**
7	100%	80%	100%	3**
8	90%	90%	95%	2**
9	80%	100%	90%	2**
10	70%	105%	85%	1**
11	60%	110%	80%	1**
12	55%	115%	75%	-
13	50%	120%	70%	-
14	45%	125%	65%	-
15	40%	130%	60%	-
16	35%	135%	55%	-
17	30%	140%	50%	-
18+	25%	150%	40%	-

Performance, Cost, Bulk and Reliability are as compared to the standard item.

* More than one type of performance can be enhanced. For example, top speed of a vehicle is one type of performance, range at cruising speed is another, as is acceleration.

** The device has one or more quirks (as indicated by the number in brackets). Roll on the Device Quirks and Features Table for each quirk, disregarding duplicated results.

Performance for custom items is calculated in the same way as for higher tech items. In the earlier example, a character had created a TL 9 autopistol doing 3d6 damage. He now uses this as the basis for a custom weapon with various gadgets built in. The performance of this weapon is rolled for (even if there was no deliberate attempt to upgrade it) and comes out at 115%. Maximum damage for the TL 9 autopistol is 18; 115% of this is 20.70, rounded to 21. Half the difference is 1.5 points (rounded to 2), so the character now has a high-tech autopistol doing 3d6+2 damage. It is not possible to improve it further but a new project could be started to create a different weapon, whose characteristics might be better or worse.

Quirk Descriptions:

Dangerous to use: Every time the device is used there is a chance (roll double-1 on 2d6) a disaster occurs. The device will explode, catch fire or otherwise fail in a hazardous manner.

Highly Unreliable: Each time the device is used, roll 2d6. If the device has been carefully maintained, the user may add his relevant skill level. On a roll of 8+ the device functions normally. Otherwise it suffers a breakdown requiring dismantling in a workshop to fix.

Slightly Unreliable: Each time the device is used, roll 2d6. If the device has been carefully maintained, the user may add his relevant skill level. On a roll of 4+ the device functions normally. Otherwise it suffers a breakdown that requires dismantling in a workshop to fix.

Device Quirks and Features

2d6 Roll	Quirk
2	The device is dangerous to use.
3	The device is highly unreliable however well maintained.
4	The device is unreliable however well maintained.
5	The device is slightly unreliable unless carefully maintained.
6	No serious quirk.
7	The device looks ragged and roughly finished.
8	No serious quirk.
9	The device is unexpectedly poor.
10	The device is unexpectedly good.
11	The device looks fabulous and functions as expected.
12	The device is wholly unsuitable to its purpose.

No Serious Quirk: The device has a suspected flaw which turns out to be trivial.

Ragged and Roughly Finished: The device is not pretty but it works OK.

Unexpectedly Poor: Choose any one of the factors which have been modified in creating the custom device. Roll 1d6 and apply this as a negative modifier to the existing roll to create a new value, treating less than 1 as a 1.

Unexpectedly Good: Choose any one of the factors which have been modified in creating the custom device. Roll 1d6 and apply this as a positive modifier to the existing roll to create a new value.

Looks Fabulous: The device is nicely finished and aesthetically pleasing, more by accident than by design.

Wholly Unsited: The device seems fine until it is tested, at which point it is realised the device will not do its job usefully, though it will function in a marginal fashion. For example, an air/raft than can only reach a height of 2m, or a handgun fires just one round before jamming.

Custom Design Example: A character wants to create a custom TL 8 flak jacket with a built-in chemical alarm system. The flak jacket has an armour value of 6, costs Cr. 300 and has a mass of 2kg. The chemical alarm system costs Cr. 250 and has a mass of 500g. Thus the basic chemical-alarm-clipped-to-a-flak-jacket combination costs Cr. 550 and has a mass of 2.5kg.

Unsatisfied with this, the character decides to combine the two while increasing the armour protection of the flak jacket and getting the weight down. There has to be a tradeoff somewhere, so he decides the cost can be as high as necessary.

The character has a relevant skill in engineering (electronics) at a value of 2 and can use this on all rolls across the board while he integrates the alarm with his body armour. He also has a -1 modifier for the one accessory and wants to try to reduce weight whilst improving armour protection. He decides to apply a +2 modifier to armour protection and split a second +2 modifier between protection and weight reduction (+1 each). This requires two -3 modifiers for a total of -6. The character assigns 2 points of this to reliability and 4 to cost.

Unless the project fails, the character will manage to integrate his accessory (the chemical alarm) into the flak jacket where it will probably function well enough (quirks permitting).

The character is now ready to make his rolls and find out if the project is a disaster. Across the board his modifier is +2 (skill), -1 (1 accessory), for a net +1. This is applied to all rolls below:
Cost has a modifier of -4 for a net -3. Roll is a 7, modified to 4. Cost is 250% of base.
Performance (armour protection) has a modifier of +3 for a net +4. Roll is a 10, modified to 14. Performance is 125%.
Bulk/Mass has a modifier of +1 for a net +2. Roll comes up a 9, modified to 11. Mass is 80% of base.
Reliability has a modifier of -2 for a net -1. The roll comes up a 7, modified to 6. The device potentially has 3 quirks.

The character has managed to create an integrated flak jacket/chemical alarm. It is horrifically expensive though, at 250% of base or 1,375 credits. This is the base price to make one now the project is complete - the project to create the prototype cost 2d6 times as much. A roll of 8 results in the character spending 11,000 credits on his pet project! Presumably he ruined a lot of components along the way. On the plus side, he can sell his nifty new flak jackets for whatever he can get for them. If this is more than Cr. 1,375 then he might recoup some of his investment.

The performance of the flak jacket was determined at 115% of base. 115% of 6 is 6.90, rounded to 7. So the character's custom flak jacket also protects him a bit better than a standard one.

Base mass of the components was 2.5kg. The new flak jacket masses 80% of this, or 2kg.

Reliability might be an issue. The device has three quirks. Rolling these on 2d6 the character gets a 7, a 5 and a 9.

7: The end result is a bit ragged and looks unfinished. This does not affect function though.

5: The device is somewhat unreliable. The Referee decides this applies to the chemical alarm, though a flak jacket could shed pieces of itself if this seemed like a suitable outcome.

9: Unexpectedly poor. Oh dear. The character has to pick one factor and apply a 1d6 modifier to it. He decides on mass and gets a 5 on the roll. So now the mass roll is treated as 11-5, or 6. Mass is 125 of base, or 3.125kg.

The upshot of all this experimentation is the character has sunk a lot of money into creating an item which does what he wants it to most of the time and protects him a bit better than the standard model but weighs more and costs a lot. Such is the nature of experimental projects.

Understanding Technological Items

Often the function of a technological item is fairly obvious. Even if the user does not know how it works, he or she can be shown how to use most devices. Almost anyone can operate a light switch and most people could eventually be taught to drive a ground car.

Someone who is familiar with an item at one Tech Level can usually operate a higher (or lower) tech version after just a quick glance, provided the mode of operation is similar. A traveller from a TL 6 world who picked up a TL 8 autopistol would have no problem operating it once he found the safety, magazine release and similar mechanisms. Chances are he would have little difficulty with a laser pistol as well, though it could take a bit longer to figure out the controls.

Devices from a much higher Tech Level or which use a previously unseen technology present greater difficulties. Sometimes the broad function of the device is fairly obvious but there may be no indication of how to get it to do anything. Some devices are utterly incomprehensible.

Alien technology represents the greatest challenge because it may bear no resemblance to items with the same function built for other races. As a rule, similar physiology tends to result in recognisably similar devices but this is not always the case. An item made for a creature with six tentacles rather than two hands may baffle human scientists for some time.

Perhaps the hardest technology to understand involves psionics or some other form of remote control. A device intended to interface directly with the mind could have any shape or form, as could a device intended to be remotely operated by radio.

When trying to decipher unknown technology, there are five stages which must be passed through:

- The general function of the device, for example 'It seems to be a weapon.'
- How to make the item perform its basic function, for example getting one channel on a radio.
- Full functionality, for example gaining complete control of a vehicle including the heater, wipers, stereo system and driving controls. Able to reload or refuel an item.
- Ability to perform basic maintenance and repairs.
- Complete understanding, for example fine-tuning the hover height on a janitorbot to suit local conditions and figuring out why it is not picking up fluff from the carpet properly.

Most people do not get past stage 3 with most of the technology they use in daily life.

To understand an item, a character may use his best relevant skill, he can select which skill to use so long as it is applicable. For a communications device this could be Electronics, Comms or possibly Engineer (electronics). Usually the relevant skills will be Science, Engineer, Mechanic, Comms, Computers or something similar but other possibilities exist. If the character has no idea what the device does, he cannot select a skill and can only use raw intelligence to take a best guess. However, much of the time the basic function is obvious.

When figuring out a device, the character must first determine how long the attempt will take, then try to do it. In each case he must roll 2d6 on the table below, adding the character's Intelligence modifier and relevant skill.

The first modified 2d6 roll indicates how long the character must spend puzzling the device out. Once that time has elapsed (assuming he spent it trying to work the device out), he may make the second roll. Read off the result on the chart:

X: The character has suffered a mishap. He may have broken the device, suffered an accident or gained a totally incorrect impression of what it does. The Referee should determine the actual outcome.

N: The character has not attained this level of understanding.

Y: The character has attained this level of understanding. All future attempts to comprehend the device further gain the bonus noted at the top of the column. For example a character who now knows the

general function of an item gains +1 on future rolls to determine its function.

Some very complex devices have multiple layers of understanding associated with them. Gaining 'complete understanding' may lead to the realisation that the device does more than previously supposed. A new attempt can be made to understand these additional properties.

The following modifiers apply to both time and success rolls:

Trivial differences from a known technology (such as a TL 9 autopistol to a TL 7 character): +6

Minor differences from a known technology (such as a gauss pistol to a TL 7 character): +4

Moderate differences from a known technology (such as an energy weapon to TL 3 character who has seen muskets): +2

Major differences to any known item (such as a ground car to TL 2 character): 0

Device is unfamiliar but can be recognised from a description or has been seen before (such as a hand radio to TL 2 character who has heard offworlders have 'talk boxes'): -2

No idea what the device might be (such as an air/raft to a TL 1 person who has never even heard of one): -4

Device made by people of same species and broadly similar culture: 0

Device made by culturally different people of same species: -1

Device made by people of similar species (such as humans/Vargr): -2

Device made by people of different but familiar species (such as humans/K'kree): -3

Device made by people of very different species: (such as humans/Hivers): -4

Device made by extremely different species: (such as an unknown alien race with tentacles rather than hands and arms): -5

Device uses an unfamiliar technology (such as radio or antigravity to TL 2 human): -3

Device uses a totally unknown technology (such as Psionic technology to non-psionic humans): -6

Device is very simple or mechanical (such as a spanner): +2

Device is simple (such as a handgun): +1

Device is fairly complex but contains a fair amount of mechanical parts (such as a ground car): 0

Device is simple but has few or no mechanical parts (such as a radio): -2

Device is fairly complex with few or hidden mechanical parts (such as a contragrav-lifted robot): -4

Device is extremely complex: -6 or more

Additional Modifiers at Referee's discretion, such as for excellent research facilities.

Modified 2d6 Result	Time Required	General Function (+1)	Basic Functionality (+2)	Complete Functionality (+4)	Maintenance and Repair (+6)	Complete Understanding
0-	4d6 weeks	X	X	X	X	X
1	2d6 weeks	N	N	N	N	N
2	1d6 weeks	N	N	N	N	N
3	4d6 days	N	N	N	N	N
4	2d6 days	Y	N	N	N	N
5	1d6 days	Y	N	N	N	N
6	4d6 hours	Y	Y	N	N	N
7	2d6 hours	Y	Y	N	N	N
8	1d6 hours	Y	Y	Y	N	N
9	4d6 minutes	Y	Y	Y	N	N
10	2d6 minutes	Y	Y	Y	Y	N
11	1d6 minutes	Y	Y	Y	Y	N
12	2d6 seconds	Y	Y	Y	Y	Y
13	2d6 seconds	Y	Y	Y	Y	Y
14	1d6 seconds	Y	Y	Y	Y	Y
15	1d6 seconds	Y	Y	Y	Y	Y
16+	A single glance	Y	Y	Y	Y	Y

Example: Brak The Barbarian (from a TL 0 world) grabs a gauss pistol dropped in a fight. He is the same species as the people who made the weapon, so there are no modifiers there. He knows the pistol is a weapon because he has seen it used. This counts as 'might be recognised', so has a -2 modifier. Brak has never heard of gauss propulsion technology, so suffers a -3 penalty ('unfamiliar technology'). The Referee decides the weapon is fairly complex but has several obvious mechanical parts, for no modifier.

Thus Brak has a net -5 penalty to his roll to figure the weapon out. He has no relevant skills but an intelligence modifier of +1, for an overall penalty of -4. He rolls for timing, getting a 10. Reduced to 6, by his penalty, this means Brak will need 4d6 hours of fiddling about with the weapon before he can try to figure it out. He stashes it about his person and goes back to clobbering people with his club.

Later, Brak fools about with the strange device he picked up. After several weeks of idly playing with it in the evenings (and the occasional alarming humming noise or accidental discharge) he gets a chance to figure it out. Brak has a -4 penalty to this roll, as determined earlier.

Brak rolls a 9, modified to a 5. Reading off the chart he finds a Y in the first column ('General Function') but an N in the next ('Basic functionality'). "Hmm..." Brak observes to his fellow barbarians as gauss needles rip through the walls of his hut, "I would say this is probably some kind of weapon." Brak does not yet know how to use his new weapon but he does gain +1 on future rolls to find out and to see how long it will take him.

Permits and Legalities

The question of what items a group of travellers are allowed to own and carry can often be a complex one. Most societies have laws regarding what private citizens can have and even very permissive

societies usually have a rule that owners of property and businesses get to decide what visitors can carry. Just because a weapon is legal on the planet does not mean it is acceptable to wave one around in someone's living room or the local bank.

Local laws only apply within the jurisdiction of the state imposing them. A high-law world forbidding the ownership of firearms cannot prosecute someone for having one on another planet in the star system, unless it owns that world and has jurisdiction there. In practice, some societies ignore infractions of their laws where they cannot be enforced, though they are unlikely to look favourably upon someone who flouts the law just because there is no-one there to enforce it.

Where there is an interstellar state, such as the Third Imperium in the Original Traveller Universe, then this state will normally impose its own restrictions. This creates a problem where worlds are self-governing within the interstellar state. If a person has a weapon which is legal on planet but illegal within the Imperium, whose law applies?

As a general rule, huge interstellar states are not unduly concerned with the private ownership of small arms. Weapons capable of penetrating the body armour used by the state's ground troops are of greater interest and items capable of causing large-scale casualties or disruption are usually restricted.

Thus, the Third Imperium (and many other, similar, interstellar states), prohibits some items and restricts others using a system of permits. Generally speaking, the more accountable an individual is the easier he will find it to obtain a permit for restricted items.

Local governments make their own laws and enforce them as they feel best. If the local law is more restrictive than the Imperial regulations then the item is prohibited in that location. This is no

different to a government allowing miners to own dynamite but permitting a bar owner to prohibit them from bringing it into his place of business.

Where an item is legal on a given world but is not allowed in the wider universe, local law normally applies. In short, a world government has the right to allow its citizens to own automatic weapons if this seems reasonable, even if the Imperium restricts them. However, some items are prohibited wherever they happen to be. A world may have no laws regarding the private ownership of nuclear weapons but the Imperium prohibits them and enforces this law aggressively for obvious reasons.

Generally speaking, most worlds require citizens to comply with the Imperial permit system. Some do not. Normally, when travellers are within the jurisdiction of a world government this does not matter – local law applies unless the item is one of a small number of highly restricted devices and weapons.

The permit system is mainly used to restrict ‘arms tourists’ from going to low-law worlds to stock up on powerful weapons. Some measure of control is deemed necessary to limit such activities. However, the system is patchily enforced. In some regions Imperial law enforcers will routinely ignore the system unless they are given a good reason to become involved. In other areas the system is rigorously enforced.

The permit system allows a Navy boarding and inspection party, for example, to confiscate weapons found during a routine boarding if they are not properly documented. It has also been used to disarm mercenary or militia groups whose activities were considered questionable. It is mainly used in areas away from the jurisdiction of world governments, such as on an unclaimed rockball planet.

The Permit System

As a rule, a society with a strong central authority will prefer not to allow its citizens to outgun its law enforcers and troops, while a more decentralized society may place an onus on its citizens to have suitable weaponry to not only defend themselves but also to prevent the government from getting out of hand. Much depends on the nature of society.

Weaponry and other devices can be separated into five categories. Whatever the law level may be, higher-category weapons will tend to be more strictly controlled or harder to obtain than lower-category ones. The Third Imperium uses the following system and many other interstellar states have a similar one.

As a rule, the more accountable an individual (the more they have invested in the well-being of their society) the easier they will find it to obtain permits for heavier weapons. However even though a character may have a permit to own a given weapon, he may still be prohibited from owning or carrying it in a given locale by the

laws which apply there. The permit system is a blanket across the Imperium and does not supersede local laws.

Possession of a weapon license does not allow a character to ignore local laws. Much depends on the circumstances. A government hiring a properly accredited mercenary unit will normally allow it to retain and use its weapons, whatever laws are in place, since this is necessary for the function desired of the unit. Similarly, bodyguards for foreign dignitaries will usually be permitted to carry weapons.

However, a demobbed Imperial Army soldier will not be allowed to wander around with an assault rifle on a high-law level world without a good reason. Trying to do so is a good way to get that ex-military Category 3 permit revoked and yourself filled full of small but painful holes by people who are permitted to carry weapons as part of their duties...

Obtaining Restricted Items

For mercenary units, registered security professionals and the like, it is often possible to obtain restricted equipment in the course of a contract. In many cases a patron will offer a package of equipment (and the appropriate certification to go with it) as part of a contract. Sometimes this is just for the duration of the contract but often it is part of the unit’s payment. Mercs sometimes refer to a contract of this sort as a ‘gear ticket’. Usually a lower fee is paid in return for access to otherwise-unobtainable items.

Mercs and others with the right certification can usually just order restricted items they have permits for, or stroll into a dealer’s office and bargain for a good price on a batch. However, some items are hard to get hold of even if you have all the paperwork in place. The Referee should decide if the current locale is one where any given item is likely to be available. It seems unlikely plasma guns will be available over the counter on a low-tech world. However, if it is or has recently been, a war zone then some may have come through.

There are two ways to obtain restricted equipment (other than presenting a permit and buying one in the appropriate retail outlet). Both can require dealing with the black (illegal) or ‘grey’ (semi-legal) market.

If a character wants to obtain hard-to-get items in such a way that they are legal (the items are not registered as stolen, even if they have been redirected or otherwise obtained by back channels) then the Broker skill can be used. If the character does not care about the source, Streetwise can be used instead. Items obtained this way may be perfectly legal but then again they might not. They are also more likely to be old, defective or subject to some other problem. Illegal arms dealers are not always renowned for their integrity.

In order to obtain the necessary items, a skill roll (Broker or Streetwise, as noted above) must be made. This roll is subject to the following DMs:

Category 1 Items: Easy (+4)
Category 2 Items: Routine (+2)
Category 3 Items: Average (+0)
Category 4 Items: Difficult (-2)
Category 5 Items: Very Difficult (-4)

If a character wants a restricted item but is not worried about getting the permits and paperwork for it (either because he already has them or else simply does not care) then the roll is made at the normal difficulty. If he wants a permit to go with the item (and does not already have one) then an additional -2 DM is applied. A permit gained this way is for the specific items obtained and does not cover any other items the character may be caught in possession of.

For items which are not restricted (category 1), or for which the character has a permit, it will normally only be necessary to roll if there are supply difficulties. For example, a character trying to obtain half a dozen carbines on a TL 7 world where they are legal can probably just walk into a shop and buy them. If he was on a TL 3 world where they were legal but not locally manufactured, a roll to find a source would be in order.

Category 1: Unrestricted Weapons

Correctly speaking, there is no such thing as a 'Cat 1' permit. No permit is required to own or obtain these items. So long as the weapon is legal in this locality, even someone convicted of weapons-related crime can usually carry it without interference, though some localities place restrictions on felons, which supersede the permit system. Although weapons may be unrestricted in the permit system, local law or custom may still prohibit them.

Category 1 Examples:
All melee weapons (cutlasses, daggers, batons, shock batons and so forth).
Non-Lethal 'Firearms' (Tranq guns, Thud guns).
All bow weapons

Category 2: Civilian Smallarms

To obtain a 'Cat 2' permit, the purchaser must demonstrate "the capability of safe use" either presenting any existing weapons permit or by undertaking half an hour's accreditation and safety training on the range. No actual skill or reason for purchase is required.

Category 2 Examples:
Revolvers and most other pistols, semi-automatic rifles, shotguns and similar non-military weapons.

Category 3: Paramilitary Smallarms

To obtain a 'Cat 3' permit the purchaser must show he or she can use the weapon responsibly and safely, which equates to having an

actual skill level (or default skill from other weapons training) and demonstrate "suitable need". The latter is covered by occupations such as shipboard security operative, bodyguard and so on.

References from employers may be taken. Employment by an accountable person or body (starship captain, corporation, port authority or similar) is desirable. All Imperial Services personnel who are honourably discharged automatically have a General Category 3 permit for weapons and armour, unless it is revoked for criminal activity.

Category 3 Examples:
Light Automatic Weapons (Autorifle, SMG, Assault Rifle, Autoshotgun, Snub SMG).
Some special ammunition (for example HEAP for snub weapons).
Laser pistols, rifles and carbines.
Heavy Ballistic Cloth body armour.

Category 4: Military Equipment

Category 4 weapons are treated much as Category 3 but restrictions are tighter. Service as an accredited mercenary or similar employment is usually required. Imperial personnel leaving the service with a "Weapon" benefit are assigned a permit for its use and ownership and retain this unless it is revoked. Some localities permit such persons to retain their weapon even if normally prohibited by local law but most do not consider even a weapon of honour to be above local law.

Category 4 Examples:
Military Shotguns.
Gauss Weapons (Rifles and Pistols).
Advanced Combat Rifles (ACRs).
Mid-Tech support weapons (grenade launchers, LAWs, Light Machineguns).
Powerful mid-tech weapons, for example Anti-Tank rifles.
Combat Environment Suit.
Military-grade electronics (for example: advanced sighting equipment).
Electronic Warfare equipment.
Military body armour and Combat Armour.
Light military combat vehicles (for example: armoured cars, armoured personnel carriers).

Category 5: Restricted Military Equipment

Category 5 items are only available to accredited mercenary units or personnel with a good record of serving in such a unit, while actively seeking a suitable unit or employer. This does not prevent a merchant captain from shipping quantities of such weapons from one place to another, provided they are properly crated and documented but they cannot be sold without proper permits in

place. Of course, in zero-law areas there is often no-one to enforce such restrictions so the point may be academic unless an Imperial law enforcement agency takes an interest.

Category 5 Examples:

Plasma and Fusion Weapons.

Gauss Support Weapons.

Tac missiles.

Heavy Military Combat Vehicles (for example: tanks, fighter aircraft).

Battle Dress.

Combat Robots.

Prohibited Items

Some items are subject to a blanket prohibition. Special permits are required to possess such items and stiff penalties are in place for those who break these laws. In the Imperium, even governments are subject to these laws and must account for all prohibited items. The Imperial Bureaucracy conducts random audits to ensure compliance.

Examples:

Nuclear weapons.

Antimatter power systems.

Chemical and Biological weapons other than non-lethals (tranquillisers and tear gas).

Starship-grade meson guns and particle accelerators.

Electromagnetic Pulse weaponry capable of large-scale effects.

OTHER ISSUES

Some organizations (such as merc units, Huscarles and corporate security units) and some high-security starships generally have a "Blanket Permit" for weapons use by personnel as directed by the unit's legitimate command staff or employer. Some non-weapon systems fall into these categories and are similarly restricted; for example nuclear mining explosives (cat 5), conventional explosives (cat 3), Starship lasers (cat 3), military-grade starship lasers (cat 4). Use of permitted weapons and equipment in accordance with the organization's remit (such as a mercenary infantry unit involved in combat with the enemies it was hired to fight) is not considered to be misuse of weapons. Similarly, self-defence with legally-held weapons is rarely considered to be a crime.

Wearing Armour in Public

As a rule, body armour is not specifically prohibited in local laws. However, openly wearing armour in public may be grounds for interest from local law enforcers. Military armour (such as combat armour and, of course, battle dress) is generally prohibited anywhere

there is law (law level 1+) other than for combat troops, mercs and the like who have a legitimate reason for wearing it. The fact a merc unit is on combat duty 200km away is not normally considered an acceptable reason for wearing armour on a weekend pass into the capital's night spots.

Lighter armour, such as cloth or a flak jacket, would give anyone spotting it grounds for concern (why does this person think he needs ballistic protection in our local bank?) and is not normally permitted at law levels 4+. Reflec and Ablat are generally considered to be similar. Mesh and Jack armour are more acceptable and are generally permitted at all law levels, so long as there is some acceptable reason for owning or wearing it.

Local laws tend to vary somewhat. Many localities permit ownership of any form of body armour but wearing it in situations other than where there is an immediate need or possibility of one is not allowed. Thus a character guarding the group's grounded starship in his cloth armour might not even get a second glance but if he strolls into a bar after his shift without removing it then people will become alarmed.

The following summary should act as a rule of thumb rather than hard-and-fast rules; local circumstances vary.

Military Armour (combat armour, battle dress): Illegal at law Level 1 and higher other than for permitted persons such as mercs on ticket or local military. Combat Armour is considered a Category 4 (Military) item and battle dress is considered Category 5 (Restricted Military).

Paramilitary Armour (cloth, flak jacket, reflec ablat): illegal at law level 4 and higher, other than for permitted persons such as people working with high-energy equipment (reflec, ablat) or security personnel (flak, cloth). All these items are considered to be Category 3 (Paramilitary) items. Obtaining a permit for such equipment is not very difficult.

Jack and Mesh are in some areas not considered armour at all but necessary protection from wildlife, thorns and the like and are considered tools of the outdoor-worker's trade. In more settled areas they still have many legitimate uses so purchase is not normally restricted. Both types are considered Category 1 (Unrestricted) items for purposes of obtaining a permit (one is not needed). This does not mean it will always be acceptable to fool around in a mesh jacket. Local law enforcers or militia will take an interest in people who do not conform to polite custom regarding wearing armour – even if the characters do not know what the custom is.

SPECIAL CASES

Some activities connected with equipment found in this book require additional rules to permit resolution.

Hacking and Associated Computer Misuse

Hacking into the computers of the opposition is a powerful and useful tool for an adventuring band but it can be a bit too powerful if the Referee is not careful. If an adventure can be completed by remote control from a swivel chair, some of the romance is lost.

However, hacking is not an easy business. Many computer networks use physical or virtual isolation, requiring a hacking attempt be made from a limited number of sources. These are usually within secure locations. There is an adventure waiting to happen as the travellers try to get their hacker into a government building so he can hack their network.

Other obstacles to hacking are found within the network. Most secure computer systems have an intrusion monitoring system which will, at the very least, shut off a data link and warn an operator. Some will automatically inform local law enforcement, sometimes without any sign the intrusion has been detected.

The most effective anti-intrusion systems are known as ICE (Intrusion Countermeasures Electronics). Technically a simple intrusion-alert programme counts as ICE but normally the designation is used only for systems capable of making a 'robust' response.

Most ICE programmes can make a limited number of responses on their own initiative and require operator authorisation to do anything really aggressive. 'Autonomous ICE' is viewed with suspicion in most areas as it is not infallible and can occasionally damage the system it is designed to protect.

Aggressive ICE can make a range of responses. It may be able to track the intrusion and alert a security team to respond, or may simply slam down a virtual portcullis to keep the intruder out. Very sneaky systems can redirect the intrusion programme into a virtual version of the target system and stall it while the ICE programme studies the intruder and makes a response.

Some ICE programmes are capable of attacking the intruder. This is normally a matter of introducing a viral programme to the intruding system to scramble it or extract information. Sometimes ICE can do something more graphic, such as overloading a power system to cause physical damage to the attacking computer.

Anyone with computer skill at any level can obtain simple data from a system designed to provide it (for example selecting from a menu of topics on a data terminal) but where there are difficulties, skill rolls are necessary.

Getting comprehensive data from a system is an Easy (+4) task if the only challenge lies in operating the search system. Typing words into a search engine is not much of a challenge, though figuring out the right ones can be. If data is concealed but not protected by security, the task to find it is Difficult (-2) and can take several hours.

Once security comes into play, getting into the system requires more than one stage:

Obtain access to the system. This may require physical access to a terminal connected to it, or 'spoofing' a system into thinking a remote terminal has access privileges.

Defeat active security measures, such as ICE.

Break through security and encryption.

Find the data, implant the worm programme, or whatever the character came to do.

Conceal the intrusion, if appropriate.

Stage 1 might require skills which are nothing to do with computers. All other tasks use Computer skill. The hacking attempt is abstracted as a Very Difficult (-4) skill roll with the character's Computer skill as a modifier. This assumes good-quality security measures are in place. Additional modifiers are as follows:

Very poor security+: +4

Poor security: +2

Unusually good security: -2

Excellent security: -4

The level of any ICE programme present acts as a negative modifier to the attempt, for example ICE-3 imposes a -3 penalty.

The difference in model number between the computer being used for the hack and the one being hacked is also imposed as a modifier. If the hack is being done 'internally', being carried out on the target's system's own terminals, obviously there will be no model number modifier.

As already noted, the target to succeed is Very Difficult (-4). A successful roll means complete success. It is necessary to succeed by 2 or more points (for example rolling 10 or more when needing an 8 to succeed) in order to conceal the hack.

If the roll is failed by 1 or 2, some data is obtained or the hack is otherwise partially successful but the hack has been detected.

If the roll is failed by 3 or more, the hack has failed and any security system present will probably have noticed it. The response depends on the systems in place.

Sensors and Electronic Warfare

As soon as combatants begin making use of the electromagnetic spectrum for military purposes, electronic warfare becomes a useful force multiplier. It can be used for a variety of purposes including (but not limited to): listening in on or jamming enemy communications, locating enemy units, gathering intelligence about those units, guiding weapons and defending against guided weapons.

Electronic warfare is governed by Comms skill. Use of sensor equipment for direct combat purposes is governed by Sensors skill.

Electronic Intelligence Gathering

The most basic form of intelligence gathering is simply to try to detect emitters such as radios and radar systems. To detect an emitter within its range (within the range a radio can communicate at) is an Easy (+2) task, with the following modifiers:

- + Communications skill
- + The Electronic Warfare rating of device in use (this is zero unless otherwise noted)
- Electronic Warfare rating of the hostile device
- + 2 if the device is a sensor rather than a communications device
- + 6 if the device is a jammer

This roll detects emissions and can only be made if a suitable detector is available. Most electronic warfare-capable systems can 'listen' like this but civilian radios and communicators cannot unless modified. Detection of emissions in this manner is passive, it cannot be detected by electronic means as there are no emissions from the listening device. A transmitter that is turned off cannot be detected in this manner. Line-of-sight laser communicators cannot be detected except by being directly on the beam's path, which is unlikely.

To identify an emitter requires a second Communications roll with the same modifiers. This is a Difficult (-2) task. Failure indicates an emitter has been detected and its general characteristics are known (radio-frequency, microwave and so on). The actual type of device (communicator, jammer and so on) is not known unless the roll is made.

To listen in on enemy communications requires a Formidable (-6) Communications skill roll. Even then, encrypted communications can only be recorded for a later attempt to decrypt the transmission.

COMBAT SENSORS AND WEAPON GUIDANCE

Most sensor systems can be used in either Active or Passive mode. In Active mode, the sensor set emits energy and detects the effects of that energy (such as radar or sonar energy bouncing back from a contact). This makes a platform using active sensors easier to detect but allows non-emitting targets to be detected. In Passive mode, sensors simply try to pick up emissions from the target, or energy from other sources bouncing off it. This does not make the platform more likely to be detected.

For example, the Mark 1 Eyeball is a passive sensor. It detects light from other sources falling on the target object. Using your eyes to look for enemy units does not make you more visible. However, if it is dark then you will not be able to see anything. If you were to turn on a flashlight, you would now be using active sensors, so to speak. Your eyes could pick up the light from the flashlight falling on the target but even if you failed to spot an enemy, he would most likely see the light you were shining around you.

Some sensors are always Active. Some are always Passive. Some can be both. For example, a radar set can usually be used to detect emissions without making any of its own. Some sensors can be 'made active' by external means, such as a seismic sensor can be used in a more active mode by detonating charges in the ground. The sensor itself remains passive but the detonations make the act of seismic surveying rather more noticeable.

Sensor	Active	Passive
Visual/Camera	N	Y
Radar	Y	Y
Sonar	Y	Y
Thermal	N	Y
Neural	N	Y
Ladar	Y	Y
Gravitic/Densitometer	Y	Y
Seismic	N	Y
Motion	N	Y
Magnetic	N	Y

Sensor systems are most commonly used to detect and/or obtain information on a target. This requires an Average Sensors skill roll with the modifiers listed below:

- + Skill level of operator
- + Sensor rating of the system
- + 2 if the target is already being tracked by a friendly sensor system
- Jamming effects (see below)

If the roll is made, the target is detected and can be tracked until tracking is lost. This is usually as a result of moving out of distance, jamming or similar countermeasures. In this case the target will simply be a 'blip' on the screen.

If the roll has an Effect of 2 or more, some data on the target can be obtained. Its general type (such as grav armoured vehicle) can be discerned. If the roll has an Effect of 4 or more, reasonably complete data can be obtained. For example, a blip might be resolved as 'a formation of three grav vehicles, probably Ambrose class light attack sleds'. Some details may not be known with certainty but such an analysis will normally be more or less correct.

The type of data which can be obtained is limited by the sensors available. A neural activity sensor can pick up a vehicle crew but not the craft or its power emissions, for example.

Some sensor systems can be used to aim or guide weapons. This requires a suitable sensor system. For example, a shell-tracking radar system could be used to obtain targeting data for an artillery battery which is attempting counter-battery fire. By tracking enemy shell trajectories and extrapolating them back to the target, it is possible to lay the guns even though the target cannot be seen.

When aiming unguided weapons like artillery using a sensor system (a TL 5 battleship using radar to guide its guns, for example), it is

necessary to make an Average Sensors skill roll with the following modifiers:

+ Skill Level.

-1 or -2 for low-level general interference (such as atmospheric conditions, or a lot of local radio-frequency activity).

+ Sensor rating of the sensor system in use.

- effects of area jamming and decoys (see below).

If the Sensors roll is made, any gunners the sensor operator can communicate with gain a bonus of +1 to hit rolls, benefiting from the 'sensor lock'. An additional +1 is added every full 2 of Effect on the sensors roll. For example, if the sensors officer makes his roll by 3, he passes this data on to the gunners who gain +2 on their hit roll

Sensors are more useful when operating with weapons which can be guided in flight. A gunner firing guided weapons gains a positive DM equal to the Effect of his Sensor roll but only to his gunnery check at launch. Once in flight the guided munitions have their normal chance to hit (see Terminally Guided Weapons) under Artillery Combat. This does not affect Smart battlefield weapons, which have their own rules detailed under Artillery Combat.

A single sensor operator can only provide guidance to one group of weapons. Thus a sensor operator can assist a battery of six artillery guns, or a single missile gunner but not both at the same time.

JAMMING AND DECOYS

It is possible to jam communications and enemy sensors by various means. The simplest is to transmit a powerful signal which 'whites out' the relevant frequencies, making it impossible to obtain useful information from them. This is known as Jamming.

Jamming is very much an Active process. Any platform (vehicle, aircraft, ship or installation) using active jammers will automatically be noticed by any receiver within range. For this reason, jamming transmitters are sometimes mounted on decoys and launched away from friendly units, though this can get expensive.

Most jammers are used to create general interference which impedes enemy communications and sensor operations. Jammers of this sort impose a negative DM (usually -2) on all Comms and Sensors skill rolls within their area of effect. For every 2 TLs difference between the jammer and the system trying to punch through, the DM is increased (or decreased, if the jammer is of lower Tech Level) by one. So a TL 6 radio trying to punch through interference caused by a TL 13 jammer is subject to a DM of -2 plus 1 per 2 full Tech Levels difference, an additional -3, for a total DM of -5.

Some jammers have specific effects. Communications jammers can be used to interfere with one specific frequency if this is desirable. More commonly, a jammer can be used to try to break a targeting

lock or cause a smart homing weapon to malfunction and miss. A dedicated jammer imposes a base DM of -4, plus 1 per 2 full Tech Levels difference.

Each jamming system with an operator or an automated control system can make one attempt to break a targeting lock or to defeat a guided weapon. To break a targeting lock it is necessary to make an opposed Sensors skill roll against the sensor operator maintaining the lock. The jammer system imposes a DM as above: -4 plus an additional -1 per 2 full Tech Levels as a modifier to the enemy operator's roll.

If trying to defeat a terminally guided weapon or smart missile, treat the weapon as having a skill level of 1 and no stat modifier. Additional DMs for Brilliant (+2) and Genius (+4) weapons apply. Success indicates a single weapon has been defeated and will not hit the target.

Decoys can also be used to protect against guided weapons. Rather than try to model the effect of each decoy, this is abstracted as follows. A decoy system has a number of 'shots' available and can be used that many times before needing replenishment outside of battle conditions. One decoy salvo can be fired each round, imposing a -2 DM on all attempts to hit the target using guided weapons, including smart weapons. A smart weapon missing due to decoys is expended and cannot re-attack.

ARTILLERY COMBAT

Some artillery weapons are capable of direct fire only. Energy weapons such as lasers fire in a completely flat trajectory and are not noticeably affected by gravity conditions. They are limited to line of sight only. Most high-velocity projectile weapons such as tank guns do fire their projectiles in a ballistic arc but it is not high enough to allow them to shoot over intervening obstacles. These weapons therefore are also limited to line of sight range.

Some artillery weapons, such as rockets, missiles, mortars, howitzers and the like, are not limited to line of sight as they can lob a projectile in a high arc or fire a powered weapon. Some artillery weapons can be guided or can self-home on a target.

Artillery weapons are capable of shooting much further than their line of sight but without external assistance there is no real chance of hitting a chosen target. The shell, bomb or warhead will hit something, of course but random shelling is at best a means of harassing an enemy. More often it is simply an efficient means of getting rid of ammunition.

In order for artillery fire over greater than line-of-sight range to be effective, it must either be somehow guided or else targeting information must be provided. The simplest way to do this is to fire to map references. The gunner knows where he is and is told where

the shells are supposed to come down. A bit of maths later, he is ready to fire. Of course, this sort of shelling is not very accurate. Shells fired by two guns sited side by side may come down hundreds of metres apart.

Shooting to a map reference is fine for bombarding static targets or harassing an area such as a section of road but if there is any sort of movement involved then the services of a forward observer are needed. The observer needs to be able to see the target area and to communicate with the gunners. He can then call in corrections as the guns fire, walking the impact area onto the target. This still does not guarantee a direct hit of course. Indirect fire is not very precise.

Hitting the Target

To put artillery shells into the general target area requires an Average check on the character's Heavy Weapons (Field Artillery) skill. This assumes the weapon is firing at less than a quarter of its maximum range. At greater ranges, the difficulty increases:

Range	Difficulty
Up to ¼ Maximum	Average
¼ Maximum up to ½ Maximum	Difficult (-2)
½ Maximum up to ¾ Maximum	Very Difficult (-4)
¾ to Maximum Range	Formidable (-6)

If a forward observer is available, he can use his own Heavy Weapons (Field Artillery) skill to apply corrections to each salvo after the first. To do this, he must be able to both see the target area and communicate with the gunners. After the first salvo, the forward observer can make a Heavy Weapons (Field Artillery) check. If successful, the gunners' next shot gains +1 modifier to hit. This is cumulative over several salvos, up to a maximum of the observer's skill level. However, if the gunner fails an attack roll at any point, the process of walking the artillery onto the target must begin once again.

A 'hit' on the gunnery roll does not mean a direct hit has been scored on the target with indirect fire. Instead it means the shell, rocket or whatever has arrived close enough to the target to have some effect. Most artillery weapons have a radius of effect and deliver damage (or other effects) within that area. Once a hit has been determined with artillery, it is necessary to find out how serious the effects will be.

Roll 2d6 if a 'hit' is scored. On a straight double-six the target has suffered a direct hit and damage is doubled. On 8+, the round comes close enough to do full damage. On a roll of 7 or less, the round buries itself in the ground or detonates far enough away from the target that damage is halved. On a straight double-1, the round is a dud or otherwise fails to have any effect due to some lucky circumstance.

This system gives more direct hits and more duds than is 100% realistic but this is a roleplaying game in which artillery fire is a dramatic circumstance. It is not intended to allow an accurate reflight of the battle of Stalingrad or the New Zemytsk uprising.

A missed attack roll means the shell did not hit the target area. It will have come down somewhere but it is not necessary to worry about exactly where. It can be assumed it has contributed to the general mayhem and unhealthiness of the battlefield.

2d6 Roll	Effect
2	No damage; the round is a dud (pewh)!
7-	Halved damage; nearby hit (Secondary Radius)
8+	Normal Damage; close hit (Primary Radius)
12	Doubled Damage; direct hit!

Protection and Cover

Characters who are inside hard fortifications, such as a hardened concrete bunker, are well protected against most artillery rounds (gas will still come in through the firing slits, for example). In this case the bunker is attacked as if it were a vehicle and the people inside are treated as crew. The same applies, obviously, to vehicles. In many cases it will not be worth rolling for area effect attacks but a direct hit may penetrate a bunker.

Characters who are in good but not hardened cover (such as a trench or a sandbagged position) must roll 2d6 and take no damage if they roll 8+ or half damage if they fail to do so from artillery attacks using typical blast and fragmentation effects. Combat Engineering (fortifications) may be used as a DM to this roll. Flame and gas weapons deliver normal damage. On a direct hit the round has entered the trench; it provides no protection.

Characters who are in light cover such as crouching behind a car or tree may apply a modifier of -1 to -3 at the Referee's discretion when determining artillery effects. However, a straight 12 is still a direct hit and a result of less than 8 is treated as half damage. 'Dud' effects only happen on a straight double-1.

Random Shelling

Characters who feel the need to wander around areas being shelled (or are fighting on a battlefield under semi-random shellfire) may be attacked by area fire. If an abstract system is needed, throw 2d6 each round and on 10+, the character is sufficiently close to an impact point to be thoroughly alarmed. A straight 12 indicates the character is within the burst radius of an artillery weapon. The Referee should pick a weapon of a suitable size based on what the opposition has available and determine the effects as above.

Direct Fire With Artillery Weapons

Damage ratings for artillery weapons assume the usual practice of lobbing shells about and hoping they come down somewhere near the target. Direct hits with artillery are uncommon; it is more usual to gradually wear down the target with bombardment than to drop a single shell right on top of it. Thus artillery weapons have relatively low damage ratings considering the size and velocity of the projectile.

Some artillery weapons can be used in direct-fire mode ('over open sights' as artillerymen say). They tend to be much less effective in this role compared to high-velocity weapons of the same calibre designed for direct combat.

Some weapons, such as mortars, cannot be used in this manner. Artillery guns, howitzers, rockets, missiles and grenade launchers can be used for direct fire. However, the lower velocity of these weapons imposes a penalty of -2 on attack rolls. If a hit is scored, it is treated as a direct hit (doubled damage) unless the weapon is using specialist ammunition. For example, some artillery guns can fire 'canister' rounds for anti-personnel work at close range. Effects of special ammunition are dealt with in the Artillery Weapons section of this book.

Guided Weapons in Indirect Fire Mode

If terminally guided weapons are in use, then they can guide themselves onto the target once they reach the general area. Weapons of this type include self-guided artillery shells and missiles and weapons which can home in on a designator used by someone who can see the target.

Roll to hit as normal. Success indicates the weapon has reached the target area. If it is a self-homing ('smart') weapon then roll 2d6. On 8+ the weapon scores a direct hit unless it is defeated by point-defence. If the weapon is being guided onto the target by someone using a designator of 'flying' the weapon from a remote station, the operator makes a skill roll. If successful, the weapon scores a direct hit. A guided weapon failing at the terminal guidance phase rolls for effects as normal. It may still score a direct hit by a fluke.

Guided Weapons in Direct Fire Mode

Guided or 'smart' weapons fired directly at the target automatically arrive in the target vicinity and begin the terminal guidance phase as above. Thus only one roll (skill for the operator or 8+ for the smart weapon system) is needed to determine a hit or miss. Success indicates a direct hit. Since most guided weapons (especially anti-armour weapons) use very focussed shaped charges, there is often little or no secondary effect so rounds that miss can be disregarded.

Area and Point Defence Fire

A target defended by point-defence weapons, or within the area defence envelope of a suitable system, can gain protection from some direct and indirect fire weapons. Rockets, missiles and indirect-fire artillery shells can be defended against in this manner. Direct-fire weapons such as tank guns cannot.

An area defence system can attack any suitable target (those named

above) within its area of effect. A point defence system can only protect a single target (the one it is mounted on or next to) under most circumstances. It is possible to position point-defence weapons so incoming attacks have to go right over them but this is not usually something which can be achieved on the battlefield. Some point-defence weapons can attack vehicles and personnel in addition to their missile-defence role but this makes them unavailable for the rest of the minor action.

Each round an area defence system can attack a number of targets equal to its Area Defence rating (see specific equipment listings). A point defence weapon can attack a number of targets equal to its Point Defence rating. Area Defence is conducted first, with point defences attacking any 'leakers' coming through the first defensive layer.

Area and Point defences must roll to hit as normal. Missiles, rockets and shells are assumed to be destroyed by any hit, though weapons that can attack other targets are rated for damage as normal.

Target	Difficulty	Damage
Artillery Shell	Formidable (-6)	Destroyed
Fast or small missile	Very Difficult (-4)	Destroyed
Typical missile	Difficult (-2)	Destroyed
Personnel or Vehicles	As normal combat	Normal Damage

STUNNERS AND SHOCK WEAPONS

When a target is hit by a stunner or shock weapon (whether the effect comes from impact, electrical shock or something more esoteric), damage is rolled as normal. If all the damage is resisted by armour then there is no further effect. Any damage penetrating is not applied to Endurance and other stats in the conventional manner. Instead the target must make an Endurance check with a negative DM equal to the number of points of damage suffered.

Failing this check means the character is stunned or becomes unconscious, usually for 2d6 minor actions. On a straight double-1 on this check, the target also takes the stunner's damage in the normal manner; this may kill him. Passing the check means the character is hurt and annoyed but not stunned.

Chemical Weapons

Chemical Weapons will normally attack a character in one of three ways: by skin contact, by injection or by breathing in the toxin. It is also possible to ingest (eat or drink) the toxic compound but this is unlikely under combat conditions.

Injection requires the toxin get into the character's bloodstream through his skin, for example on the stinger of a scorpion or as a coating on a needle fired from a weapon. An attack failing to penetrate armour cannot inject a chemical.

Thus the character must take at least 1 point of damage from a chemical-coated bullet (or other weapon) for the toxin to have a chance of affecting him. A character who is injected deliberately with a hypodermic needle need not take damage but it will be necessary to make an unarmed attack if he is resisting. Needle attacks of this type will not penetrate any sort of armour.

Respiratory Intoxication requires the character breathe in a toxin in gaseous form. A respirator, sealed vacc suit or similar protection will prevent this. Otherwise, the character will be exposed to the chemical. If he resists the effects, this might be because he is tough or because he held his breath; the effect is the same.

Skin Contact requires the chemical to be in a form which can be absorbed through the skin. Sealed armour or a vacc suit will prevent the chemical from having any effect, though it will need to be decontaminated. Otherwise, anyone who touches the suit will risk intoxication. A character who touches a contact toxin (or who is inside a gas cloud) may be affected. The Referee may

wish to allow DMs to resist the effects for characters who have partial protection.

Becoming Intoxicated

When a character is exposed to a toxin by one of the methods noted above, he has a chance to resist the effects. This requires an Endurance check modified by the virulence of the chemical and any other factors pertaining. For example, a character who is from a species partially resistant to tear gas might get a positive DM to resist it.

Virulence of Toxin	DM to Endurance Check
Mild	+4
Weak	+2
Normal	-
Strong	-2
Potent	-4

EXAMPLE TOXINS AND THEIR EFFECTS

Some toxins can attack by more than one method. For example, tear gas can be inhaled or cause irritation by coming into contact with the eyes and nose. Note these are merely examples. Very mild tear gas is possible, for example.

Toxin	Mode of Attack	Virulence	Effects
Tear Gas	Inhaled/Contact	Strong	Incapacity due to eye irritation and possible vomiting
Pepper Spray	Contact	Normal	Incapacity due to eye irritation
Tranq Gas	Inhaled	Normal	Unconsciousness for 3d6 rounds
Tranq Needle	Injected	Strong	Unconsciousness for 6d6 rounds
Nerve Gas	Inhaled/Contact	Potent	Death
Mustard Gas	Inhaled/Contact	Strong	1d6 damage per hour, for each of 2d6 hours after contact
Poison, Lethal	Injected	Normal	3d6 damage immediately
Poison, Delayed	Injected	Normal	2d6 damage after 1 hour, 2d6 more damage after 1d6 hours.

PERSONAL AND LIGHT SUPPORT WEAPONS

The possession of suitable personal weaponry is vital to survival in a dangerous environment. It is also necessary to have the right weapon for the job, to know how to use them... and when not to! Once weapons come into play, things can get deadly very quickly and firepower is not always a substitute for smarts. But when firepower is needed... it is best to have lots of it.

Personal weaponry (items that can be carried and operated by a single person) falls into several categories.

Hand Weapons are employed in close-range melee combat. They typically use one of three principles: Impaling (making small but deep holes in the target), Cutting (making shallower but larger surface cuts in the target) or Crushing (inflicting trauma by impact) or some combination of these principles. Some weapons have additional effects such as electrical stunning.

Bows and Primitive Weapons are used for ranged fire. Bows and crossbows propel an impaling weapon at speed. Other weapons are normally thrown to deliver impact or impaling damage.

Shields and Defensive Weapons some 'weapons' are primarily defensive. However, a good defence can be the key to taking out an opponent in a melee. Most defensive items are shields intended to protect the user but there are other options.

Projectile Weapons or 'slugthrowers' are the most common ranged weapons. They fire a small projectile at high velocity and most can be considered impaling weapons. Propulsion is normally by means of an explosive chemical but the composition and power of the propellant change as the Tech Level rises.

Gauss Weapons use electromagnetic effects to accelerate projectiles to very high velocity. Although of smaller calibre than other projectiles, gauss needles, on the whole, penetrate armour better and deliver worse injuries.

Laser Weapons use a pulse or beam of focussed coherent light to deliver energy to the target. They have no recoil but are attenuated by any factor impairing visibility, such as fog or rain. Lasers can cause secondary explosions by superheating fluids (such as in human tissues) which then expand as steam.

Flame, Plasma and Fusion Weapons also deliver energy to the target, usually along with anything else nearby. Armour is not always as effective against these weapons as they tend to engulf the target and find the gaps in its protection.

Other Energy Weapons include microwave guns and other energy-beam based technologies. The term is also used for certain ultra-high-tech weapons whose function cannot be readily explained.

Neural Weapons attack the mind of a living being. They often duplicate the effects of some psionic powers.

HAND WEAPONS

Guns jam, bowstrings snap and ammunition runs out. When it happens, you need a backup. And of course in some situations a hand weapon is the best tool for the job. Hand weapons are legal in most locations and can be as lethal as any laser or projectile weapon, although they lack range.

Mace Weapons use a heavy head to concentrate the force of their impact. They are particularly effective against non-rigid armour not incorporating thick padding (flak and cloth). The protective value of these armour types is halved (rounding down) against mace weapons (including the morningstar flail). Jack, mesh, combat armour and battledress retain their full armour value.

Shock or Stun Weapons deliver stun damage in addition to their normal effects. An electric-shock stun effect does not work through thick armour. It is assumed the wielder can hit a part of someone not protected by torso-only armour such as jack or a flak jacket but a full suit of armour (such as combat armour or a vacc suit) will negate the shock effect. Other damage (from the impact of a shock baton, for example) is treated normally.

When a character is hit by a stun weapon he must make an Endurance check with a negative DM equal to the damage rolled. If the check is failed, the character collapses unconscious for 3d6 rounds. There is no effect (other than a yelp of pain and a certain amount of annoyance) if the check is passed.

Blunt Instruments

Blunt weapons are easy to improvise and generally lack sophistication. However, high-tech weapons do offer some interesting options.

Cudgel (Or Club) (TL 0): A constructed or improvised blunt instrument suitable for braining an opponent or breaking his bones. Cudgel type weapons include staves of a sort carried for fighting or walking. A cudgel can be improvised from a handy stick, a large spanner or even a rifle, or might be carved and lovingly shaped from hardwood. A purchased cudgel (such as a sports bat of some kind) might cost Cr. 10. The batons used by security personnel are also treated as a basic cudgel.

Mace, Heavy (TL 1): A heavy metal weight (often spiked or flanged) on a long haft, the heavy mace is on occasion a badge of rank and at others a potent infantry weapon. Heavy maces can be thrown a short distance for 3d6 damage. A large sledgehammer is treated as a heavy mace.

Mace, Light (TL 1): A light mace is a one-handed weapon carried as a sidearm by some low-tech troops. It consists of a heavy crushing head on a short haft. Maces can be thrown for 2d6 damage. A hammer, large wrench or similar tool would be treated as a light mace.

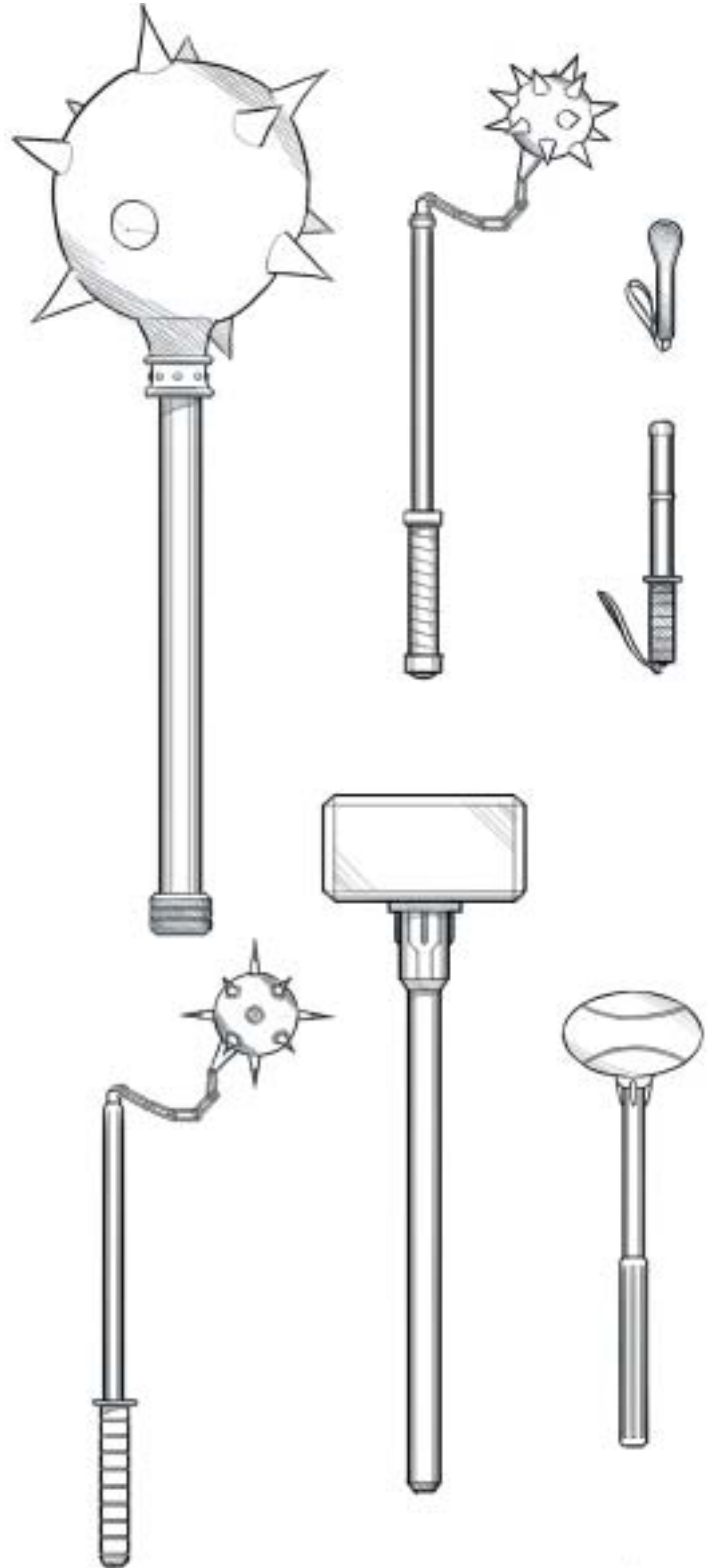
Martial Arts Flail (TL 1): Two or three pieces of wood or similar material fastened together by cord or light chain, a martial arts flail is a peasant's agricultural tool turned into an improvised weapon. It does 2d6+1 damage. Very skilled users can do clever things with a martial arts flail, such as entangling an opponent and throwing him to the ground but for the most part these weapons are just flexible cudgels.

Mace, Great (TL 2): A heavy metal weight (often spiked or flanged) on a long haft, the great mace is used in both hands and is designed for smashing armoured personnel to bits.

Morningstar Flail (TL 2): The morningstar flail consists of a spiked mace head on a chain attached to a long haft and wielded in both hands. It is a deadly battlefield weapon but poses a severe threat to an untrained user. The morningstar is considered to be a mace weapon for purposes of penetrating armour.

Sap (TL 2): This melee weapon deals 1d6+1 stun damage in addition to its normal damage. If a character not wearing a helmet is struck by a sap he must make an Endurance check. If this Endurance check is failed, the character is knocked unconscious.

Shock Baton (TL 8): The shock baton resembles a light security baton, much like a police billy club. In addition to the normal damage, 1d6 stun damage is delivered. The baton's capacitors take 1d6 rounds to recharge after this but the baton can still be used as a club in this period.

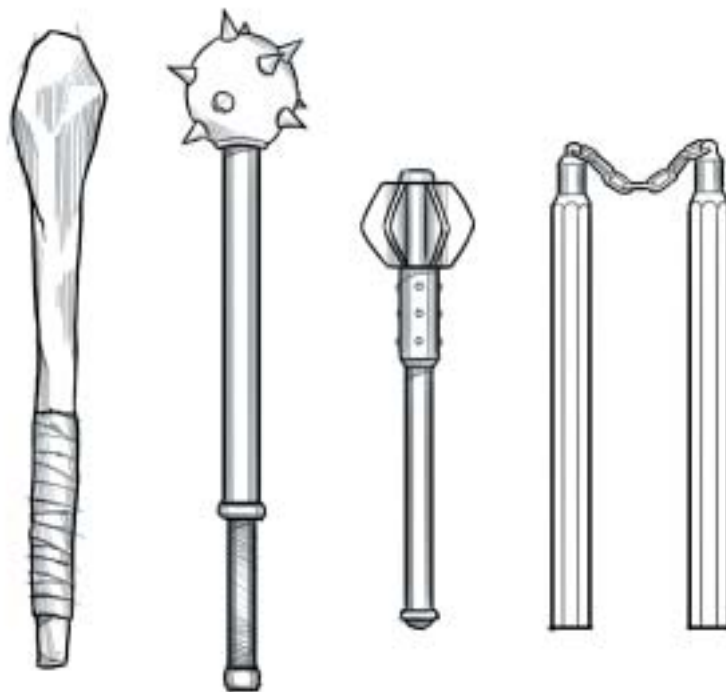


Flail, Anti-Armour (TL 8): A rather fanciful anti-armour weapon resembling a morning star flail made from high-tech materials. The head is smashed into the target by the force of impact, causing capsules of instant glue to break and adhere it to the target (this weapon is sometimes called a 'sticky flail' for this reason). The head automatically detaches from the weapon at this point, leaving the user with a staff which can be fitted with a new head (this will require three consecutive combat rounds to fit). After a preset delay the head detonates a shaped charge into the target. Any armour worn by the target is considered halved (rounding down) against the detonation.

Static Maul (TL 11): A rather sophisticated weapon that incorporates a localised static field that weakens molecular bonds upon impact, adding to the damage the heavy metallic rod inflicts when it connects with a living target. The static maul ignores the first two points of armour of any target it strikes.

Grav Mace (TL 13): This simple-looking ovoid of alloy atop a padded haft hides a truly sophisticated weapon that is the epitome of bludgeoning weaponry in known space. The inside of the superdense head of the mace is a small gravitic generator, twisting and multiplying the effective kinetic force the weapon creates when swung. The slight gyroscopic pull of the grav mace does make it a little difficult to control mid-swing, creating an additional amount of heft to compensate for.

Weapon	TL	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Club/Baton (Spanner)	0	Melee (Bludgeon)	2d6	0	-	1	-
Heavy Mace (Sledgehammer)	1	Melee (Bludgeon)	3d6	2	30	5	Mace
Light Mace	1	Melee (Bludgeon)	2d6+2	3	20	2	Mace
Martial Arts Flail	1	Melee (Bludgeon)	2d6+1	0	10	0.5	-
Great Mace	2	Melee (Bludgeon)	3d6+3	4	50	7	Mace
Morningstar Flail	2	Melee (Bludgeon)	4d6	3	100	6	Mace
Sap	2	Melee (Unarmed)	1d6 + 1d6+1 stun	0	30	1	Sap
Shock Baton	8	Melee (Bludgeon)	2d6 + 1d6 Stun	0	350	0.75	Stun
Anti-Armour Flail	8	Melee (Bludgeon)	3d6 as flail. 4d6 when detonating	2	400	2.75	Mace
Static Maul	11	Melee (Bludgeon)	3d6	2	650	2	Mace
Grav Mace	13	Melee (Bludgeon)	5d6	4	1,000	5	Mace



Axes and Related Implements

Axe-type weapons include the obvious chopping and fighting axes and also military weapons like halberds and war picks, all of which rely on a heavy blade or spike propelled by a haft of varying length.

Axe, Stone (TL 0): A simple weapon constructed by attaching a weight (usually a rock) to a branch or bone handle. Similar implements can be constructed from high-tech equipment if the need arises. Stone Axes are sharp but are considered maces for purposes of armour penetration.

Axe, Battle (TL 1): A large axe with one or two blades and wielded in one or both hands, the battle axe is a basic low-tech infantry weapon. Fire rescue axes have a similar performance.

Axe, Hatchet (TL 1): A light axe head on a short haft, hatchets are basic work tools and are carried as sidearms in some areas. They are also found in survival and field kits.

Axe, Great (TL 2): A very large axe with a long haft, wielded in both hands, the great axe is a fearsome low-tech infantry weapon though it is a bit limited in close quarters fighting. Large logging axes have a similar performance.

Halberd (TL 2): There are many possible halberd-type weapons, most of which are a sort of hybrid spear and axe type weapon. Halberds are powerful and versatile weapons and popular with low-tech infantry. Other examples include bill-hooks and similar agricultural tools that can be used for war.

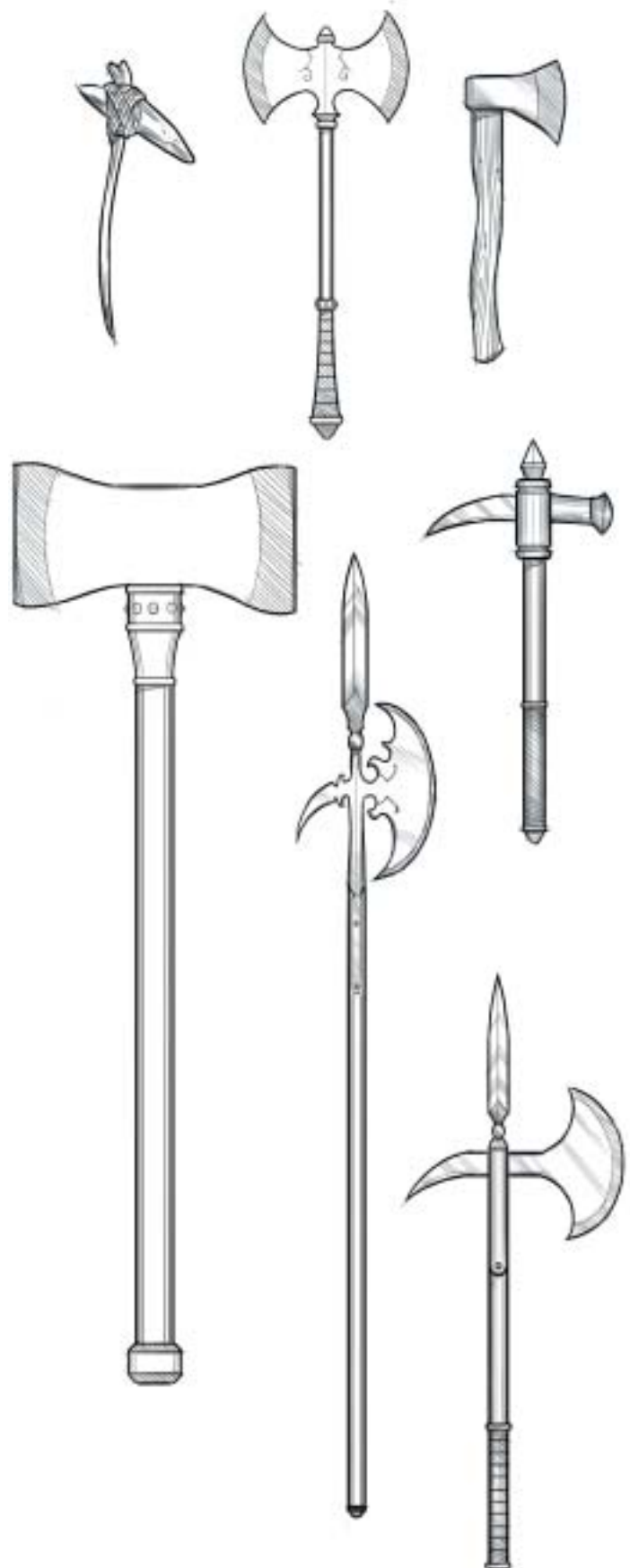
Pick, War (TL 2): War picks are designed for punching through armour and are reasonably effective against even modern protection. All armour protection is halved (rounding down) against a war pick.

Axe, Boarding (TL 9): A modern version of the halberd with a short haft, the boarding axe is a combination of axe and spear for close assault work. Most have an optional spade head, which can be swapped for the axe in a few seconds.

Static Axe (TL 10): An enhanced weapon axe-bladed weapon that incorporates a powerful generator that emits a localised static energy field, the static axe weakens molecular bonds as it cleaves into a target. This increases the penetration of the blows, allowing the weapon to ignore the first two points of armour worn by the target.

Axe, Chaindrive (TL 10): A heavy kinetic engine built into the haft of an axe-headed weapon, the actual 'blade' is a set of independently spinning, chain-driven teeth that shred a target as much as the impact pushes into them.

Static Axe, Improved (TL 12): Made from lighter and stronger materials, the improvements made to the original static axe are nominal and rarely enough to warrant the additional expense. Other than changes made to its profile below, these are identical to the regular static axe.



PERSONAL AND LIGHT SUPPORT WEAPONS

Axe, Arc-Field (TL 14): A highly advanced weapon that does not actually have a 'blade' at all, arc-field weapons have dense, conductive fibres that are flooded with energy from a self-contained power pack when activated. The result is a plane of energy that can through nearly anything. Arc-Field weaponry cannot be parried except by other arc-field devices.

Weapon	TL	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Stone Axe	0	Melee (Bludgeon)	2d6+2	1	0	1.5	Mace
Hatchet	1	Melee (Axe)	2d6+1	0	25	1.5	–
Battle Axe (Fire Axe)	1	Melee (Axe)	3d6	2	40	3	–
Great Axe (Wood Axe)	2	Melee (Axe)	4d6+2	2	60	6	–
Halberd	2	Melee (Axe)	3d6+2	1	90	8	–
War Pick	2	Melee (Axe)	2d6+2	1	100	3	–
Boarding Axe	9	Melee (Axe)	3d6+2	1	120	2	–
Static Axe	10	Melee (Axe)	4d6+1	2	300	6	–
Chaindrive Axe	10	Melee (Axe)	4d6	2	250	7	–
Improved Static Axe	12	Melee (Axe)	4d6+2	1	500	4	–
Arc-Field Axe	14	Melee (Axe)	5d6+2	1	1,750	4	–



Spears

A spear is a point of some kind at the end of a haft. Whether this is a high-tech bayonet attached to a gauss rifle or a sharp rock tied to a branch, the effect is much the same. Spears increase the reach of the user and by flexion of the shaft can also increase his ability to penetrate the target.

Spear (TL 1): A long polearm with a pointed tip, usually of metal, on the end. A basic spear can be made from a sharpened stick with a fire-hardened end. More advanced versions are basically the same in principle but may have a more durable head, crosspieces to prevent an impaled animal advancing up the shaft and so forth. A fisherman's trident or similar implement is treated as a spear. A thrown spear is treated as a javelin.

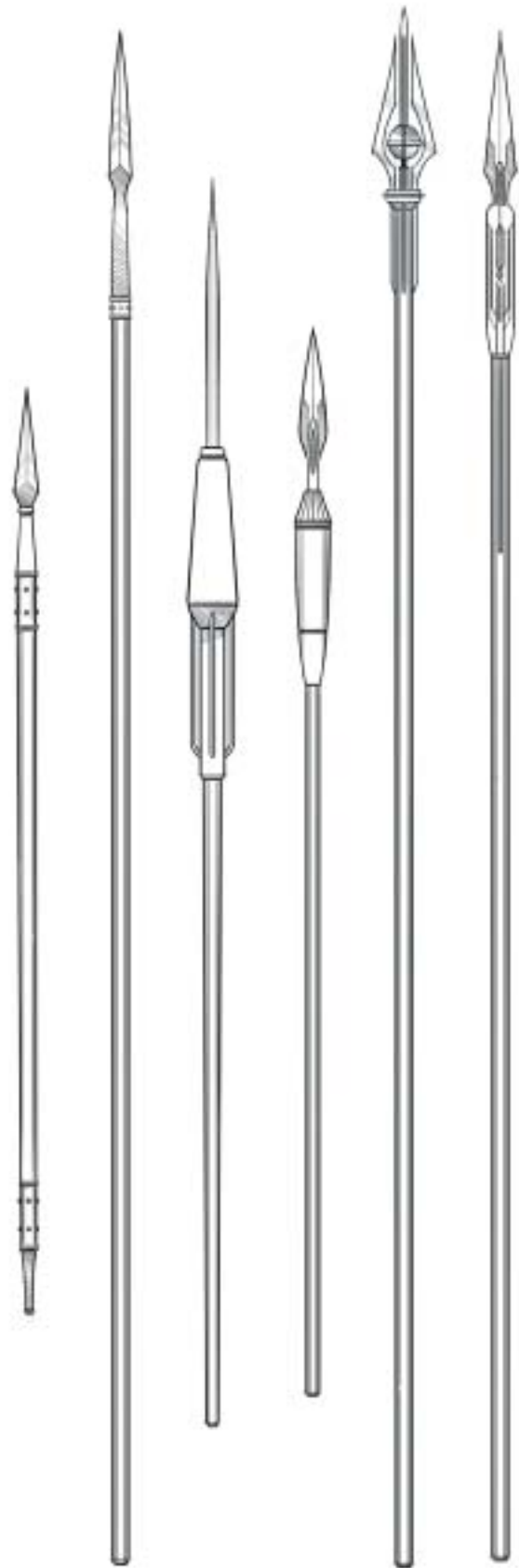
Pike (TL 1): A long haft with a heavy metal point. A long horseman's lance may be very similar in construction to a pike. A lance used on horseback is treated as a spear (above) unless in a headlong rush in which case it does 5d6 damage.

Pike, Assault (TL 5): A bomb on a pole, an assault pike is rammed against the side of an armoured target, detonating its shaped charge. In theory the wielder is sufficiently far away not to be harmed by the explosion. Armour is halved against the shaped-charge effect (rounding down).

Spear, Piston (TL 8): A long and reinforced shaft topped with a pneumatic pumping engine that activates a sharpened spike at the weapon's end. When the spear is thrust against a target, the engine fires to send the spike punching up to a full half-metre through the enemy. As long as the wielder has used a minor action to reload the piston, the spear's attacks ignore half a target's armour rating (round up).

Spear, Sonic (TL 10): A powerful sonic emitter added to the end of a reinforced spear haft, this weapon blasts away at a target when the tip strikes. It is extremely light and easy to use but does not allow for added strength to increase the damage it can inflict. A sonic spear does not add the wielder's strength bonus to its attacks but does add a +1 DM to hit with all attacks.

Pike, Psi (TL 16): The beginning of neural technology, a psi pike has a complex crystalline network integrated into its haft tapping into the wielder's psion abilities to highly enhance the damage it inflicts with telekinetic force. The psi pike adds half (round up) of the wielder's Psi Characteristic to the damage the weapon inflicts on every successful attack.



Weapon	TL	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Spear	1	Melee (Spear)	2d6	0	50	2	–
Pike/Lance	1	Melee (Spear)	3d6 (5d6)	2	75	5	–
Assault Pike	5	Melee (Spear)	4d6	1	100	2.5	Shaped Charge; armour halved.
Piston Spear	8	Melee (Spear)	3d6+4	2	225	5	Armour halved
Sonic Spear	10	Melee (Spear)	3d6+1	0	450	2	–
Psi Pike	16	Melee (Spear)	4d6	1	2,000	2.5	Psi Bonus

Swords and Blade Weapons

There are many kinds of sword; the term refers to a weapon with a long metal blade designed for cutting or stabbing, or both, with some kind of hand guard. Swords are normally used in one hand, though some are wielded in both. Shorter blades include knives, daggers and a machete-sized weapon called a Blade.

Knife (TL 1): More a tool than a weapon, any small bladed or pointed implement can be pressed into service in an emergency. This includes screwdrivers, chisels and even items like scissors as well as small knives.

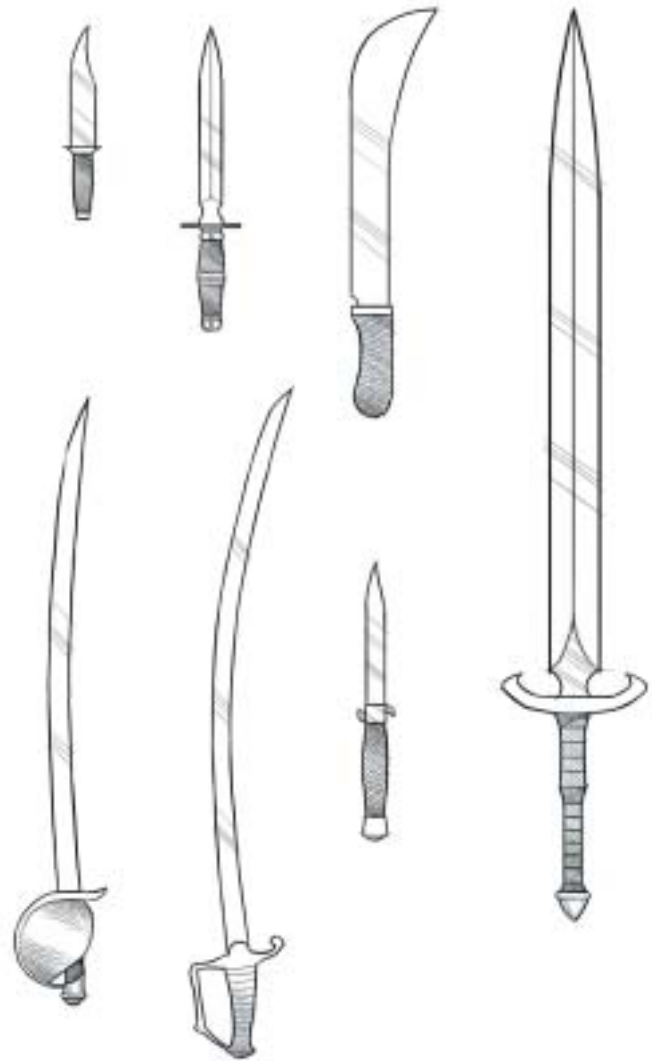
Dagger (TL 1): The term 'dagger' is used to refer to any small bladed weapon designed primarily for combat. Various types exist, some intended for slashing, some for stabbing and some for both.

Blade (TL 2): There are two weapons routinely referred to by the title 'Blade'. One is a hybrid knife weapon with a straight, heavy, single or double edged blade and a hand guard (essentially a shortsword). The second type is a large machete type weapon with a single curved edge and no point. There is no real difference in the performance of these types. Because of the bulk of the Blade, it is generally carried in a belt scabbard. Blades are as much survival tools as weapons and are often found in emergency kits, lifeboats and so on.

Broadsword (TL 2): The largest of the sword weapons, the broadsword is also (and more accurately) called a two-handed sword because it requires both hands to use. The blade is extremely heavy, with two cutting edges and a more or less useable point. The hilt is relatively simple, generally a cross-piece only, with little basketwork or protection.

Cutlass (TL 2): A fairly short-bladed, heavy sword weapon sometimes featuring a full basket hilt to protect the hand. The cutlass has a single cutting edge and no point. It is intended for close-quarters hacking (and is consequently known as a 'butcher's blade' in some circles). Cutlasses are very 'handy' weapons for close quarters fighting such as during a boarding action.

Sabre (TL 2): A sabre is a light, one-handed sword used with a reasonable amount of finesse as compared to the long sword or cutlass. Most sabres are curved and intended primarily for slashing but have a thrusting point. Scimitars, tulwars and the like are all functionally similar.



Stiletto (TL 2): A stabbing knife designed for punching through armour and committing sudden murder. Stilettoes have no edge but possess a very sharp point. Non-rigid armour (jack, cloth, mesh and the like) is not very effective against a stiletto, their armour value is halved (rounding down).

Sword, Long (TL 2): The term long sword or just 'sword' is used as a catch-all term for most long-bladed hilt weapons. Most have some kind of point and/or one or two sharp edges. Examples range from the European 'knightly' long sword to Japanese katanas. Most swords are primarily used in one hand but can be wielded two-handed at need.

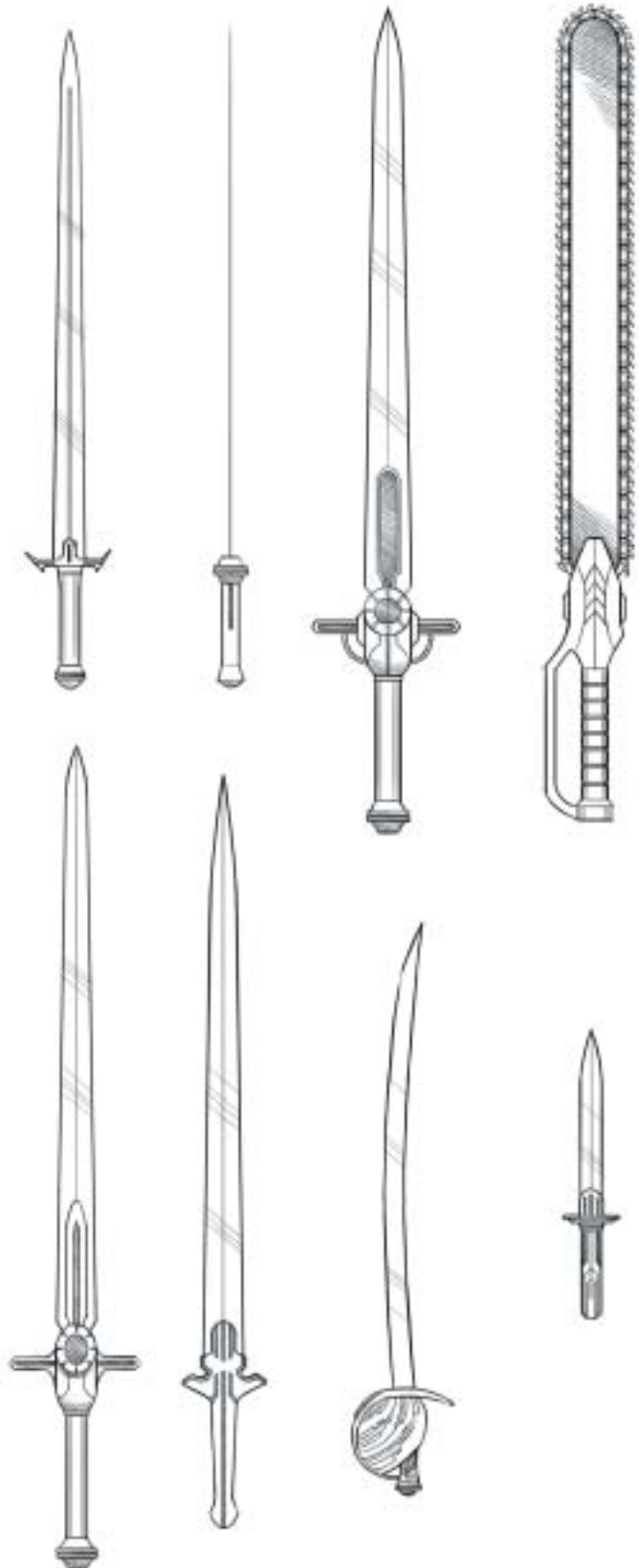
Bayonet (TL 3) A knife-like weapon similar to a dagger or blade, a bayonet may or may not have a cutting edge; it will always have a stabbing point. When not attached to a rifle, a bayonet is treated as a dagger and will normally be carried in a belt scabbard. When attached to the muzzle of a rifle or similar weapon, it transforms the gun into a polearm. More advanced bayonets may incorporate tools such as wire cutters and bottle openers but the basic function is the same. A fixed bayonet can use Melee (Spear) skill but any military-trained character with Gun Combat (Rifle) skill will have been taught to fight with the bayonet and can use this skill if it is higher.

Rapier (TL 3): The rapier is a light, straight bladed cut-and-thrust sword, usually with a basket or cup hilt to protect the hand. In some societies, rapiers are referred to as 'foils' though this term more correctly applies to 'foiled' training weapon (one that has been blunted and made safe for practice). In the Original Traveller Universe, the term Foil is used almost exclusively. A variant, the 'Navy Foil' exists. This is a slightly curved version used mainly for slashing and not well suited for thrusting. Both weapons are similar in performance, though their fighting styles are different.

Spring-Blade (TL 4): A thick-bladed dagger set into a spring-loaded or hydraulic sheath located on the forearm, used for surprise attacks. Spring-blades have a +2 DM for the initial surprise attack but suffer a -1 DM when parrying.

Stiletto, Explosive (TL 6): An updated version of the stiletto designed to be rammed into the victim and broken off. 2-3 seconds later a small charge within the blade detonates, causing massive internal injuries and pushing metal fragments into his tissues. This is a one-shot weapon, obviously. The weapon delivers two sets of damage - normal stiletto damage (1d6+2, halving armour) and if any damage at all gets through armour, a second 2d6+2 damage against which armour does not count at all. If the first damage is stopped by armour then the weapon breaks and detonates outside the body, causing 1d6 damage to all within three metres.

Dagger, Stealth (TL 8): A stealth dagger (or 'invisiknife') is made from low-density plastic and is very hard to detect using standard weapons scanners (there is a -4 DM for it to be detected in this way). It otherwise functions as a standard dagger.



Sword, Monoblade (TL 8): A light one-handed sword with a polymer blade honed to a monomolecular edge by mechanisms in the scabbard.

Stiletto, Laser (TL 9): Not really a knife in the true sense, a laser stiletto is basically a handgrip containing a one-shot laser. The laser is triggered by ramming the end of the rod into a target, delivering a lethal close-quarters attack. Occasionally a laser stiletto will explode instead of firing, doing 2d6 damage each to the target and the wielder. This occurs on a roll of 11+ on 2d6.

Sword, Monofilament (TL 12): An advanced sword weapon using a monofilament edge (a cutting edge just 1 molecule thick created by spinning a single-molecule strand rather than paring down a thicker object to a molecular edge.). A monosword is as sharp as any physical object can be. All armour is halved in value (round down) against this weapon.

Sword, Static (TL 10): A heavy hilt incorporating a static field generator, the static sword is a powerful polymer blade that slices between the molecules of a target as much as it does physically damage it. This weapon ignores the first two points of armour of any target it strikes.

Sword, Chaindrive (TL 10): A small but powerful engine in the large hilt of this weapon spins a paired row of sawing teeth, creating the 'blade' of the weapon. Although the sword is rather heavy and unwieldy, it is designed for prolonged cutting. If a chaindrive sword

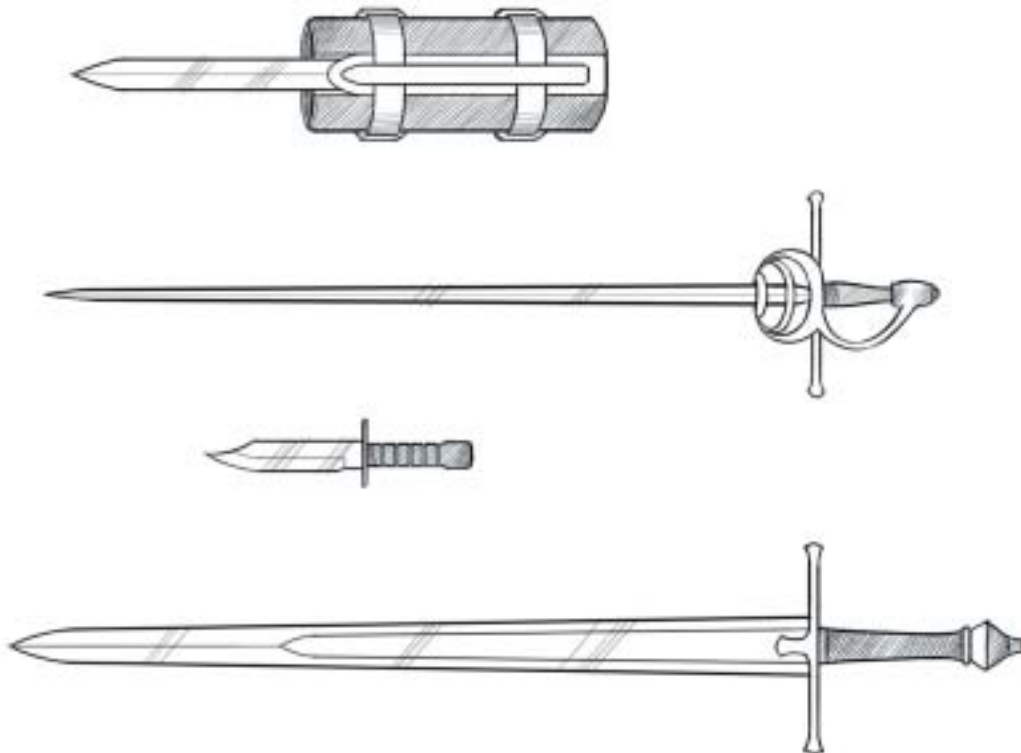
hits a target on consecutive attacks it can add +2 to the damage it inflicts. Further successful, consecutive, attacks add an additional +2 damage for each attack, up to a maximum of +6 damage.

Sword, Improved Static (TL 12): The more common form of the static sword used by those with the credits to acquire them, this weapon is lighter and easier to wield than its predecessor. Other than the differences listed in the profile below, these weapons are identical to the common static sword.

Sword, Arc-Field (TL 14): Highly advanced and very expensive, this sword's 'blade' is a web of dense fibres that conduct high amounts of energy to form a cutting plane. The sword comes with a recharging station built into its scabbard, which gives the weapon enough power to be activated for an hour between eight-hour charges. Arc-Field weaponry cannot be parried except by other arc-field devices.

Cutlass, Psi (TL 16): Used by melee oriented psions, the psi cutlass incorporates a tightly knit web of complex filaments that conduct psion energy into the semi-crystalline blade, adding telekinetic force to every attack. The psi cutlass adds half (round up) of the wielder's Psi Characteristic to the damage the weapon inflicts on every successful attack.

Dagger, Psi (TL 16): Similar in design to a psi cutlass, save for a smaller blade. Other than the changes in the weapons profile below, these weapons are identical to the psi cutlass.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Knife	1	Melee (Small Blade)	1d6+1	0	5	–	–
Dagger (Bayonet if not fixed)	1	Melee (Small Blade)	1d6+2	0	10	–	–
Blade	2	Melee (Small Blade)	2d6	1	45	1	–
Broadsword	2	Melee (Large Blade)	4d6	2	300	3	–
Cutlass	2	Melee (Blade)	2d6+4	–1	100	1	–
Sabre	2	Melee (Large Blade)	2d6+2	1	125	1.75	–
Stiletto	2	Melee (Small Blade)	1d6+2	–1	50	0.5	Armour reduced
Sword	2	Melee (Large Blade)	3d6	2	150	2	–
Bayonet (Fixed)	3	Melee (Spear) or Rifle	3d6	0	25	0.25	–
Rapier (Foil)	3	Melee (Large Blade)	1d6+4	–2	100	0.5	–
Spring-Blade	4	Melee (Small Blade)	1d6+1	0	200	0.5	–
Explosive Stiletto	6	Melee (Small Blade)	1d6+2 then 2d6+2	0	25	0.5	Armour reduced, second damage effect
Stealth Dagger	8	Melee (Small Blade)	1d6+2	–	175	–	Hard to detect
Monoblade	8	Melee (Large Blade)	2d6+5	–2	1,000	1	–
Laser Stiletto	9	Melee (Small Blade or Unarmed)	4d6	–	500	0.25	Occasional explosive malfunction
Static Sword	10	Melee (Large Blade)	3d6+2	2	250	3	–
Chaindrive Sword	10	Melee (Large Blade)	3d6+3	2	200	5	–
Improved Static Sword	12	Melee (Large Blade)	3d6+2	1	450	2	–
Monofilament Sword	12	Melee (Large Blade)	3d6	–2	50	0.75	Armour halved
Arc-Field Sword	14	Melee (Large Blade)	4d6+2	0	1,050	2	–
Psi Cutlass	16	Melee (Large Blade)	3d6+1	1	1,500	2	Psi Bonus
Psi Dagger	16	Melee (Small Blade)	1d6+2	–	650	0.5	Psi Bonus



Miscellaneous Close-Combat Weapons

Various hand-to-hand weapons exist that are not categorized. Most can be considered to be either a dagger-type or a cudgel-type weapon, or otherwise augment unarmed-type attacks such as kicks and punches.

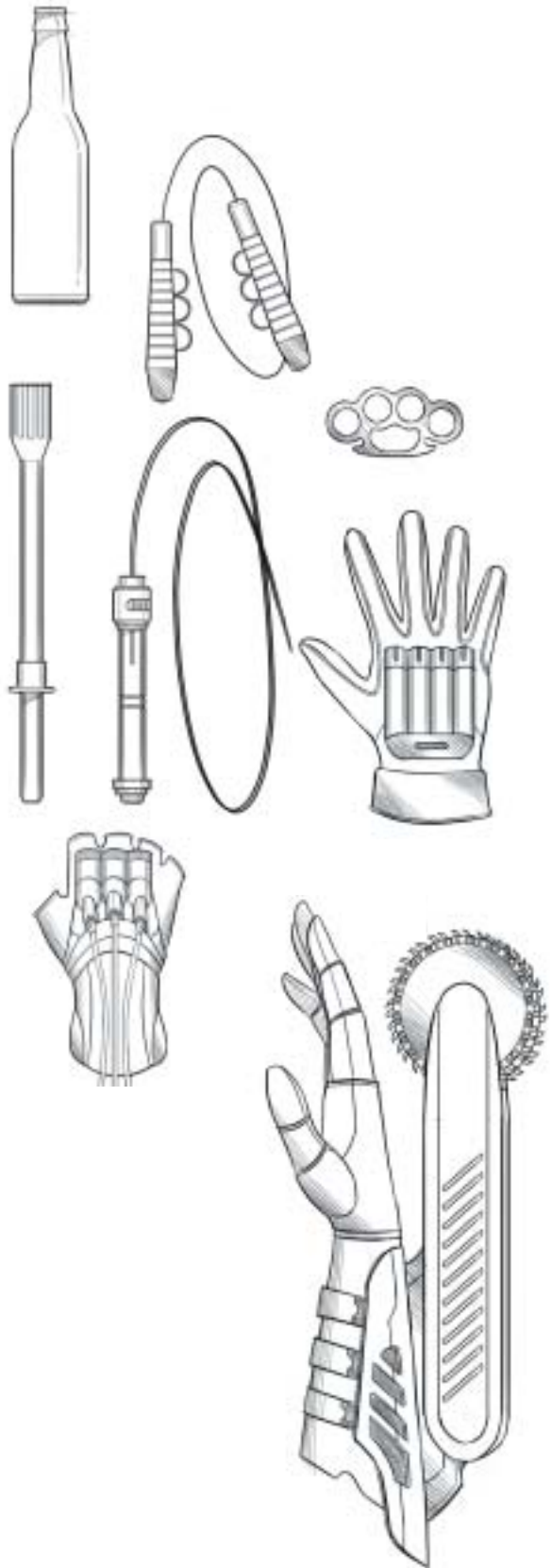
Rifle butts, sword hand guards and so on are treated as cudgels. Characters with a military background are considered to have the same level of skill with the butt of their weapon as with the other end but this does not carry over to non-rifle weapons. Sword hilts can be used to strike with Melee (Unarmed) or the relevant blade skill, whichever is highest.

Unarmed Strikes and Improvised Weapons: Almost any object can be picked up and used to augment a punch or kick. A rock held in the hand, a small computer used to bash someone with... most relatively light objects can be considered improvised weapons if not treated specifically below.

Bottle (TL 1): A bottle can be used as a cudgel until it breaks (which can take longer than most entertainment vids might lead travellers to believe). There is a 3 in 6 chance that a bottle will break on any given blow. If it does, there is a further 3 in 6 chance it will be useable as a dagger afterwards. Otherwise too little is left for the wielder to do much but injure himself with.

Brass Knuckles (TL1): A heavy knuckle-duster (which may or may not be made of actual brass), brass knuckles increase brawling damage to 2d6-2. They use Brawling skill since they are simply an extension of the character's own fists. Heavy boots or specially modified shoes with hard striking surfaces can also be considered to function as brass knuckles.

Garrotte (TL 1): Any piece of cord can be used to strangle someone. Custom-made garrottes sometimes have handles to make it easier to apply force but the effect is much the same. A garrotte cannot be used effectively unless the target is unaware or else unable to defend. On a successful attack the garrotte is in place and inflicts 2d6 wounds each round automatically unless the defender makes a successful escape or the attacker lets him go. To escape it is necessary to make a successful opposed Melee (Unarmed Combat) check. Neck armour will negate the effects of a garrotte.



Handspikes (TL 2): Essentially a heavy knuckle-duster with spikes rather than just relying on impact, handspikes are much the same as brass knuckles in effect, increasing brawling damage. They are rather intimidating and leave a very nasty wound.

Handmine (TL 6): A handheld shaped-charge explosive weapon, the handmine is sometimes hazardous to the user but very dangerous to the target. A successful attack is necessary to hit the target. If successful, the mine is triggered and the target takes 4d6 damage. The shaped-charge effect is such that the target's armour is halved in value. There is a 3 in 6 chance that the user also takes 2d6 damage from his own weapon, with armour at full value.

Stunfist (TL 8): A stunfist is a high-technology knuckle-duster containing a shock unit (and insulation for the user). A stunfist is subject to the usual rules for shock weapons. It is treated as a set of brass knuckles plus delivers 1d6 shock damage. The stunfist's capacitors need 2d6 rounds to recharge after a strike. It can be used as brass knuckles in this time.

Stunstick (TL 8): A stunstick is a simple conductive rod which delivers 2d6 stun damage using an electric shock. It needs 1d6 rounds to recharge between strikes. The stick is too flimsy to be useful as a club.

Shock Whip (TL 9): A shock whip is more an instrument of torture than a useful weapon. It is normally used on a low setting to inflict pain from both the whip and a low-level shock effect. If used as a weapon it delivers 1d3 damage as a whip and 1 point of stunner damage from the shock if the target has no armour. A shock whip can release a much bigger charge in a single strike. In this case whip damage is 1d3 plus 1d6+2 for the shock. The whip must then build up charge for 1d6 rounds before it can be used again. If it is used to strike in this time the charge is dissipated and the charging cycle must start again. The shock effect is stopped by armour – if the damage from the whip is not sufficient to penetrate armour, there is no stunning effect.

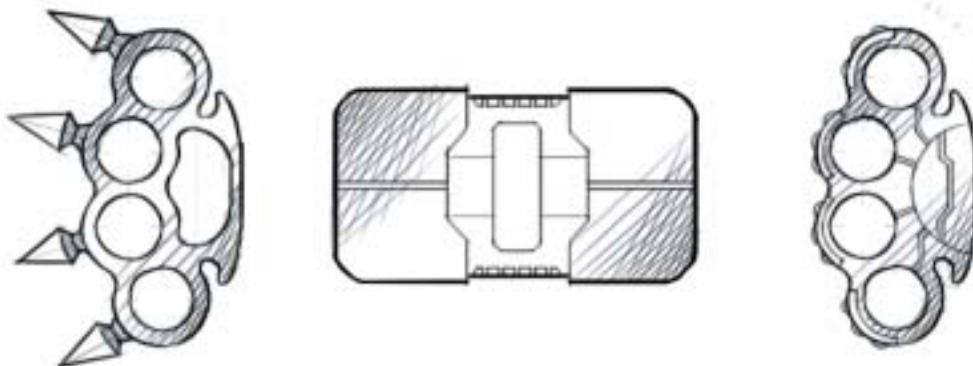
Knuckleblasters (TL 9): A reinforced glove with heavily padded fingers, a set of knuckleblasters incorporates four sockets across the back of the hand. These sockets are loaded individually with four common shotgun shells which detonate when the wearer's fist come into hard contact with a target. The added damage in the profile overleaf only applies for the first successful blow, after which the weapon must be reloaded. This takes 2 Significant Actions to perform and cannot normally be done while in combat.

Fist, Piston (TL 9): This heavy metal forearm brace has a built-in pneumatic ram across the back of the wearer's hand that fires powerfully forward whenever the user makes a quick 'punching' motion.

Fist, Static (TL 10): A heavy mechanised gauntlet with an integrated static field generator pulsing around the tips of the fingers, this weapon allows the wielder to grab and pull chunks of matter off a target with ease. The static fist ignores 2 points of armour upon any successful attack.

Gauntlet, Chaindrive (TL 10): This heavy metallic gauntlet is designed with a row of engine-powered teeth down its forearm, cutting deeply into any target the wearer presses it into. Although the gauntlet is rather heavy and unwieldy, it is designed for prolonged cutting. If a chaindrive gauntlet hits a target on consecutive attacks it can add +2 to the damage it inflicts. Further successful, consecutive, attacks add an additional +2 damage for each attack, up to a maximum of +6 damage.

Claw, Arc-Field (TL 14): A highly advanced weapon that is built like a bestial claw, tipping each elongated finger with a cluster of dense fibres that create a plane of energy. The claw is attached by thin cable to a shoulder-mounted power pack and can be operated effectively indefinitely as long as the power pack is given time to recharge between uses. Arc-Field weaponry cannot be parried except by other arc-field devices.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Unarmed Strike	–	Melee (Unarmed)	1d6	–	–	–	–
Improvised Weapon	–	Melee (Unarmed)	2d6–2	1	–	2 kg typically	–
Bottle	1	Melee (Bludgeon or Small Blade)	2d6	–	Depends on the contents	0.2	–
Brass Knuckles	1	Melee (Unarmed)	2d6–2	–	10	0.2	–
Garrote	1	Melee (Unarmed)	2d6	–	1	–	Surprised victim only
Handspikes	2	Melee (Unarmed)	1d6+4	–	25	0.3	–
Handmine	6	Melee (Unarmed)	4d6	–	200	0.3	Armour halved
Stunfist	8	Melee (Unarmed)	2d6 + 1d6 (Stun)	–	Depends on the contents	0.2	Stun effect
Stunstick	8	Melee (Bludgeon)	1d6 + 2d6 (Stun)	–	300	0.5	Stun effect
Shock Whip	9	Melee (Whip)	1d3 + 1 or 1d6 stun effect	–	450	1	Stun effect
Knuckleblasters	9	Melee (Unarmed)	1d6 (+4d6)	0	150	2	–
Piston Fist	9	Melee (Unarmed)	2d6+3	1	75	3	–
Static Fist	10	Melee (Unarmed)	2d6+1	1	100	4	–
Chaindrive Gauntlet	12	Melee (Unarmed)	3d6	1	150	5	–
Arc-Field Claw	14	Melee (Unarmed)	3d6+2	0	650	1	–



SHIELDS AND DEFENSIVE WEAPONS

Some weapons and 'combat tools' are primarily defensive. These fall into two main categories. Larger shields provide fairly passive protection, they are placed in the way of a threat and act a bit like mobile cover. Smaller shields and parrying weapons are used differently. These are used to deflect or catch an enemy's attack. It is possible to simply cower behind a shield but a parrying dagger is no use unless it is placed in the way of an attack by a skilled user.

Using a Shield

Shields are held in front of the user and only moved around a little. As a result they are not governed by any skill. Instead, they count as extra armour if an attack hits them. Any attack coming in from the covered arc (usually front and left for a shield worn on the left arm) may strike the shield. Their bulky nature makes it impossible to use more than one shield simultaneously.

Roll 2d6; 8+ indicates the attack has struck the shield. This roll may be modified for very large shields and other factors. Attacks coming in from any other arc (melee or ranged) will not hit the shield. At least, not before ripping right through the user's body, which makes the question academic.

Using a Buckler or Parrying Weapon

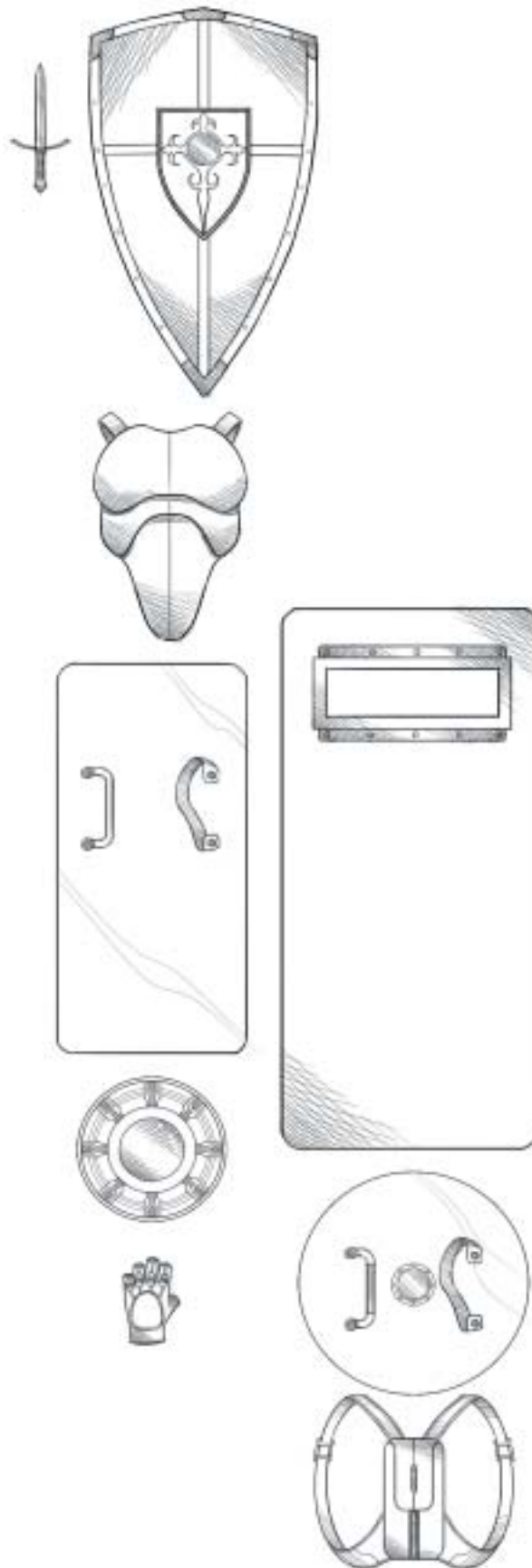
Technically bucklers are small shields but they are used in an active manner to parry with so are considered to be 'defensive weapons' rather than passive shields. A character who has a parrying weapon but does not want to try to parry with it gains no benefit. Attacks will not accidentally hit the buckler.

To use a parrying weapon, the character must declare he is parrying. Just as when parrying with a standard weapon, the character suffers a -1 DM to all skill checks until the next round. Parrying skill is governed by whatever weapon the character is using at that moment. The opponent suffers a penalty to his attacks equal to the character's skill (as usual) plus the weapon's parrying value (usually 1 or 2). This penalty can be split among multiple opponents if the character wants.

A buckler or parrying weapon can be used to attack with but cannot be used to parry at the same time. If the character has no implement in use in his hands other than the parrying weapon, he may apply his highest Melee skill (plus the weapon's parrying value) as a penalty to the opponent.

Dagger, Parrying (TL 1): A small bladed weapon with a large hand guard, intended for defensive use. If used to attack, a parrying dagger is governed by Melee (Small Blade) skill and is treated as a dagger. Parry value is 1.

Shield, Large (TL 1): A large shield is normally hung on a strap from the shoulder to help bear its weight. It cannot be used to attack with. Large shields apply a DM of +2 on the roll to determine if an attack hits them. Armour value is 8 for a well-made large shield.



Shield, medium (TL 1): Various medium shield designs exist; round shields, kite shields and so forth. A medium shield can be used as a weapon only as a 'shield rush', in which case it is treated as an improvised weapon. Armour value is 6 for a sturdy wood and metal shield; wicker and hide medium shields have an armour value of 3 and are totally ineffective against projectiles (including arrows, javelins and the like).

Shield, Small (TL 1): A small shield is lighter and more manoeuvrable than a large shield and can be used to attack with. Small shields apply a DM of -1 on the roll to determine if an attack hits them. Armour value is 4 for a well-made small shield.

Buckler (TL 2): A small wood and metal shield held in the hand and used to parry incoming blows, a buckler is too small to use like a larger shield and is considered a parrying weapon. A buckler may be used to strike with using Melee (Bludgeon) skill. If so it is treated as a Cudgel. Defence with a buckler is active rather than passive – the user must parry with it; bucklers are too small to simply cower behind and give no protection from ranged attacks or when the user is not actively parrying. Parry Value is 2.

Body Plate (TL 4): An oval plate of thick steel slung on a shoulder strap and supported by handles. Body plates are used by some low-tech infantry as personal protection from small arms fire, acting as mobile cover. They are heavy and not very effective. A body plate has a DM of -2 to the roll to see if an attack hits the 'shield'. Armour value is 10. A body plate cannot be used to parry with.

Shield, Riot (TL 6): A round or rectangular shield of fireproof plastic, which may be clear or opaque. A riot shield is similar to a Shotgun shield but is lighter and protects a little better against firearms. Attacks hit the shield on 8+ with no DM. Armour value is 7. The shield can only be used to attack with in a shield rush.

Shield, Boarding/Entry (TL 9): Used by some shipboard security personnel and also law enforcement special-response teams, the boarding/entry shield is a large movable obstacle. It cannot be used to parry with; it is simply a means of providing cover where there is none, so it is of no use against a melee combatant who runs around it to attack the user. Most boarding shields have a vision block; some also have a firing port in the front surface. A boarding shield completely protects anyone hiding behind it and is large enough

for two people to use simultaneously it or move it forward whilst remaining reasonably well covered. When moving or firing from behind a boarding shield, the user(s) can be hit. The shield imposes a +2 DM to determine if an attack hits the shield. Armour Value is 12.

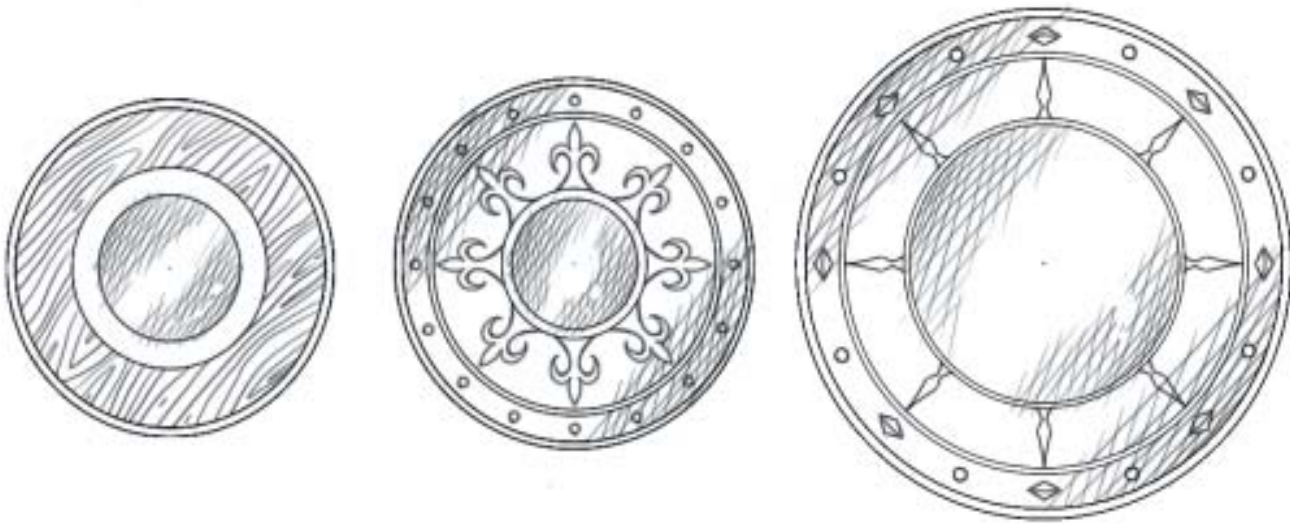
Buckler, Gravitic (TL 13): A reincarnation of the basic buckler incorporating a gravity generator similar to those used in starship floor plates. The buckler is used much as a standard low-tech buckler and provides the same 2 additional points of parry value. However, if the attacker misses because of the parry (if his attack roll fails by 3 when fighting someone with skill 1 and 2 points of parry value from the buckler, as an example) then the gravity generator activates, causing his weapon to be stuck to the buckler. The weapon's owner can abandon the weapon or try to pull it off. If he abandons the weapon, the gravity field can be cut off and the weapon will fall to the ground. If the attacker keeps hold, he may try to regain his weapon each round by making a strength check. Success indicates he may start using his weapon again the following round. However, a character who is tugging at a stuck weapon can do nothing else and is an easy target for the grav buckler's owner.

Handshields (TL 14): Worn like a set of brass knuckles, this device projects a flicker of gravitic repulsion whenever the wearer tries to block an incoming attack. The flicker is not strong enough to harm a weapon or send it out of the attacker's hands, it merely allows a martial combatant or unarmed fighter to parry otherwise dangerous weapons. Handshields can be used to parry any melee or unarmed weapon, even arc-field weaponry.

Shield, Repulsor (TL 17): A new take on the riot shield concept. A repulsor shield is an advanced riot shield with a set of repulsors built into it. These are powered by a small backpack which has 25 'power points' available before needing to be recharged. If the repulsor field is turned on, it projects a field in front of the user which pushes people and even projectiles away. This costs 1 power point per round. It imposes a DM of -1 to hit on small projectile weapons (slugthrowers, bows, thrown weapons and so on), -2 on hand weapons and has no effect on energy weapons. Attacks which hit will fall on the shield on 8+; its armour value is 10. The shield can also emit a pulse, costing 5 power points. This will send anyone within 3m of the front face of the shield reeling back or even knock them over unless they roll Dex 8+. This pulse does not cause any damage.

PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Required Skill	Parry Value or Armour Value	Heft	Cost (Cr.)	Mass (Kg)	Special
Large Shield	1	Varies	8	2	75	6	Shield
Medium Shield	1	Varies	6	1	60	5	Shield
Small Shield	1	Varies	4	0	50	3	Shield
Parrying Dagger	1	Melee (Small Blade)	1	0	20	0.5	Parrying Weapon
Buckler	2	Varies	2	0	10	1.5	Parrying Weapon
Body Plate	4	Varies	8	2	40	8	Shield
Riot Shield	6	Varies	7	1	50	4	Shield
Boarding/Entry Shield	9	Varies	12	3	150	7	Shield
Gravitic Buckler	13	Varies	2	0	500	1	Parrying Weapon, Special
Handshields	14	Melee (Unarmed)	5	0	750	2	Parrying Weapon
Repulsor Shield	17	Varies	10	1	2,500	3	Shield, Special



BOWS AND PRIMITIVE MISSILE WEAPONS

While arrows, thrown rocks and boomerangs might seem to be beneath contempt, travellers need to be aware that even the most primitive weapons can kill in skilled hands. Some thrown weapons are heavy enough to be considered to have a Heft modifier. Bows also have a Heft modifier but this is more absolute than usual – a character cannot cock a crossbow or pull a bow if he does not have a strength bonus at least equal to the weapon's Heft modifier. He can however shoot a crossbow which has been cocked for him by a stronger person.

Bows, Crossbows, Slings and Thrown Weapons are all considered to be specialisations within the Athletics skill.

Bows, Crossbows and Slings

Bows, crossbows and slings all use Bow Combat skill and have a greater effective range than hand-hurled weapons.

Sling (TL 0): A projectile weapon which propels small stones or metal bullets using rotational energy. Slings are powerful but require a certain amount of skill to use effectively; all shots made using a sling suffer a –2 DM to hit.

Bow, Short: (TL 1) A light bow with a weak pull, the short bow is primarily a hunting weapon but sees use in combat from time to time. Short Bows are sometimes used from animal-back.

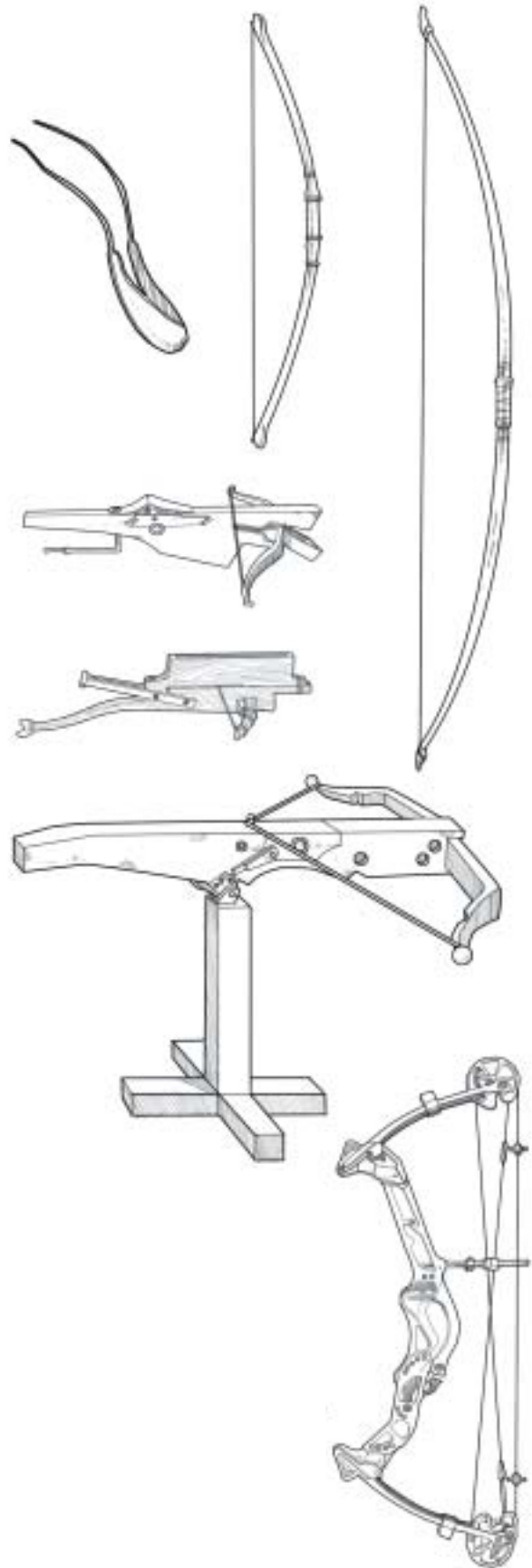
Bow, Long (TL 2): (Cr. 300, TL 2, 1.5 kg) A long symmetrical or asymmetric bow, the long bow is a powerful low-tech weapon. The same stats can also be used for powerful recurve bows, which are shorter than the standard longbow stave and sometimes used by horse archers.

Crossbow, Military (TL 2): A heavy weapon, cocked with a stirrup or windlass device, the military crossbow is powerful and simple to learn how to use. It is slow-firing, however, taking 3 minor actions to load.

Crossbow, Repeating (TL 2): A weak but quick-firing crossbow cocked by a lever and fed from a magazine of six bolts, repeating crossbows are somewhat unreliable.

Crossbow, Siege (TL 2): A very heavy weapon, the low-tech equivalent of a battlefield support weapon, the siege crossbow is normally fired from a fixed mount. It is very powerful but takes 10 minor actions to reload.

Crossbow, Sporting (TL 2): A light crossbow intended mainly for hunting or shooting game, the sporting crossbow is quicker to load than its heavy cousin but is far less powerful.



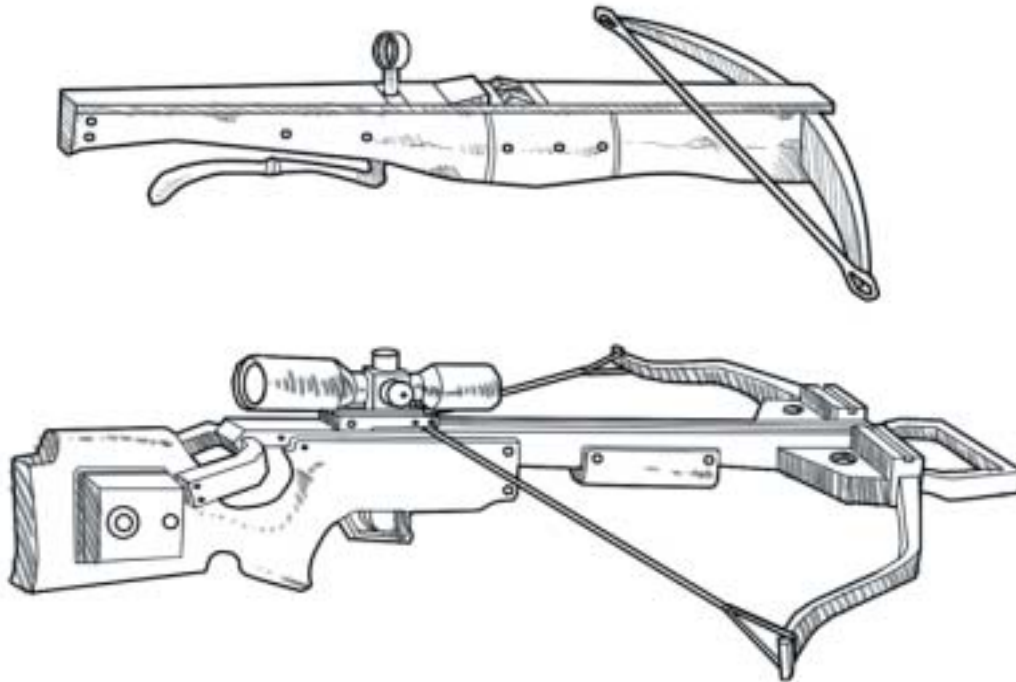
PERSONAL AND LIGHT SUPPORT WEAPONS

Bow, Compound Cam (TL 5): A short bow made with advanced materials and incorporating a pulley device, the compound cam bow is as powerful as a long bow and also much handier.

Crossbow, Advanced (TL 7): A modern version of the sporting crossbow using advanced materials. It is functionally little different.

Weapon	TL	Range	Required Skill	Damage	Recoil	Cost (Cr.)	Mass (Kg)	Special
Sling	0	Shotgun	Athletics (Sling)	2d6	–	10	–	Tricky to use
Short Bow	1	Assault Weapon	Athletics (Bow)	1d6	1	60	1	–
Long Bow	2	Rifle	Athletics (Bow)	2d6	2	300	1.5	–
Military Crossbow	2	Rifle	Athletics (Crossbow)	2d6	1	350	8	–
Repeating Crossbow	2	Shotgun	Athletics	1d6+2	0	450	5	–
Siege Crossbow	2	Rifle	Athletics (Crossbows)	4d6	2	800	12	–
Sporting Crossbow	2	Rifle	Athletics (Crossbows)	1d6+3	1	200	2.5	–
Compound Cam Bow	5	Rifle	Athletics (Bows)	2d6	1	200	0.75	–
Advanced Crossbow	7	Rifle	Athletics (Crossbows)	2d6+4	1	250	2.5	–

* These weapons use the Assault Weapon range modifiers but cannot shoot at Distant range.



Thrown and Hurlled Weapons

Thrown and hurlled weapons (typically rocks, javelins, knives and axes) have a short range but can still be deadly.

Bola (TL 0): Consisting of two or three weights fastened together with a cord, the bola is used to bring down an opponent or prey. It does a little damage but its main function is to entangle the legs of the target. If hit, the target must make a DEX check or be tripped up. He will take 1d6 rounds to disentangle himself from the bola and be able to move freely once again.

Hunting Boomerang (TL 0): A shaped wooden object designed to harm an unarmoured target. Contrary to popular misconception, hunting boomerangs are not designed to return to the thrower. A boomerang can also be used as a melee weapon, with the same effect as a club.

Rock, Large (TL 0): A rock or similar object requiring both hands to lift and hurl will cause considerable damage but makes for a clumsy and short-ranged weapon.

Rock, Small (TL 0): A smallish rock or similar object can be thrown at an opponent to cause harm. Something suitable can usually be found lying around.

Axe, Throwing (TL 1): A hatchet or tomahawk-like weapon balanced for throwing, the axe has a short range but heavy impact. It can double as a hand-to-hand weapon, in which case treat it as a Hatchet.

Javelin (TL 1): A short spear designed for throwing, a javelin can be pressed into service as a spear and vice versa, though neither is ideal outside its intended role. A javelin gains a +1 DM to hit when thrown.

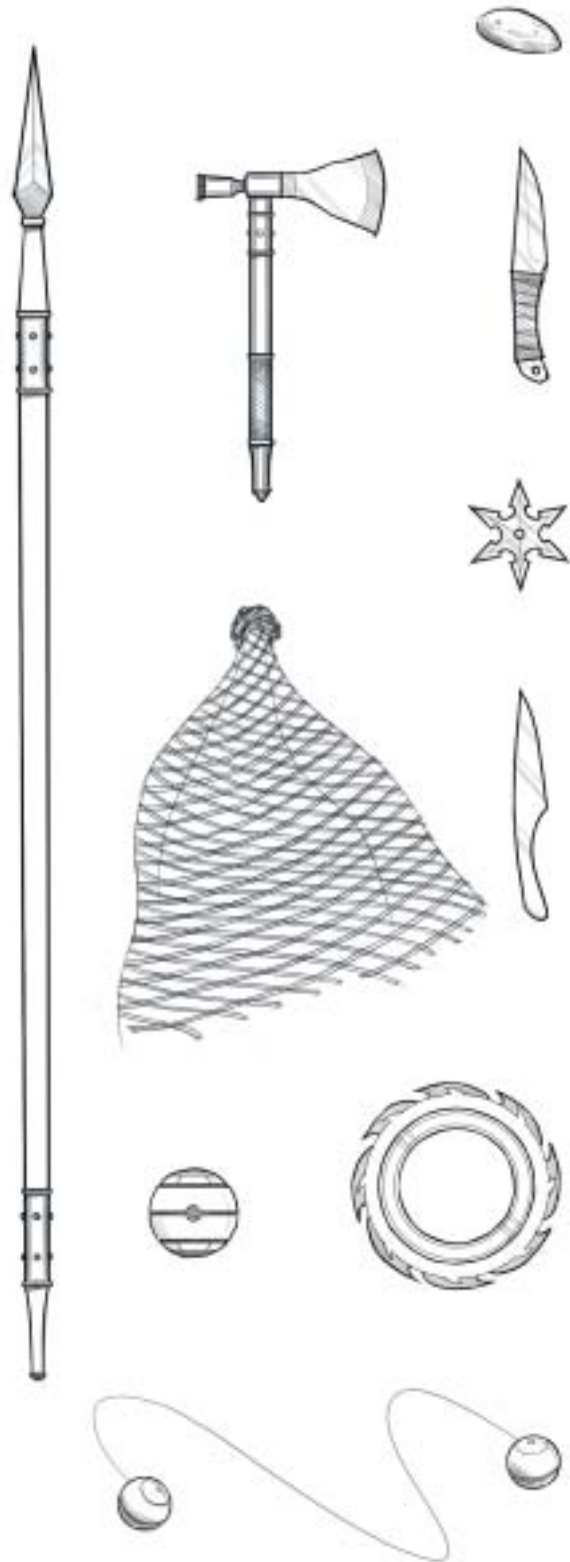
Knife, Throwing (TL 1): A small blade weapon designed for hurling at a target, a throwing knife is easy to conceal and carry. Throwing knives can double as hand-to-hand weapons but are not very effective.

Net (TL 1): A net causes no damage but may entangle the target. If hit, the target must make a Dex check with a DM of -2. Failure means that the target is entangled and unable to move. Each round after the first the target can make a Dex check with no penalty. Success means he has wriggled free.

Throwing Steel (TL 3): A range of small blades can be thrown, including darts and stars. They are not especially damaging and useless against armour but popular with martial artists who, for whatever reason, eschew firearms.

Stealth Throwing Knife (TL 8): A non-metallic knife made from dense plastic, a stealth throwing knife is impossible to spot with metal detectors and thus relatively easy to conceal.

Blasting Sphere (TL 9): A fist-sized generator of intense kinetic energy, a blasting sphere is thrown at a target like a stone or sporting



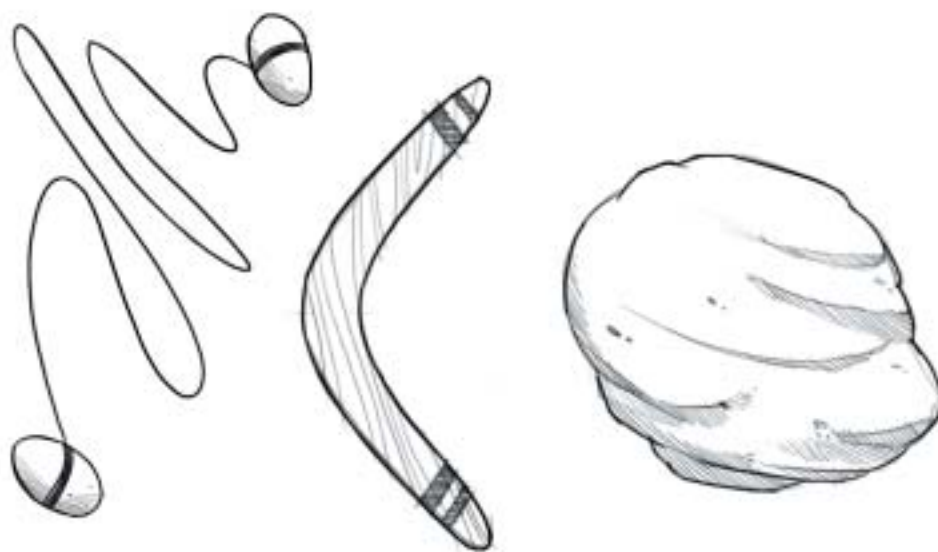
ball. When its studded surface impacts against a target at a certain degree of force the sphere discharges violently to inflict physical trauma. A sphere can be triggered once before it must be allowed to recharge its internal generator, which takes 15 minutes.

Monoblade, Hurling (TL 12): A polymer throwing blade or disc that is honed to a monomolecular edge by its storage case, this weapon shears through enemy armour with ease but loses its edge very quickly. If a successful attack with a hurling monoblade does not inflict damage upon a target (because of its armour rating), the

blade has cracked and lost its edge and cannot be used until placed back in its storage case for at least one hour.

Bolo, Monofilament (TL 12): Two weights that create a line of monowire (a cutting edge just one molecule thick) between them when thrown, the monofilament bolo winds itself around a target, causing deep cuts on the limbs and torso. Unlike a normal bolo, this weapon cannot entangle a foe; instead it inflicts terrible and visceral damage. All armour is halved in value (round down) against this weapon and any damage getting through armour is doubled.

Weapon	TL	Range	Required Skill	Damage	Heft	Cost (Cr.)	Mass (Kg)	Special
Bola	0	Thrown	Athletics (Thrown)	1d6-1	0	5	0.6	Entangle
Hunting Boomerang	0	Thrown	Athletics (Thrown)	1d6	0	5	2	-
Small Rock	0	Thrown	Athletics (Thrown)	1d6	0	-	0.5	-
Large Rock	0	Thrown	Athletics (Thrown)	2d6	2	-	2	-
Throwing Axe	1	Thrown	Athletics (Thrown)	1d6+2	1	35	0.75	-
Javelin	1	Thrown	Athletics (Thrown)	2d6	1	15	1.25	-
Throwing Knife	1	Thrown	Athletics (Thrown)	1d6	0	25	0.15	-
Net	1	Thrown	Athletics (Thrown)	-	1	10	1	Entangle
Throwing Steel	3	Thrown	Athletics (Thrown)	1d6-1	0	20	0.1	-
Stealth Throwing Knife	8	Thrown	Athletics (Thrown)	1d6-1	0	200	-	Hard to Detect
Blasting Sphere	9	Thrown	Athletics (Thrown)	3d6	1	100	2	-
Hurling Monoblade	12	Thrown	Athletics (Thrown)	2d6+5	-	75	0.5	-
Monofilament Bolo	12	Thrown	Athletics (Thrown)	2d6	0	150	1	Armour Halved



PROJECTILE WEAPONS

Despite advances in technology, projectiles remain an effective way of putting an enemy out of action. This section deals for the most part with 'slugthrowers' using chemical energy to propel their projectile, plus a few variant technologies.

Many rifles and similar longarms do not cause significantly greater damage than handguns. This is because pistol bullets, while travelling at lower velocity, tend to be of larger calibre. They tend to deliver more of their energy to the target than many rifle shots, which often tear right through and go on their way without delivering all their energy.

At close range against an unarmoured foe there is not much to choose from between a handgun and a rifle. However at longer range, or when armour must be penetrated, handguns are far less useful. Rifles usually carry more ammunition, too and may be capable of fully-automatic fire. Submachine guns offer a good compromise for close combat, as do shotguns under some circumstances. However, there is no perfect weapon; each has its advantages and drawbacks and a wise combatant chooses the tool to fit the occasion.

Projectile Weapon Ammunition

Ammunition is arguably the most important component in a projectile weapon. Weapons are made in many different calibres and with variation in the length of the cartridge, all of which can change their characteristics and performance of the round considerably. A larger case allows more propellant and thus higher muzzle velocity while a bigger bullet hits harder at the same velocity but requires more propellant to move it that fast.

Thus it is possible that two weapons with the same damage and other characteristics could use very different calibre rounds. Weapon types are somewhat representative. However, for the sake of clarity it is assumed standard calibres are used for most weapons. Unless noted otherwise, it can be assumed a given weapon uses standard and easily-available ammunition. Thus, other than for very unusual weapons, it is not hard to obtain suitable ammunition. Standard-calibre ammunition is interchangeable among derringers, revolvers, autopistols and even submachine guns using the same size round unless otherwise stated.

The common calibres in use are as follows:

HANDGUNS AND SUBMACHINE GUNS

Submachine guns use pistol-calibre rounds but generally have a longer barrel and thus higher muzzle velocity, allowing the round to perform a little better.

- Ultralight handguns normally use a 5mm round with very poor stopping power. This is known as 'Ultralight-5'
- Light handguns are normally chambered for a 7mm diameter round with modest performance but low recoil, referred to as

- 'Light-7'. Light-7 equates fairly well to the traditional .32 round. Standard handguns are normally chambered for a 9mm round known as 'Standard-9'. Almost as common are 'Standard-10' weapons which use a slightly more powerful 10mm round. Standard-9 equates fairly well to the traditional .38 Special round.
- Heavy handguns are normally chambered for a 12mm round known, predictably, as 'heavy-12'. This is slightly smaller than the traditional .45 ACP round but has similar performance. Some use a long 10mm cartridge referred to as 10mm Magnum which shoots a smaller round at higher velocity for similar performance.
- Very heavy handguns normally use non-standard rounds in the 14mm or even bigger range, or longer 'Magnum' versions of lesser calibres.

Of course, some manufacturers produce weapons in their own preferred calibre, often also making a version chambered for standard rounds

RIFLES AND SMOOTHBORES

Rifles generally use a smaller round than pistols but propel it at a much higher velocity. This makes for more damage, greater accuracy and better range than a handgun. 'Rifles' in this case includes full-sized rifles, carbines (which are just shorter, lighter rifles) and even some machineguns using rifle-calibre ammunition.

- 'Smallbore' rifles (and most carbines) typically use a 5mm round with a high muzzle velocity. Many light machineguns are also chambered for this round, known as 'Smallbore Rifle' or 'Light Rifle'.
- 'Fullbore' rifles typically use an 8mm round with a high muzzle velocity and greater hitting power. This round is normally just known as 'Rifle' or sometimes 'fullbore rifle'. Shotgun and General-Purpose Machine Guns are often chambered for this round.
- Light Advanced Combat Rifles use an advanced short 6mm round using electrothermal-chemical (ETC) rather than standard chemical propulsion. This is a more efficient propellant, allowing smaller and lighter rounds to hit just as hard. ACR ammunition is normally caseless (there is nothing to eject; the cartridge 'case' is made of propellant) and will not function in standard rifles. This round is known as Light-ACR.
- The standard Advanced Combat Rifle round is known as 'ACR'. This is a short 9mm caseless ETC round with a very high muzzle velocity and heavy bullet.
- Many manufacturers make weapons firing non-standard ammunition, particularly with specialist weapons such as light survival rifles.

Shotguns are smoothbore weapons, their barrels are not rifled. Thus even when using solid ball ammunition rather than shot, shotguns are not as accurate as rifles. Solid ball ammunition is very powerful, however and is available in most shotgun calibres. For

anti-personnel use shotguns generally use heavy buckshot but they can also fire lighter shot for various purposes.

- Light shotguns are typically chambered for a short 16mm cartridge known as 'light shotgun'. This equates to the traditional 20-gauge round.
- Standard shotguns typically use an 18mm cartridge known as 'shotgun' or 'standard shotgun'. It is roughly equivalent to a 12-gauge.
- Heavy shotguns use a round called 'heavy shotgun', with a 20mm cartridge that is slightly longer and containing more propellant than standard ammunition.
- As with other weapons, non-standard calibres are not uncommon.

Ammunition Types and Characteristics

Ordinary anti-personnel ammunition is referred to as 'ball' for historical reasons. There are various types of ball ammunition; fully and semi-jacketed rounds, hollow points and so forth, all of whose performance equates roughly to the standard anti-personnel benchmark. Thus for the vast majority of weapons it can be assumed that if no special ammunition type is specified then ball rounds are in use.

For pistol-calibre weapons, ball rounds have no special characteristics. Higher-velocity rounds may have special characteristics, mainly relating to their performance against armour. This performance is related to the basic damage done by the weapon and indicates how many points of armour the weapon can ignore.

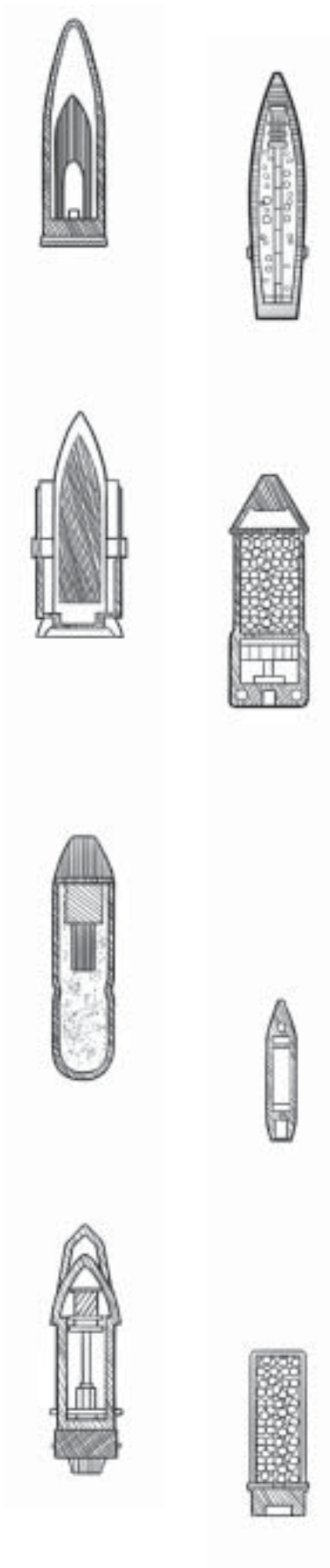
For example, if someone wearing a flak jacket worth 4 points of armour is hit by a weapon which ignores 3 points of armour, then he gains only 1 point of protection from his body armour. If the same round hit someone with just 2 points of armour, it would pass right through as if he had no armour protection but there is no additional benefit from the left-over penetrative capability.

Some ammunition has anti-armour characteristics which are named Semi-Armour-Piercing (SAP), Armour-Piercing (AP) and Super-Armour-Piercing (Super-AP). These have the following effects:

SAP rounds ignore a number of points of armour equal to half the number of dice they roll for damage, dropping fractions and ignoring any modifiers. Thus an SAP round normally doing $3d6-2$ damage ignores 1 point of armour (half of 3 is 1.5, rounded down to 1). All rifled longarms (other than black powder weapons) are effectively SAP weapons due to the high velocity of their projectile.

AP rounds ignore a number of points of armour equal to the number of dice they roll for damage, ignoring modifiers. Thus a weapon doing $2d6+2$ damage ignores 2 points of armour when using AP ammunition.

Super-AP rounds ignore a number of points of armour equal to double the number of dice they roll for damage. So a weapon doing $3d6-2$ damage using Super-AP ignores the first six points of armour the round encounters.



Some ammunition is effective only against unarmoured targets. Such rounds treat any armour the target may have as doubled. These are referred to as Soft-Target (ST) rounds.

Special Ammunition Types

SAP, AP and Super-AP are characteristics used to describe weapon effects rather than specific ammunition types. The items below are specific ammunition types which can be bought with the appropriate documentation and permits.

Anti-Armour: As the name implies, these rounds are specifically designed to penetrate ballistic cloth and other types of armour. Pistol-calibre anti-armour rounds are not very effective, giving the weapon semi-armour-piercing (SAP) characteristics.

Rifle-calibre rounds (other than some types with a very low muzzle velocity) are already SAP weapons. Using anti-armour rounds converts a rifle, machinegun, carbine or similar weapon into an armour-piercing (AP) weapon.

Buckshot: Buckshot is the standard anti-personnel load for shotguns. It consists of a number of heavy balls which spread out in a cone from the muzzle of the weapon. This allows the weapon to ignore Dodge dice modifiers. Buckshot performs poorly against armour; armour is doubled against this round and it is a Soft Target (ST) round.

Chemical (such as Tranquilliser and Poison): While virtually any weapon can be treated so as to be more likely to cause wound infection (black powder weapons are particularly prone to this anyway), deliberate delivery of chemicals with a rapid effect is more problematical. Poison ammunition is strictly controlled and subject to harsh penalties for misuse. Poison and Tranq rounds use the Chemical Attack rules if they penetrate the target – rounds stopped by armour obviously do not deliver their payload. Chemical rounds have ST characteristics.

Discarding Sabot Armour Piercing (DSAP) Rounds: The term DSAP is used to distinguish small arms ammunition from the functionally similar APDS, an artillery/tank gun ammunition type. DSAP is a more advanced armour-piercing round which can be used only from high-velocity longarms such as rifles, carbines and gauss rifles and their larger support equivalents. DSAP Rounds convert a rifle into a Super-AP weapon.

Flechette, Birdshot or Snakeshot: Flechette rounds break apart in flight releasing numerous small, sharp shards of metal or very small projectiles. The other types are simply a version of buckshot using much smaller pellets but more of them, increasing the chance of hitting the target. Weapons using these ammunition types ignore Dodge modifiers much as Buckshot and in addition the firer gets to roll an extra die when shooting, discarding the lowest die. However, damage is very poor. All damage is halved and in addition any

armour the target may have is doubled in effect. This ammunition is available for most firearms and is carried by many people who work in the bush for, as the name suggests, dealing with snakes and similar small threats. Flechette rounds are used to disperse rioters, for example, without inflicting lethal injury. Flechette, Birdshot and Snakeshot rounds have ST characteristics.

Gas: Gas rounds deliver a quantity of gas; usually soporific or tear/vomit inducing. Lethal agents such as nerve gas are available but are strictly controlled. Gas rounds use the Chemical Attack rules and normally affect only a single target unless fired into a close group. Gas rounds have ST characteristics. They can cause a little harm if a direct hit is scored – damage is 1 point per die the weapon would normally roll for damage.

High Explosive Armour Piercing (HEAP): High-explosive armour piercing ammunition is available for snub weapons and some large calibre weapons such as shotguns, where it functions like solid ball or slug ammunition. HEAP is designed to offset the low velocity of the round with a shaped explosive effect, enabling snub weapons to punch through armour and do respectable damage despite their low impact. HEAP is carefully controlled as a Cat 3 weapon and less readily available than Ball ammunition. It can only be used in weapons over 10mm in calibre. HEAP rounds convert the weapon to full AP capability after adding one extra die of damage. Thus a weapon normally doing 3d6–3 damage now does 4d6–3 damage and ignores 4 points of armour.

High-Explosive (HE): HE rounds are only available for large calibre weapons, those of at least 12mm. These rounds are designed to explode once they penetrate a target, inflicting two extra points of damage per die. However, they do not penetrate armour very well and the round usually explodes on contact. HE rounds are treated as ST ammunition. Thus a weapon doing 3d6–2 damage will do 3d6+4 damage with HE rounds but the target's armour, if any, is doubled.

Neural Field Dampening Rounds (NFD): These highly advanced, caseless bullets or shells are made from chemically-altered alloys that inherently generate psionic static. NFD rounds are made of slightly softer materials than regular ammunition, decreasing the amount of damage they inflict by –2. They do however, impede a target's psion abilities. Any damage these rounds inflict upon a target's physical Characteristics (STR, DES and END) is also applied to the character's Psi Characteristic for as long as the bullets are still present in the character's body. Removing the bullets fully requires a Medic Skill Test with a –2 DM.

Slug/Solid Ball: Shotguns may use a solid slug instead of buckshot. They lose the bonus to hit dodging targets but treat armour as normal rather than doubling its value. Damage inflicted remains the same. Solid ball rounds are not particularly aerodynamic and have no better range than buckshot. They are the basis for shotgun HEAP or HE rounds.

Stealth: Some weapons use non-metallic ammunition with unusual propellantstodefeatcommonweapondetectors.Stealthammunition is expensive and only really useful in weapons like body pistols which are themselves hard to detect. The ammunition cost listings for such weapons assumes stealth ammunition is being purchased, normal rounds are often not available. If for some reason a stealth version of standard ammunition is desired (to sneak it past security to someone who already has a gun to fire it from, for example) then it will cost fifty times the price of normal rounds.

Stunbag or Baton: Available for shotguns and certain specialist dischargers, stunbag rounds do not inflict damage as such but instead are treated as a stunner or shock weapon. Baton rounds from a shotgun base their damage on the weapon type but treat each 1d6 as 1d3. Stunbag and baton rounds have no effect on a target wearing rigid protection, such as combat armour or battle dress. Against other armour types baton and stunbag rounds have ST characteristics.

Use of Non-Standard Ammunition Types

Not all weapons can use every ammunition type. Some are fairly pointless even though they can be used. Autocannon-delivered tranquillisers are not generally very useful, for example.

Autopistols and Revolvers can deliver anti-armour, flechette, NFD and chemical rounds. Heavy and very heavy handguns can use HE; 10mm and larger handguns can use HEAP.

Black Powder Weapons can use only ball rounds. Their low velocity makes them ST weapons by default.

Bows and Crossbows can use anti-armour heads.

Gauss Weapons can use anti-armour and DSAP rounds.

Light Assault Guns can deliver any ammunition type.

Machineguns can deliver HE, anti-armour, DSAP, chemical, NFD and flechette rounds.

Rifles and Carbines can deliver HE, AP, DSAP, chemical, NFD and flechette rounds.

Shotguns can use buckshot, slug, explosive slug, HEAP slug, flechette, gas, NFD and chemical rounds.

SMGs can deliver anti-armour, flechette, NFD and chemical rounds.

Snub Weapons can deliver HE, HEAP flechette, gas and chemical rounds.

Ammunition Costs

Ammunition costs for any given weapon are given in the weapon's listing. This is for a single load (a full magazine) of standard ball or buckshot ammunition (or whatever else is standard for the weapon).

For non-standard ammunition types, this cost is multiplied as per the table below. Most ammunition types cannot be combined but some can; for example a DSAP round could be poisoned. In that case the multipliers are applied in sequence, creating a very expensive round.

Type	Cost Multiplier
Anti-Armour	x3
Buckshot	x1
Chemical, Tranquiliser	x2
Chemical, Poison	x5
DSAP	x10
Flechette, Birdshot, Snakeshot	x1
Gas, Tranquiliser	x6
Gas, Tear	x4
Gas, Poison	x12
HEAP	x15
HE	x12
NFD	x25
Slug/Solid Ball	x1
Stealth	x50
Stunbag/Baton	x2.5

WEAPON ACCESSORIES

Various weapon-enhancing accessories are available. Higher-tech versions of any given item may be smaller, more effective or possibly cheaper, though in many cases the standard version is the most efficient.

Ammunition Devices

Various ammunition feed and holder devices are available, some of which do enhance the capabilities of a weapon. For example, high-capacity magazines which extend further out of the weapon than normal are available for many weapons but there are reasons why they are not more commonly used.

Cartridge Holders (TL 3): A set of cartridge loops designed to fit on a belt, strap or sling, a cartridge holder can carry 7 individual shotgun cartridges, 20 pistol rounds or 14 rifle rounds. A different holder must be purchased for each ammunition type. Cr. 5, negligible weight.

Speedloaders (TL 5): Several variants of the speedloader exist. Their purpose is to refill a revolver completely in one go, shortening reloading time. The standard version is a plunger-activated device which pushes six rounds into the cylinder at once. A speedloader cannot be used to partially refill a weapon, nor can it be used for a different type. For example, standard-calibre speedloaders cannot be used for a light revolver. Reloading with a speedloader takes 1 minor action. Cr. 5, negligible weight.

Assault Box (TL 6): Assault Boxes are available for GPMGs and LMGs. They hold one belt of ammunition (typically 100 rounds) and prevent it from dragging on the ground. Assault boxes are also available for assault rifles and autorifles. They contain 60 rounds in a bulky super-sized magazine that makes it impossible to use the rifle lying down unless it comes equipped with a tripod of some other means of raising the weapon's height off the ground. Assault boxes for SMGs hold 80 rounds. Cr. 25, Weight 0.1 kg + ammunition.

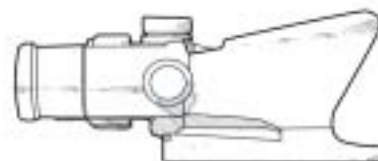
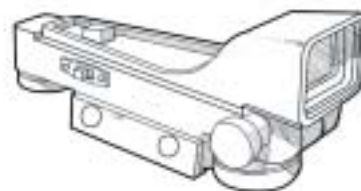
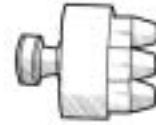
High-Capacity Autopistol Magazines (TL 6): 20-round and 30-round magazines are available for Light, Standard and Heavy autopistols. Cr. 25, Mass 500g loaded. A 15-round version exists for Very Heavy autopistols, with the same cost and mass.

Snail Drum Autopistol Magazine (TL 6): A 45-round extension magazine for Light and Standard autopistols, the snail drum is clumsy and awkward to use. Cr. 25, 750g loaded.

Sighting Aids

Various aids to aiming and sighting are available.

Telescopic Sights (TL 4): High-quality telescopic sights for attachment to a longarm, such as a rifle or carbine. The sights effectively reduce the range to the target (for purposes of determining the DM due to range) by 2 range bands, while conducting aimed fire. Low-tech (TL 5 or lower) telescopic sights are delicate, however and can be



misaligned by jarring impact or temperature, humidity and so forth. Cr. 25, 0.8 kg.

Electronic Sights (TL 6): Electronic sights with image enhancement and light intensifications capabilities are available to provide the capability to see and hit in the dark. Treat any low-light conditions as normal lighting for weapons equipped with such sights. These sights do not increase the weapon's performance at range, other than by removing the worst effects of poor lighting. Cr. 2,000, 1.5 kg.

Electronic Telescopic Sights (TL 7): Electronic sights combining the capabilities of both electronic and telescopic sights. They are still rather fragile. Cr. 3,000, 1.8 kg.

Laser Sight (TL 8): A laser dot pointer can be fitted to most weapons. It is not useful beyond Short range but at Close or Short range it grants a +1 DM on all hit rolls. Cr. 200, negligible weight. At TL 10, the use of more advanced optics eliminates the beam-and-dot signature of the basic laser, at no increase in cost.

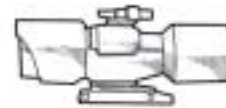
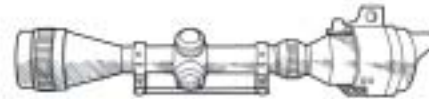
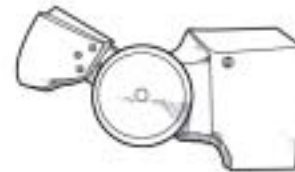
Gyrostabiliser (TL 9): Stabilisers can be added to any weapon with recoil, reducing the recoil by one point at the cost of 300 credits.

Personal Heads-Up Display (HUD) (TL 9): A personal HUD projects an aim point on an image of the target, automatically correcting for wind, gravity and so on. Various display devices are available, ranging from a vacc suit helmet visor to a pair of designer shades. A HUD grants a +2 DM on all hit rolls at all ranges, for any weapon it is keyed to. Pickups for additional weapons cost Cr. 250 each and require an hour or so to fit and calibrate. There is no real limit on how many weapons can be calibrated to one HUD. Cr. 1,500, 0.5 kg. At TL 11 the HUD is a holographic projector and no obvious visual device need be worn. These HUDs cost the same as the standard TL 9 version but have negligible mass.

X-Ray Outlining Aid (TL 9): Adding a special outlining element to an existing sighted scope, the firer can see exactly where a target's body lies behind an obscuring object. So long as the object is not made of metal, shielded or more than a metre thick the firer ignores any cover or concealment that the target is taking advantage of. Cr. 300. The TL 11 version is more powerful and can function through up to 3 metres of material.

Bio-Mass Sighting Aid (TL 10): Using the thermal signature of a target and a densitometer, this device 'fills in' the outline of targets on its display. The sighting aid reduces the DM for cover by 2 points and can 'see' through up to 12 inches of inorganic material. Cr. 500. The TL 12 version is more sophisticated and can eliminate up to 4 points of DM due to cover; it costs Cr. 750.

Holographic Sights (TL 10): Holographic sights project an image of the aim point for the user and automatically compensate for wind, gravity and similar conditions. They are not useful in a close-



range point-and-shoot situation but give the benefits of electronic telescopic sights plus a +1 DM to hit rolls for shots made at Medium range. Cr. 2,000, 0.5 kg.

Smart Tracker (TL 11): A display option that adds to the increased accuracy of a firearm, the smart tracker allows the firer to 'tag' any target he successfully hits with the weapon by spending a Minor Action in the same round after the weapon has scored a hit upon a target. Any 'tagged' target fired upon by the weapon on the following round will grant the firer a +2 DM bonus to hit. A target must be 'tagged' each round for the bonus to continue, meaning that the firer will only be able to fire the weapon and do nothing else. Cr. 500.

Psi-enhanced Targeter (TL 16): Using a linked wire network worn around the temples (or integrated into any headgear), a psion character can use his trained mental abilities to home in on a target. Truer than the images seen by the organic eye, the targeter feeds telepathically-enhanced firing angles and timing to the user. No other targeting aids may be used in conjunction with this device but the firer may add his Psi Characteristic modifier to any shooting attack not using the weapon's Auto Rating. Cr. 1,000. 1 kg.

Toughened Sights (Details vary) Rugged versions of these sights are available at one Tech Level higher and at 1.5 x the cost. These sights are extremely tough; they can be used to hit someone over the head as an improvised weapon and will remain accurate afterwards.

Other Devices

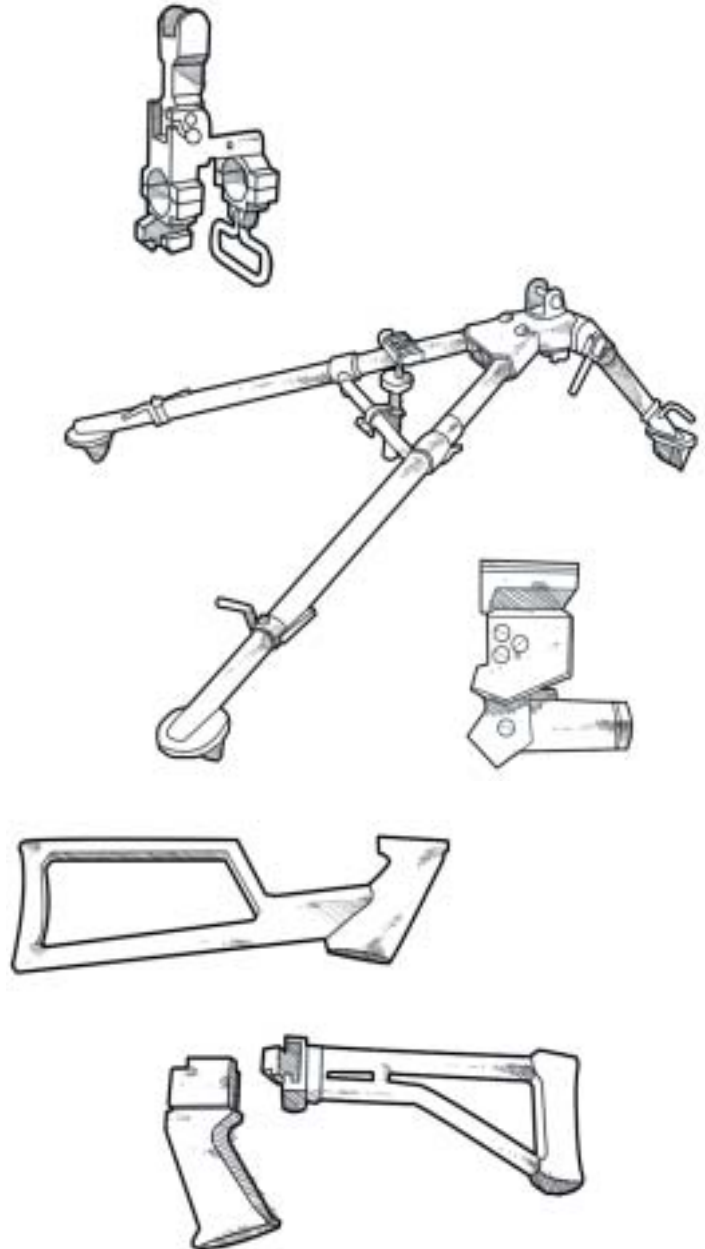
Various other enhancements are available for use with weapons.

Bayonet Lug (TL 3): Many weapons come with a bayonet attachment as standard but it is possible to convert any pistol, shotgun, carbine or rifle weapon to carry a bayonet. Most such conversions are clumsy and difficult to shoot or fight with, however. Cr. 10, 0.1 kg.

Monopod/Bipod/Tripod (TL 4): A weapon can be given a support frame to stabilize and support it for a cost of Cr. 50. It takes 2 minor actions to set up the weapon. Recoil is halved (round down) when firing from this rest.

Shoulder Stock (TL 4): It is possible to produce a shoulder stock which may be attached temporarily to a pistol or revolver, resulting in a crude carbine arrangement and some greater accuracy at longer ranges. The overall length of the pistol is increased by the length of the stock and the pistol cannot be holstered. Attaching the stock (or detaching it) requires five combat rounds. A shoulder stock offsets 1 point of DMs due to range when conducting aimed fire with the weapon at ranges of Medium or greater. Cr. 75, 1 kg.

Folding Stock (TL 6): Carbines, rifles and shotguns can be equipped with folding stocks instead of the usual fixed one. This makes possible to shorten the overall length of the weapon by 300mm.



This reduces any negative DM at close or personal range by one point (when the stock is folded) but increases any negative DM due to range by 2 points. Cr. 100, 0.5 kg.

Scan Jammer (TL 8): A highly illegal addition to a weapon that is frequently used by spies, agents and assassins, the scan jammer emits a localised sensor jamming field causing nearby scanning receivers to flicker, pop and otherwise fail. All sensing equipment within 5 metres of the jammer suffer a -4 DM to any Skill Tests used to electronically discover the weapon (or anything else on the person carrying the jammer!). Cr. 1,000.

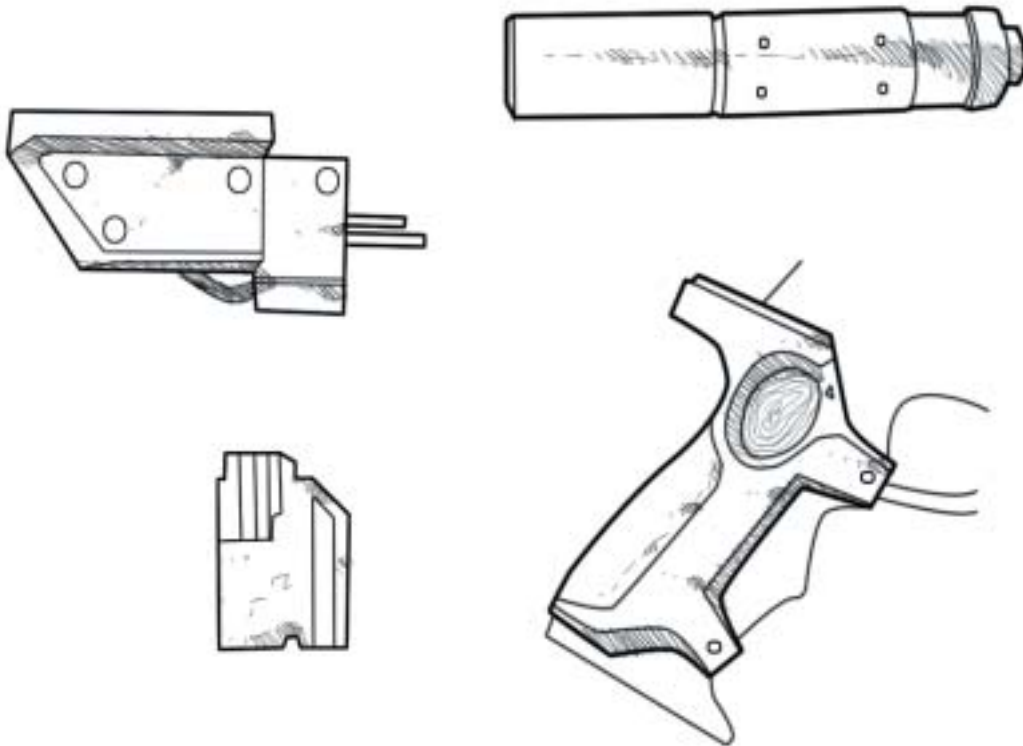
Silencer or Suppressor (TL 8): It is possible to more or less silence most firearms. This requires dropping the muzzle velocity to subsonic levels, which imposes a reduction in damage of -1 point per die (a 3d6-3 weapon delivers 3d6-6 damage). Special ammunition must be used, which costs double the base price of normal ball rounds. Suppressed ammunition cannot have any armour-piercing effect such as SAP or Super-AP. A suppressed or silenced weapon imposes a -4 DM on attempts to detect to locate it using sound. Cr. 250. Silencers/suppressors for one weapon are not interchangeable with different types; one must be purchased for each specific model of weapon used.

FOFSafety (TL 9): A built in Friend-or-Foes scanner which can be added to any firearm, this is a two piece device. The scanner itself is built directly into the firing mechanism of any trigger-activated weapon. The second piece is a transmitting tag which emits a signal to any FOF safeties it is coded for up to 50 metres away. If the scanner tries to target something within 1 metre of a transmitting tag, the trigger will not be allowed to depress and the gun will not fire. To better eliminate friendly fire incidents and other disloyal behaviour, many corporate or mercenary militaries use these devices as standard. Cr. 250 (comes with 2 transmitter tags). Additional transmitter tags are Cr. 25 each.

Gyrostabiliser (TL 9): Gyrostabilisation reduces the weapon's recoil by 1 point. Cr. 300.

Secure Weapon (TL 10): A secure weapon requires some form of authentication before it will function. This may be a DNA check, a radio signal or almost any other form of authorization. Cr. 100.

Intelligent Weapon (TL 11): The TL 11 version of this upgrade adds a computer/0 to the weapon for a cost of Cr. 1,000. At TL 13, Computer/1 is available for Cr. 5,000.



ARCHAIC FIREARMS

Most archaic (low-tech) firearms use black powder (gunpowder) as a propellant. They tend to be clumsy and slow to load even though they may be beautifully made. Most black powder weapons are smoothbores and thus very inaccurate. They can be quite deadly however, as they propel a large projectile at a respectable velocity.

Other than the occasional special project, archaic firearms cannot make use of specialist ammunition types. They can shoot a solid ball or a number of smaller projectiles (a shotgun round) but no other ammunition types. Archaic firearms have no armour-piercing capability.

One interesting alternative to black powder is the compressed-air weapon. Similar in concept to 'toy' air guns, compressed-air guns are used with an air cylinder which holds several shots worth of compressed air and is 'reloaded' with a hand pump – a long and slow process. Air weapons are silent and can be quite dangerous in the right hands.

At slightly higher Tech Levels, percussion weapons are available. These still use black powder as a propellant but instead of a flintlock or matchlock system they are initiated by a percussion cap struck by a hammer. These weapons are more reliable than flintlocks and are more resistant to environmental conditions.

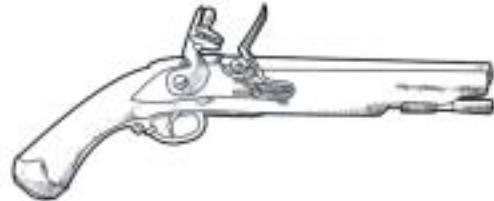
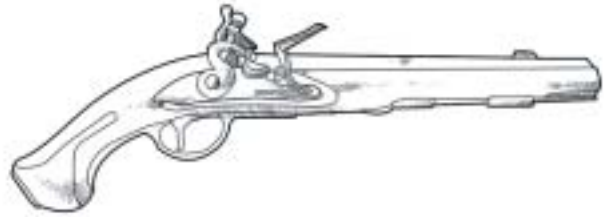
All archaic firearms are prone to malfunctions. Throw 8+ on 2d6 to avoid a misfire, with the relevant skill acting as a DM. If a misfire occurs, the character can try to shoot again the next round, this time with a DM of -2. A third attempt can be made with a -4 DM and if a misfire occurs this third time the weapon will need to be carefully cleared and cleaned before it will function properly. This applies to all black powder personal weapons and artillery.

Black powder weapons are governed by the relevant Slug Weapon skill. They take three minor actions to reload and a skill roll is needed at the end of the process. If it is failed, the weapon will not shoot and the process must be repeated.

Most black powder weapons are extremely inaccurate and suffer a negative DM to hit rolls. This is normally -1 for longarms (muskets and carbines) and -2 for pistols. Shotguns and high-quality rifles are not subject to this DM.

All black powder weapons except rifles perform poorly against armour and are treated as ST (soft-target) weapons.

Carbine, Black Powder (TL 3): A short-barrelled rifle-like weapon (or an extremely large pistol), the carbine fires a pistol-calibre ball out to a greater effective range. Carbines are usually carried by low-tech cavalry and possibly artillerymen. Ammunition is interchangeable with large-bore black powder pistols. This weapon suffers a -1 DM to attack rolls.



Coach Pistol, Black Powder (TL 3): Essentially a sawn-off double-barrelled black powder shotgun, the Coach Pistol is deadly at close range but useless for ranged fire. It is more of a deterrent than an effective weapon. The firer can choose to discharge one or both barrels. In the latter case, a single hit roll is made – either the target is hit by both barrels or not at all. Damage: is 4d6-2 for one barrel or 4d6+2 for both.

Musket, Black Powder (TL 3): A basic infantry firearm, the musket is more powerful than a carbine and has a greater range. It is normally issued with a large spike bayonet to make the weapon usable as a crude pike, though a musket also makes a pretty decent cudgel in its own right.

Pistol, Black Powder, Heavy (TL 3): A long, heavy pistol which is awkward to carry, the heavy pistol often has a metal-shod butt, making it a reasonable cudgel once discharged. It is sometimes referred to as a Horse Pistol, as these weapons are favoured by cavalry. This weapon suffers a -2 DM to hit rolls.

Pistol, Black Powder, Light (TL 3): A smaller weapon, the light pistol is best suited for use as a sidearm. It is not very effective but certainly better than nothing. This weapon suffers a -2 DM to hit rolls.

Pistol, Duck's Foot (TL 3): Essentially a tool for intimidating a mob, the duck's foot pistol has several (four to eight) splayed barrels which are all discharged at once. Its effects are fairly random and are treated as autofire against up to three targets. It is not possible to concentrate this fire; each attack must be against a different target.

Rifle, Black Powder Rifle (TL 3): Basically a musket with a rifled barrel, the black powder rifle is slow-loading but is much more accurate than a musket. It takes six minor actions to reload a rifle of this sort and the usual skill roll is needed at the end of the process. The standard rifle suffers the usual -1 DM for black powder longarms but for Cr. 500 it is possible to get a very well made rifle that does not suffer this penalty. Ammunition is not interchangeable with other black powder weapon types.

Shotgun, Black Powder (TL 3): Little different from a modern shotgun, other than the fact it uses loose ammunition and powder rather than all-in-one cartridges, the black powder shotgun has similar performance to more modern versions. Some shotguns are single barrelled, often with a bell mouth, creating a 'blunderbuss' or 'mob gun'. If the weapon has two barrels, the firer can choose to discharge one or both barrels at a time. In the latter case, a single hit roll is made – either the target is hit by both barrels or not at all. Damage: is 4d6 with one barrel and 4d6+4 if both are fired at once.

Rifle, Air, Reservoir (TL 3): A rifle whose projectile is propelled by compressed air. It is charged by pumping an internal reservoir to the required pressure. One shot can be fired before the reservoir needs recharging. This is not a toy – weapons of this type are designed to kill, though the time spent pumping the reservoir (10 rounds) makes



them more useful for hunting than combat. Air weapons are more or less silent.

Revolver, Cap-And-Ball (TL 4): A basic revolving-cylinder handgun in a calibre around 10–12mm. The cylinder holds six rounds which are loaded in a somewhat lengthy process taking 1d6 minor actions per round loaded. The weapon can be partially or fully loaded. Cap-and-ball weapons are a transition phase from black powder to all-in-one cartridge weapons. They are soon eclipsed by more efficient weapons.

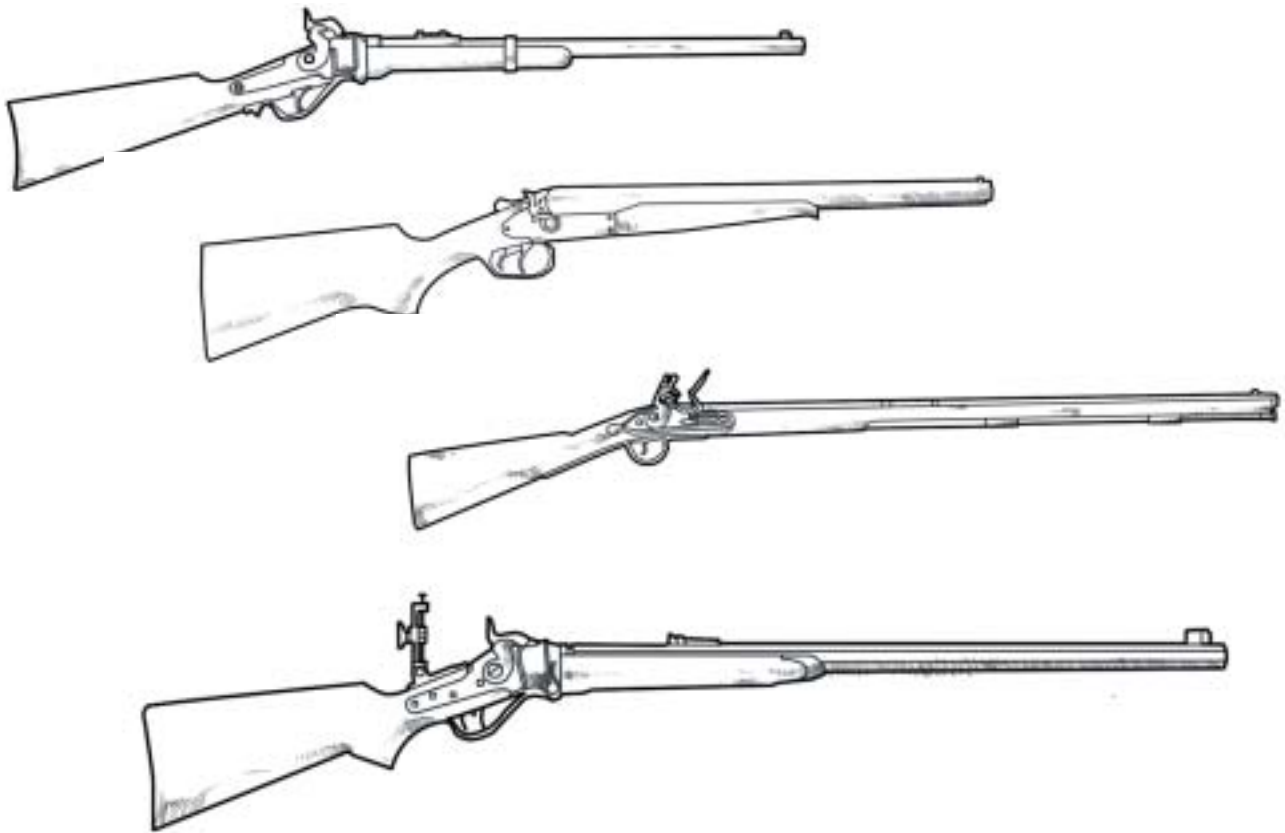
Revolver, Cap-And-Ball, Light (TL 4): A weapon very similar to the standard cap-and-ball revolver but chambered for 8–10mm ammunition, the light cap-and ball revolver has fairly poor stopping power but is a big advance over one-shot black powder pistols of similar calibre.

Rifle, Air, Cylinder (TL 4): An advance on the 'reservoir' type air rifle, the cylinder type uses a detachable 'cylinder' (which is, in fact,

usually spherical with a valve on top). A fully charged cylinder is good for 4 shots and can be recharged using a hand pump in 60 minor actions. The weapon is a single-shot muzzle or breech loader but is faster to fire than a musket and has the advantage of being silent. Spare cylinders mass 1 kg and can be carried ready-charged.

Rifle-Musket, Percussion (TL 4): A rifled single-shot weapon firing a shaped bullet rather than a ball but still using black powder propulsion (albeit initiated by percussion cap), the rifle-musket shoots faster, further and more accurately than a smoothbore musket. It requires 2 minor actions to reload a weapon of this type; no skill roll is necessary.

Rifle-Musket, Percussion, Sharpshooter (TL 4): A high-calibre percussion rifle designed not for rapid firing but instead for maximum penetration and damage. With its integrated magnification scope long-distance targets can be efficiently killed.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)	Special
Air Rifle, Reservoir	3	Shotgun	Gun Combat (Slug Rifle)	2d6+2	1	No	-2	225	4	1	Silent
Black Powder Carbine	3	Shotgun	Gun Combat (Slug Carbine)	3d6-4	1	No	-1	80	3	5	-1 DM to Hit
Black Powder Coach Pistol	3	Pistol	Gun Combat (Shotgun)	4d6-2	2	No	2	60	1.5	5	
Black Powder Musket	3	Shotgun	Gun Combat (Slug Rifle)	3d6-3	1	No	1	100	6	10	-1 DM to Hit
Heavy Black Powder Pistol	3	Pistol	Gun Combat (Slug Pistol)	3d6-5	1	No	0	100	1	5	-2 DM to Hit
Light Black Powder Pistol	3	Pistol	Gun Combat (Slug Pistol)	3d6-6	1	No	-1	100	1	5	-2 DM to Hit
Black Powder Shotgun	3	Shotgun	Gun Combat (Shotgun)	4d6	1 or 2	No	2	120	4	5	
Black Powder Rifle	3	Rifle	Gun Combat (Slug Rifle)	3d6-3	1	No	-1	100	6	10	-1 DM to Hit
Duck's Foot Pistol	3	Pistol	Gun Combat (Slug Pistol)	3d6-6	4-8	3	1	150	0.75	5	Multiple Targets
Air Rifle, Cylinder	4	Shotgun	Gun Combat (Slug Rifle)	3d6-2	1	No	-2	350	5	1	Silent
Cap-and-Ball Revolver	4	Shotgun	Gun Combat (Slug Pistol)	3d6-3	6	No	1	150	1	5	
Cap-and-Ball Revolver, Light	4	Shotgun	Gun Combat (Slug Pistol)	2d6-2	6	No	1	125	1	5	
Rifle-Musket, Percussion	4	Rifle	Gun Combat (Slug Rifle)	3d6-1	1	No	1	150	3	9	
Rifle-Musket, Percussion,	4	Rifle	Gun Combat (Slug Rifle)	2d6+6	1	No	3	500	5.5	5	

HANDGUNS

The basic self-defence sidearm is a handgun; a small weapon holding a limited amount of ammunition and capable of being fired using either one or both hands. The two most common types of slug throwing handgun are revolvers and self-loading pistols (often known as semi-automatics, automatics or autopistols). Other variations on the theme do exist but are less common.

Revolvers are (as a rule) slightly more robust, simpler to use and generally more idiot-proof than semi-automatics. They are fed from a revolving cylinder which normally holds six rounds (or less in very powerful weapons) and places each round under the hammer in turn. Revolvers are thus somewhat bulky but they have the advantage that if a round malfunctions, it is usually possible to simply pull the trigger again to fire the next one. They are also slow-loading, requiring each round to be manually placed in the cylinder. A variety of devices (stripper clips, half-moon clips and speedloaders) exist to speed up this process. It is difficult to silence a revolver; few silenced versions exist.

Autopistols are fed from a magazine (sometimes incorrectly named a "clip"), which is usually inserted in the handgrip. Autopistols are slightly more complex than revolvers, though they are not really any more difficult to use. They are prized mainly for their high magazine capacity and speed of reloading.

Two less common variants on the handgun concept are the derringer and the body pistol. Derringers are very small single or double barrelled weapons intended for concealment. They are reloaded manually but if a situation exists where you need to reload your derringer then you should have brought a bigger gun.

Body pistols include a variety of small, concealable handguns. Low-tech versions are simply difficult to spot due to their small size but more advanced ones use specialist non-metallic materials to make detection by automated equipment difficult. Such hard to spot (or "stealth") weapons are illegal in most areas.

Body pistols come in two general types: the derringer and the true pistol (autopistol usually but sometimes revolver configuration). Derringer types are sometimes built into innocuous-seeming objects as a single-shot surprise package. The weapon traditionally known as a "body pistol" is a tiny semi-automatic weapon fed from a magazine, (usually with a capacity of 5 rounds) and can be quickly reloaded.

Weapons come in various calibres. Standard weapons are typically chambered for rounds in the 9mm to 11mm range. Lighter weapons, designed for small size or low recoil, are typically chambered in 5mm to 7mm. Heavy weapons using 12mm, 14mm and even larger calibres are more unusual but by no means unknown.

Note that these weapons are representative. It is possible to buy an autopistol with a 19-round magazine, or one holding 11 rounds.



Such minute details are beyond the scope of a rules set and should be implemented by the Referee if it seems like a good idea.

All handguns use Handgun (or Pistol) skill.

Zip Gun (TL 3): A Zip Gun is a one-shot weapon cobbled together from whatever materials are available. In theory zip guns can be made to fire any ammunition but the most common sorts (zip guns are by definition unique) use 9mm or 7mm, the most readily available ammunition types. It is rare to build a zip gun around very powerful cartridges as the risk of explosion is considerable. All zip guns suffer a -1 DM on attacks.

Derringer, Heavy (TL 5): A simple single or double-barrelled pistol chambered for a standard 10mm cartridge. The derringer is not a repeating weapon; each barrel must be reloaded after firing. If both barrels are fired together, a single hit roll is made for both. The weapon's very short barrel reduces both accuracy and muzzle velocity, resulting in slightly less damage than a typical 10mm handgun. Damage is 3d6-3 or 4d6-4 if both barrels are fired together at the same target.

Derringer, Light (TL 5): A simple single or double-barrelled pistol chambered for a light 7mm ridge. The derringer is not a repeating weapon; each barrel must be reloaded after firing. If both barrels are fired together, a single hit roll is made for both. Damage is 2d6-2 or 3d6-3 if both barrels are fired together at the same target.

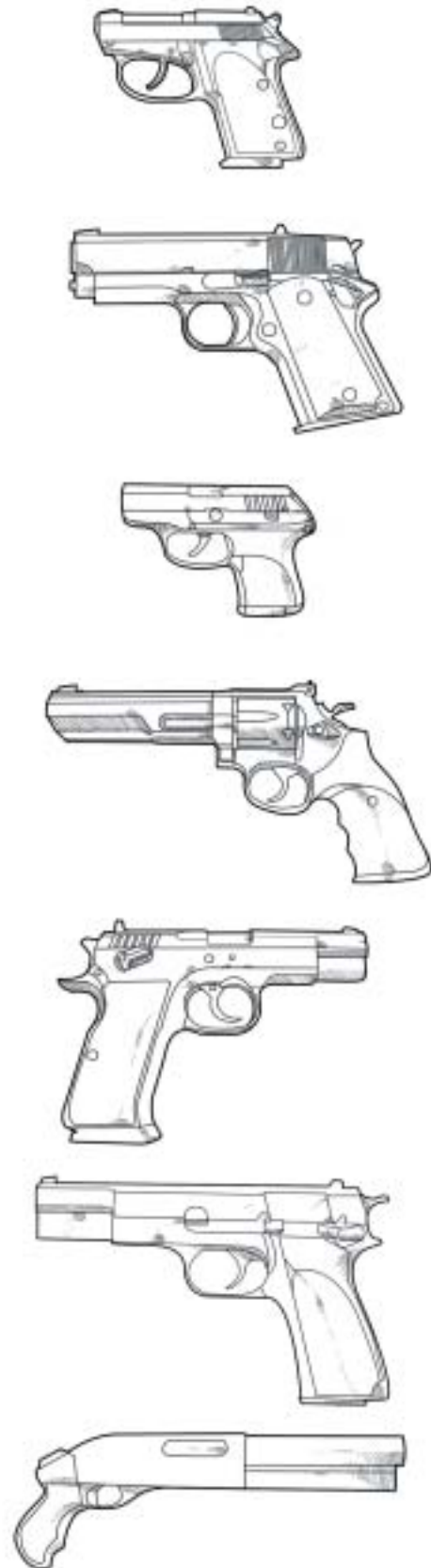
Pistol, Shot (TL 5): A single shot, break-open smoothbore handgun designed to fire non-standard low-powered 14mm cartridges loaded with snakeshot or flechette ammunition, mainly to deal with snakes and similar vermin. The Shot Pistol is virtually useless beyond 3m. For Cr. 75, a double-barrelled version is available, which weighs 400g. Damage is normally 3d3, or 4d3 if both barrels hit the same target at once.

Revolver (TL 5): A basic revolving-cylinder handgun using standard 9mm pistol ammunition, the revolver is easy to use and reload. Six cartridges are inserted one at a time into the cylinder. If reloading with individual ammunition, three rounds can be inserted in a single minor action. If a device such as a speedloader is used, the weapon can be fully reloaded in one minor action. Revolvers are favoured for their grab-and-shoot simplicity.

Revolver, Light (TL 5): A simple and basic handgun, the light revolver is easy to use and reload, with low recoil due to its smaller cartridge.

Autopistol, 9mm (TL 6): A semi-automatic handgun fed from a 15-round magazine, the autopistol is a standard sidearm throughout Charted Space. It is simple to use, even for untrained personnel. Changing magazines takes one minor action.

Autopistol, Light (TL 6): A small-calibre semi-automatic handgun fed from a 16-round magazine, the light autopistol is a standard



weapon among personnel who are not really expecting trouble. It is simple to use, even for those untrained in its use.

Autopistol, Light, Slimline (TL 6): A small-calibre semi-automatic handgun fed from an 8-round magazine, the slimline autopistol is simply a smaller version of the standard light autopistol, designed to be concealed in a pocket or bag.

Pistol, Target (TL 6): (Cr. 500, TL 5, 800g) An extremely accurate handgun chambered for 7mm light pistol ammunition. Single-shot and magazine-fed versions are available. The latter holds 5 rounds. When shooting at Shotgun range or longer, the target pistol allows a DM of +1 to hit providing the user is taking careful aim rather than conducting point-and-shoot fire.

Purse Gun (TL 6): An extremely light handgun built around a cut-down version of the already underpowered Survival Rifle round, the Purse Gun is a double-action semi-automatic pistol fed from a 6-round internal magazine. Unusually, the magazine is not removable but is reloaded manually (2 rounds per minor action). Performance against armour is lamentable. Many users consider purse guns to be disposable items.

Revolver, Heavy (TL 6): A more robust and solidly built version of the standard revolver, a heavy revolver is based on the same principle. It fires a long (Magnum) 10mm cartridge which is not compatible with 'ordinary', 'non-Magnum' 10mm weapons. Some heavy revolvers use a non-Magnum (standard sized) 12mm pistol round instead.

Autopistol, 10mm (TL 7): A fairly standard autopistol chambered for the slightly more powerful 10mm pistol cartridge.

Autopistol, Heavy (TL 7): A heavy-frame semi-automatic handgun fed with 12mm ammunition from a 9-round magazine, the heavy autopistol packs a powerful punch but is heavy and bulky to carry. Recoil is considered too unpleasant by some users.

Pistol, Cartridge (TL 7): A smoothbore revolver chambered for a non-standard 13mm light shotgun cartridge, this weapon is often used to carry snakeshot for dealing with vermin but has some combat applications. All shotgun rules apply to this weapon.

Revolver, Very Heavy (TL 7): A very solidly built revolver, often using cut-down big game rifle cartridges around 14mm in calibre, Very Heavy Revolvers are unpleasant to shoot and uncontrollable for most users. The cylinder holds only 4 rounds and speedloaders are not usually available.

Revolver, Twin Cylinder (TL 8): This is a standard revolver built around a special ammunition delivery system cycling around two individual wheels, each holding the normal six rounds. The twin cylinder revolver drops two rounds into twin barrels with each pull of the trigger. This weapon fires twice with each attack, with any successful hit resulting in two impacts.



Autopistol, Light, Universal (TL 8): A small-calibre semi-automatic handgun designed to be used by a variety of alien hands and appendages, enabling the Imperial armed forces to issue a standard sidearm to non-human personnel. The weapon is known as a 'staple gun' for its shape and is of modest effectiveness. It is fed by a 10-round magazine.

Autopistol, Very Heavy (TL 8) An extremely heavy-frame semi-automatic handgun using 14mm ammunition in a 7-round magazine, the very heavy autopistol is too powerful for most users.

HEAP Gun (TL 8): A variant on the derringer principle, the HEAP Gun fires High-Explosive Armour-Piercing (HEAP) Snub Pistol ammunition and is specifically built around this round. It is a small handgun fed by a 4-round magazine. If HEAP rounds are not available, any snub pistol ammunition can be used but performance is not impressive with ball rounds. Recoil is low compared to the weapon's stopping power and it is favoured as a concealed-carry weapon or 'purse gun' by some users.

Body Pistol (TL 8): A small, non-metallic semiautomatic pistol designed to evade detection by most weapon detectors. The weapon is fed from a detachable box magazine containing 6 rounds. Body pistol ammunition is typically of very small (5mm) calibre and is not interchangeable with the ammunition for any other type of weapon. It is made of the same non-metallic materials as the pistol and is

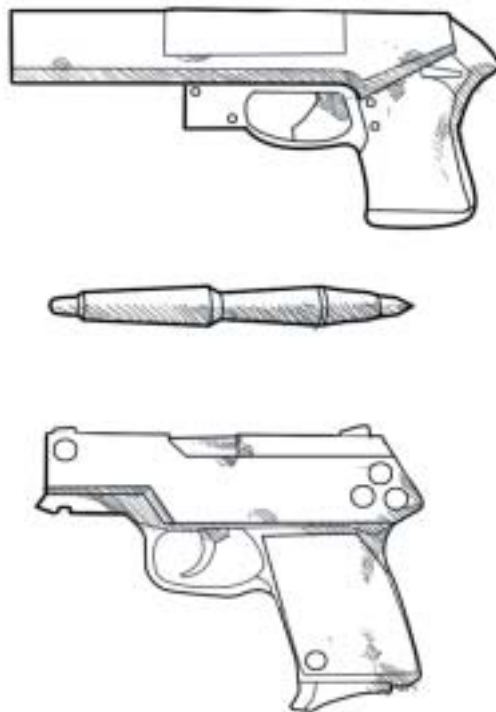
designed to be difficult to detect. Body Pistols are not silent, though silenced versions are possible.

Body Pistol, Heavy (TL 9): A single or double-barrel version of the body pistol firing a single large (13mm) cartridge in the manner of a derringer. Heavy Body pistol ammunition is not interchangeable with the ammunition for any other type of weapon.

Pistol, Flechette (TL 9): Designed to be an efficient and silent weapon for use by those who do not wish to bring attention to themselves. It uses compressed air to launch a cluster of metal darts.

Body Pistol, Concealed (TL 10): A single-shot variant of the Body Pistol built into an otherwise innocuous object like a pen, belt buckle or attaché case handle, the concealed body pistol is a single-shot weapon requiring dismantling to reload but can be used to deliver a nasty surprise to an enemy. They are illegal almost everywhere.

Spurt Gun (TL 12): Spurt guns are illegal in most areas and are very unreliable. Effectively, the spurt gun is a small disposable pistol that fires 200 small ceramic balls in a single burst, becoming very hot in the process. The firer takes one point of damage if the weapon is dropped immediately after firing and 1d6 more if he keeps hold of it. After firing, the spurt gun is effectively destroyed and useless. Spurt guns cannot be reloaded. A spurt gun can make only one form of attack, hosing the target with autofire at very close range.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)	Special
Zip Gun, 7mm	3	Pistol	Gun Combat (Slug Pistol)	2d6-4	1	No	1	60	0.4	5	
Zip Gun, 9mm	3	Pistol	Gun Combat (Slug Pistol)	2d6-1	1	No	2	80	0.5	5	
Heavy Derringer	5	Pistol	Gun Combat (Slug Pistol)	3d6-4 or 4d6-4	1 or 2	No	1	200	0.6	1	Derringer
Light Derringer	5	Pistol	Gun Combat (Slug Pistol)	2d6-2 or 3d6-3	1 or 2	No	1	150	0.4	1	Derringer
Shot Pistol	5	Pistol	Gun Combat (Slug Pistol)	3d3	1 or 2	No	0	60 or 75	0.3 or 0.4	1	Shotgun
Revolver	5	Pistol	Gun Combat (Slug Pistol)	3d6-3	6	No	0	150	1	5	
Light Revolver	5	Pistol	Gun Combat (Slug Pistol)	2d6-2	6	No	-1	100	0.65	4	
9mm Autopistol	6	Pistol	Gun Combat (Slug Pistol)	3d6-3	15	No	0	200	1	10	
Light (7mm) Autopistol	6	Pistol	Gun Combat (Slug Pistol)	2d6-2	16	No	-1	150	0.5	7	
Slimline Light (7mm) Autopistol	6	Pistol	Gun Combat (Slug Pistol)	2d6-2	8	No	-1	140	0.4	7	
Target Pistol	6	Pistol	Gun Combat (Slug Pistol)	2d6-2	1 or 5	No	-1	500	0.5	3	
Purse Gun	6	Pistol	Gun Combat (Slug Pistol)	1d6+1	6	No	-2	50	0.15	2	
Heavy Revolver	6	Pistol	Gun Combat (Slug Pistol)	4d6-4	6	No	2	400	1.5	12	

PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)	Special
10mm Autopistol	7	Pistol	Gun Combat (Slug Pistol)	3d6-2	12	No	1	250	1.1	10	
Heavy (12mm) Autopistol	7	Pistol	Gun Combat (Slug Pistol)	3d6-1	9	No	2	500	1.5	12	
Very Heavy (14mm) Revolver	7	Pistol	Gun Combat (Slug Pistol)	4d6-2	4	No	3	1000	2.25	15	
Cartridge Pistol	7	Pistol	Gun Combat (Slug Pistol)	2d6+3	6	No	4	300	1.5	10	
Twin Cylinder Revolver	8	Pistol	Gun Combat (Slug Pistol)	3d6+1	12	No	3	450	2	10	
HEAP Gun	8	Pistol	Gun Combat (Slug Pistol)	3d6+2 (HEAP) or 2d6-2 (Ball)	4	No	-2	500	0.3	20	AP effect with HEAP;
Universal Light (7mm) Autopistol	8	Pistol	Gun Combat (Slug Pistol)	2d6-2	10	No	-1	500	0.75	5	
Very Heavy (14mm) Autopistol	8	Pistol	Gun Combat (Slug Pistol)	4d6-1	7	No	3	1,250	2.5	20	
Body Pistol	8	Pistol	Gun Combat (Slug Pistol)	3d6-3	6	No	-1	500	0.4	20	
Heavy Body Pistol	9	Pistol	Gun Combat (Slug Pistol)	2d6+1	1 or 2	No	1	600	0.4	100	
Flechette Pistol	9	Pistol	Gun Combat (Slug Pistol)	3d6-2	20	4	1	250	1	10	
Concealed Body Pistol	10	Pistol	Gun Combat (Slug Pistol)	2d6-3	1	No	-2	2,000 or more	-	50	
Spurt Gun	12	Pistol	Gun Combat (Slug Pistol)	2d6	200 (1 attack)	6	0	300	0.3	-	

SUBMACHINE GUNS AND LIGHT ASSAULT WEAPONS

Submachine guns normally use light and Shotgun calibre pistol ammunition, which is interchangeable with the ammunition used in handguns, though magazines are usually not. Most submachine guns (SMGs) are intended to be used in both hands and were designed with the purpose of automatic fire in mind. They usually have a selector allowing semi-automatic, burst fire or full-automatic modes to be chosen. Some lower-tech SMGs are full-auto only. Larger submachine guns are considered to be longarms and use Slug Carbine skill. Smaller ones are considered pistols and use Slug Pistol skill.

Assault Pistol (TL 6): A 9mm autopistol converted to fire bursts of fully-automatic fire, assault pistols are horribly inaccurate and suffer a -2 DM to hit when using burst or autofire modes. They use standard 15-round magazines which can be emptied very quickly.

Assault Pistol, Light (TL 6): (Cr. 600, TL 5, 800g) A version of the standard assault pistol based around a lighter 7mm cartridge, the light assault pistol shares all the sins of its larger cousin but the lower recoil reduces the DM to -1. The weapon is capable of full-auto fire or semi-automatic mode. It uses standard 15-round magazines.

Submachine gun, Pistol-Type (TL 6): A smaller version of the SMG, not much larger than a handgun, which may or may not have a

folding stock. 16 or 30-round magazines are inserted into the weapon via the base of the pistol grip. Larger magazines stick out a long way and are somewhat clumsy. Range is lower and recoil is higher than a standard SMG but the weapon is handier at close quarters.

Submachine gun, Light (TL 6): A version of the standard carbine-type SMG using small-calibre (7mm) ammunition, the light SMG is otherwise identical.

Submachine gun, Assault, Heavy (TL 7): A version of the standard carbine-type SMG using heavy (12mm) autopistol ammunition, the assault SMG is quite bulky and heavy, though it is still shorter than a rifle and handy in close action. It is fed by a top-mounted 50-round box magazine or a smaller 20-round 'carry' magazine.

Submachine gun, Light, Rapid-fire (TL 7): A version of the light SMG, this weapon is capable of emptying itself very quickly. Even with a 50-round magazine, firepower is limited. It can be used to deliver several attacks using autofire at a rating of 4 or the entire magazine in a single Rapid-Fire (RF) attack. This can only be done with a magazine that is still at least half full.

Submachine gun, Flechette (TL 9): A scaled-up version of the flechette pistol capable of full-automatic fire. A longer barrel, 'assault' foregrip and folding stock make this more of a combat weapon than an assassination tool, which the pistol is often seen as. It retains the same general pistol-type shape however.

TRAVTECH PRESENTS...

SUBMACHINE GUN, CARBINE-TYPE (TL 6)

A LIGHT AUTOMATIC WEAPON DESIGNED TO FIRE PISTOL AMMUNITION. MAGAZINES HOLDING 30 CARTRIDGES ARE INSERTED INTO THE WEAPON FORWARD OF THE TRIGGER GUARD. THE WEAPON HAS A FOLDING OR FIXED STOCK AND IS MORE ACCURATE THAN A PISTOL-TYPE SMG. SUBMACHINE GUNS ARE USUALLY CAPABLE OF FULL-AUTOMATIC, BURST FIRE OR SEMI-AUTOMATIC MODES.

PRICE: CR. 500

WEAPON TYPE: MACHINE GUN

SHIPPING DATE: 256 - 1105

REF: 978-1-906508-36-4 /// TTAG 2317



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PLEASE NOTE: ALL USED GUNS ARE SOLD AS IS, WITH PERMISSION FROM THEIR PREVIOUS OWNER/S.

TRAVTECH PRESENTS...

SUBMACHINE GUN, BOARDING, (TL 8)

A SLIGHTLY DIFFERENT APPROACH TO THE SMG CONCEPT, THE BOARDING GUN, OR 'DECK SWEEPER' AS IT IS SOMETIMES KNOWN, IS A 10MM SMG WITH AN INTEGRAL SINGLE-SHOT 20MM UNDER-BARREL GRENADE LAUNCHER. THE LOW-POWERED 20MM GRENADES USED IN THIS LAUNCHER ARE NOT COMPATIBLE WITH OTHER WEAPONS AND ARE BASED ON CUT-DOWN LIGHT ASSAULT GUN CARTRIDGES. EITHER THE SMG OR THE GRENADE LAUNCHER CAN BE FIRED EVERY ROUND BUT NOT BOTH. SLUG CARBINE SKILL IS USED WITH BOTH WEAPONS. THE SMG COMPONENT IS FED BY A TOP-MOUNTED 50-ROUND BOX MAGAZINE OR A SMALLER 20-ROUND 'CARRY' MAGAZINE. THE GRENADE LAUNCHER IS MANUALLY RELOADED AND CARRIES A SINGLE ROUND IN THE BREECH. THE ONLY GRENADES AVAILABLE ARE HIGH EXPLOSIVE ARMOUR PIERCING (HEAP) 'BREACHING' ROUNDS FOR PUTTING HOLES IN DOORS AND BULKHEADS AND A MULTIPLE PROJECTILE ROUND.

PRICE: CR. 1,200

WEAPON TYPE: MACHINE GUN

SHIPPING DATE: 306 - 1105

REF: 978-1-906508-67-8 /// TTAG 1432



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TRAVTECH PRESENTS...

GRENADE LAUNCHER,

ASSAULT, 25MM (TL 9)

A SHORT-BARRELLED LIGHT SEMI-AUTOMATIC GRENADE LAUNCHER RESEMBLING A BLOCKY SHOTGUN IN SOME WAYS, THE ASSAULT GRENADE LAUNCHER, OR AGL, IS FED BY A TOP-LOADING 10-ROUND MAGAZINE AND CAN LAUNCH SMALL EXPLOSIVE OR FLECHETTE ROUNDS. RECOIL IS LIGHT DUE TO THE WEAPON'S VERY LOW VELOCITY, WHICH LIMITS RANGE BUT CAN BE USEFUL IN LOW-G ASSAULTS. A 'STICKY' SHAPED-CHARGE BREACHING GRENADE IS AVAILABLE BUT HAS NEVER PROVEN VERY EFFECTIVE.

PRICE: CR. 1,000

WEAPON TYPE: GRENADE LAUNCHER

SHIPPING DATE: 007 - 1106

REF: 978-1-906508-21-4 /// TTAG 7311



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PLEASE NOTE: ALL USED GUNS ARE SOLD AS IS, WITH PERMISSION FROM THEIR PREVIOUS OWNER/S.

PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)	Special
Assault Pistol	6	Pistol	Gun Combat (Slug Pistol)	3d6-3	15	4	1	750	1	10	
Light Assault Pistol	6	Pistol	Gun Combat (Slug Pistol)	2d6-2	12	4	0	600	0.8	8	
SMG, Carbine Type	6	Assault Weapon	Gun Combat (Slug Carbine)	3d6-3	30	4	1	500	3	20	
SMG, Pistol Type	6	Pistol	Gun Combat (Slug Pistol)	3d6-3	16 or 30	4	2	400	2	20	
SMG, Carbine Type, Light	6	Assault Weapon	Gun Combat (Slug Carbine)	2d6-2	30	4	0	400	2.5	20	
SMG, Assault, Heavy	7	Assault Weapon	Gun Combat (Slug Carbine)	3d6	20 or 50	4	2	1,000	3.5	75	
SMG, Carbine Type, Light	7	Assault Weapon	Gun Combat (Slug Carbine)	2d6-2	50	8	0 (autofire) or 3 (rapid-fire)	600	2.5	35	
SMG, Boarding	8	Assault Weapon	Gun Combat (Slug Carbine)	3d6-1	20 or 50	4	2	1,200	4	70	
Assault Grenade Launcher	9	Assault Weapon	Gun Combat (Slug Carbine)	4d3 (flechettes) or 4d6 (explosive)	10	No	0	1,000	4.5	100	
Flechette Submachine gun	9	Shotgun	Gun Combat (Slug Pistol)	3d6	40	4	1/2	500	3	10	

SHOTGUNS

Shotguns are smoothbore weapons which usually fire a number of sub-calibre projectiles from a single cartridge. They are inaccurate but have an area effect, making them suitable for hunting small game. At close range, shotguns have impressive knockdown power but they are not very useful for ranged combat. Shotguns ignore dodge modifiers and in some cases gain a positive DM to hit. This applies only to shot or flechette ammunition. Solid slug and other single projectiles do not gain this bonus.

If both barrels of a double-barrelled weapon are fired simultaneously at the same target, they are not treated as two separate attacks but as a single, larger, shotgun attack. Damage is only slightly higher than if one barrel is used but the difference can be significant.

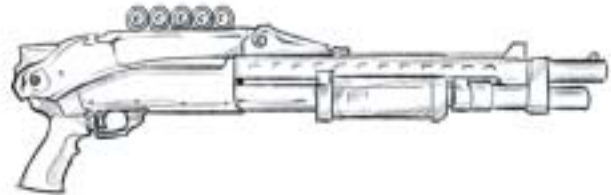
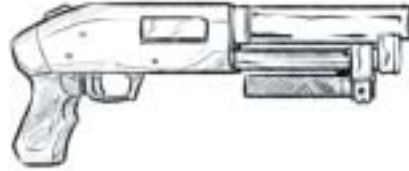
All shotguns (unless firing solid ammunition) treat any armour the target may have as doubled in effect.

Shotgun, Combat (TL 4): The combat shotgun is a single-barrel smoothbore weapon fed from an internal magazine. Operation may be semi-automatic, pump-action, or both at the user's choice, depending on the design. The combat shotgun uses 18mm diameter shells normally containing six 7mm bullets (buckshot) but can also use birdshot (larger numbers of very small pellets) or flechettes ammunition which is roughly equivalent to birdshot. The magazine can be manually reloaded (at the rate of three shells per minor action) and typically holds six rounds. Some versions of the combat shotgun use detachable magazines holding up to 10 rounds but these are bulky and awkward to carry.

Shotgun, Sporting, Light (TL 4): A double-barrelled sporting shotgun using light shotgun ammunition to bring down small game. Light shotguns have low recoil and are useful for lighter individuals if stopping power is not a major issue. Damage is 3d6, or 4d6 if both barrels are discharged together.

Shotgun, Short (TL 5): Simply a smaller and stockless version of the standard combat shotgun, the short shotgun holds 3 round in its magazine and one in the breech. It is popular as a vermin-control tool and for close-range self-defence.

Shotgun, Sporting (TL 5): A double or single barrelled shotgun for hunting purposes, the sporting shotgun uses standard shotgun ammunition. Each barrel must be manually reloaded after firing. One or both barrels can be reloaded per minor action. The firer can choose whether to discharge one or both barrels at the same time. In the latter case, a single hit roll is made for both barrels. Damage is normally 4d6; 5d6 if both barrels are discharged together.



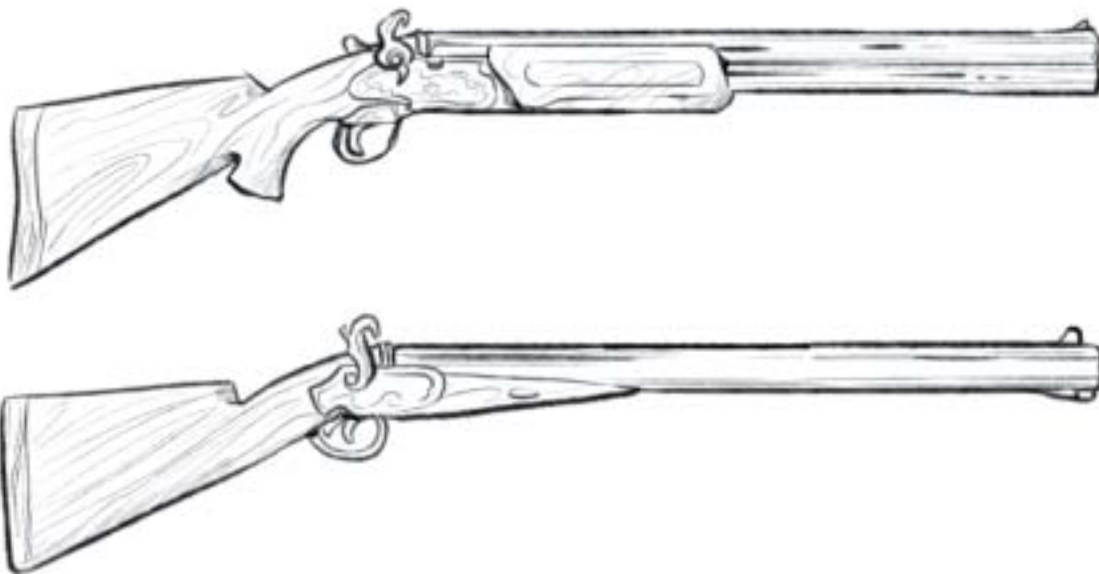
Shotgun, Sporting, Sawn-off (TL 5): Popular more as a threat and (comparatively) ease of concealment than as a serious combat weapon, a sawn-off is a sporting shotgun with the barrels greatly shortened and the stock removed. The sawn-off has a very short range but a wide spread of shot that gives a +4 DM to hit at close range (within 3 m). Damage is 4d6 or 5d6 if both barrels are discharged at the same time. A sawn-off shotgun is ineffective beyond Short range.

Shotgun, Assault (TL 6): A heavy shotgun fed from a 7-round detachable box or a bulky 20-round drum, the assault shotgun is

capable of semi-automatic or burst fire. It uses the same ammunition as other shotguns. Reloading with either type of magazine takes one minor action.

Shotgun, Mauler (TL 9): Based on a pistol chassis, the mauler shotgun is a shotgun revolver. Semi-automatic, the mauler can fire as fast as the wielder can pull the heavy trigger. If the user is able to compensate for the weapon's recoil, it can be fired as if it had an Auto Rating of 4.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Combat Shotgun	4	Shotgun	Gun Combat (Shotgun)	4d6	6	No	2	200	4	10
Sporting Shotgun, Light	4	Shotgun	Gun Combat (Shotgun)	3d6	2	No	1	120	2	2
Short Shotgun	5	Pistol	Gun Combat (Shotgun)	4d6	3	No	2	125	2.5	3
Sporting Shotgun	5	Shotgun	Gun Combat (Shotgun)	4d6	1 or 2	No	2	150	3	2
Sawn-Off Shotgun	5	Thrown	Gun Combat (Shotgun)	4d6	2	No	3	120	1.5	2
Assault Shotgun	6	Shotgun	Gun Combat (Shotgun)	4d6	7 or 20	4	2	250	4.5	20
Mauler Shotgun	9	Pistol	Gun Combat (Shotgun)	4d6	8	No (4)	2	300	3.5	20



RIFLES AND CARBINES

Various weapons are known by the blanket designation of 'rifle'. Generally speaking any two-handed projectile weapon with a rifled barrel not fitting into another category is termed a rifle of one sort or another. Most rifles either use a light round (usually in the 5–6mm range) or a heavy one (in the 7–8mm range). Although these calibres are lower than those used in handguns the cartridge is longer and contains more propellant. Coupled with a longer barrel this makes for a higher muzzle velocity and greater penetration of the target. All weapons in this section use Slug Rifle or Slug Carbine skill.

Autocarbine (TL 5): The forerunner of the assault rifle, an autocarbine is simply a carbine (see below) capable of automatic fire. It is fed by a 20-round magazine and uses standard 5mm light rifle ammunition. Replacement of an empty magazine takes one minor action. Muzzle velocity is high enough to give this weapon an intrinsic Semi Armour Piercing (SAP) effect, ignoring up to 1 point of armour.

Carbine-Revolver (TL 5): A 6-shot revolver with an extremely long barrel and a rifle-type stock, the carbine-revolver is an early TL 5 attempt to create a repeating longarm. Reloading is a clumsy business; 2 rounds can be loaded in one minor action. This weapon uses 9mm pistol ammunition and has no armour-piercing capability.

Carbine (TL 5): A short, semi-automatic longarm firing a small-calibre (5mm Light Rifle) round. The weapon is fed by a detachable box magazine containing 10 rounds, which is inserted into the underside of the carbine ahead of the trigger guard. Most carbines come with a shoulder sling but no bayonet lug. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 1 point of armour.

Rifle, Big Game, Bolt (TL 5): A bolt-action rifle firing heavy 14mm ammunition which is not compatible with other rifles. It is fed by a 5-round internal magazine. Recoil is high but stopping power is impressive. Big game rifles sometimes use armour-piercing or explosive ammunition to deal with truly massive creatures. This weapon's muzzle velocity is relatively low; it has no intrinsic armour-piercing capability.

Rifle, Full-bore, Bolt (TL 5): A standard mid-tech military weapon, firing a 7mm bullet at high velocity. 5 rounds are held in an internal magazine. These are reloaded manually (3 rounds can be inserted in one minor action) or using a clip which allows complete reloading in one minor action. It is possible to chamber a round manually each time the rifle is fired, retaining a full magazine for emergency fire. Military rifles usually have a shoulder sling and a bayonet mounting. Most civilian hunting rifles are broadly similar in function to this weapon. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring 1 point of armour the target may have.



Rifle, Heavy, Bolt (TL5): A powerful 10mm rifle normally used by mid-tech snipers and hunters, the heavy bolt-action rifle holds 4 rounds in an internal magazine. These are reloaded manually (3 rounds can be inserted in one minor action) or using a clip which allows complete reloading in one minor action. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 2 points of armour.

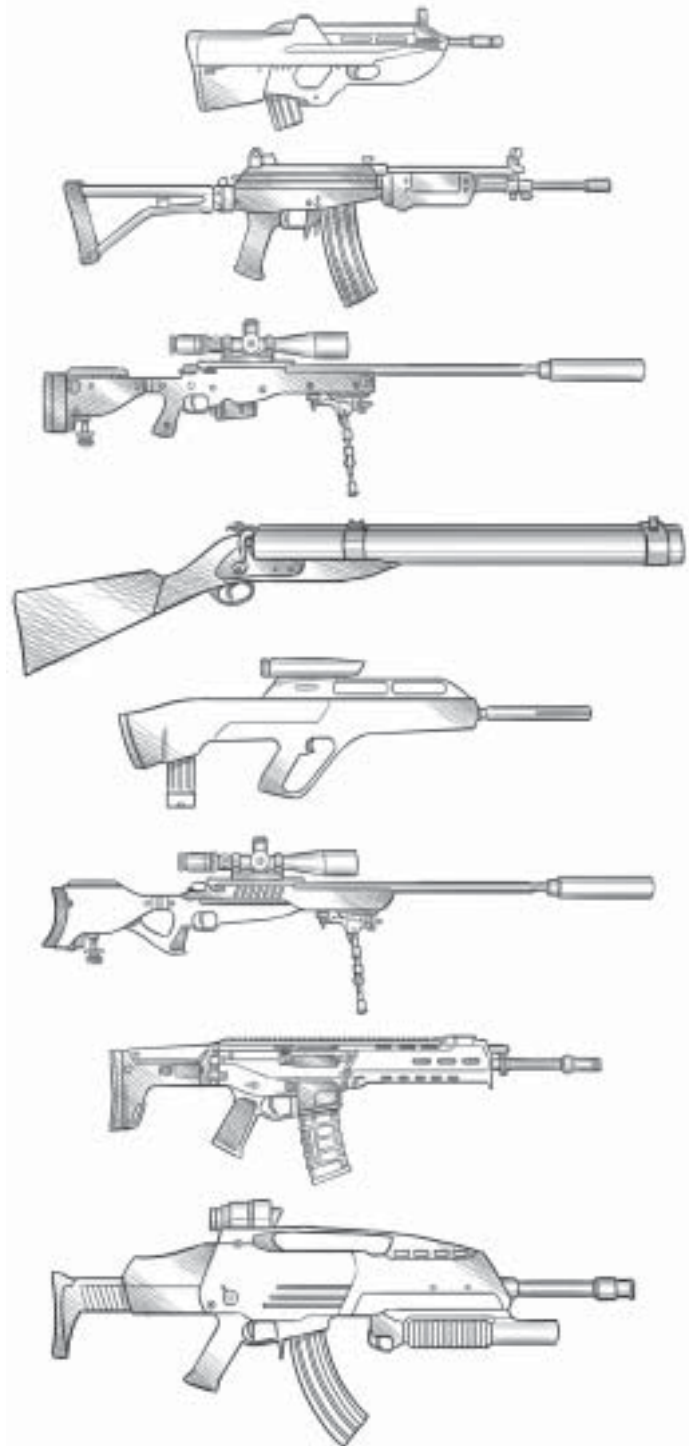
Rifle, Self-Loading (TL 5): A standard mid-tech infantry weapon, the self-loading rifle (SLR) is a semi-automatic weapon fed with full-bore (7mm) rifle ammunition from a 20-round detachable magazine. Standard equipment includes provisions for attaching a bayonet and telescopic sights and a shoulder sling. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 1 point of armour.

Rifle, Varmint, Bolt (TL 5): A smaller-calibre (5mm) version of the military bolt-action rifle, a 'varmint' rifle may be used for hunting small game or to drive off threats. It has some use in combat. 6 rounds are held in an internal magazine. These are reloaded manually (3 rounds can be inserted in one minor action). Loading clips are uncommon. Light rifles usually have a shoulder sling but no bayonet mounting. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 1 point of armour.

Rifle, Automatic (TL 6): A 7mm combat rifle fed from a 20-round detachable box magazine and also known as an autorifle, this weapon is capable of full automatic as well as semi-automatic fire. Its heavy round produces a lot of recoil, making autofire very inaccurate. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 2 points of armour.

Rifle, Survival (TL 7): The rather puny "survival rifle" is a simple double-barrelled, collapsible weapon included in survival kits. It can fire a weak 5mm rifle cartridge (not compatible with other rifle ammunition) from one barrel and an equally unimpressive shotgun round from the other. Both cartridges are roughly the same in terms of performance. The survival rifle is really only any useful when hunting small game. It has no intrinsic armour-piercing capability.

Carbine, Bullpup (TL 7): A short, semi-automatic longarm firing a small-calibre (5mm Light Rifle) round. A magazine containing 20 rounds is inserted into the underside of weapon behind the pistol grip, allowing a reasonable barrel length despite a short overall weapon. This configuration is known as 'Bullpup' and for this reason most carbines of this type are referred to as 'Bullpups'. Bullpups usually have a sling; some also have attachments for advanced sights and possibly a bayonet lug. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 1 point of armour.



Rifle, Assault (TL 7): The assault rifle is a lighter version of the autorifle using a lighter 5mm round to improve controllability under autofire. Assault rifles are lighter and more efficient than autocarabines. The weapon is fed by a 30-round magazine and can use semi-automatic, burst-fire or full-automatic fire modes. This weapon has an intrinsic Semi-Armour-Piercing (SAP) effect, ignoring up to 1 point of armour.

Rifle, Sniper (TL 8): A high-tech, high-calibre rifle designed for maximum accuracy and penetration. With its integrated silencer and magnification scope, long-distance targets can be killed quietly and efficiently.

Rifle, Poni Gun, Double-Barrel (TL 8): A heavy double-barrelled rifle firing adapted 20mm Light Assault Gun ammunition that 'can bring down a charging Poni head-on' (A Poni is an eight-legged creature considerably larger than a horse). The Poni Gun is breech-loaded and can fire one barrel at a time. It is not possible (nor desirable) to discharge both at once. Used by the 'lunatic fringe' of hunters, the Poni Gun has awesome recoil but is the only personal weapon that can stop some large creatures. Ball ammunition is normally used but specialist rounds are available. Ball ammunition has no intrinsic armour-piercing capability.

Rifle, Flechette (TL 9): A rifle version of the flechette pistol with a more powerful compressed-air propellant reservoir and a longer barrel. The flechettes are too light to have an intrinsic armour-piercing effect.

Rifle, Accelerated Sniper (TL 10): Using gas venting and magnetic alignment aids, this long-barrelled sniper rifle fires high-calibre caseless ammunition at extremely high velocities. Complete with an integrated sound suppression system and a magnification scope.

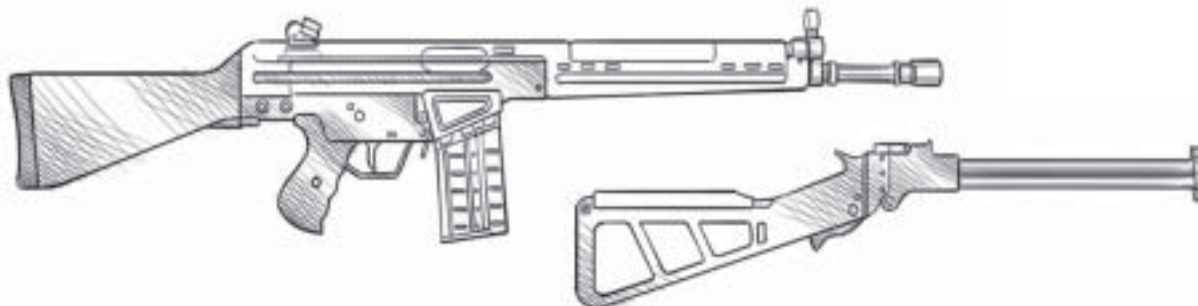
Advanced Combat Carbine (TL 10): Also known by the acronym ACC, this weapon is favoured by Naval security units. The ACC is a stripped-down version of the light ACR (see below). It has a short barrel with an 'assault' foregrip, being intended for use at very close range in boarding actions. It does not have a grenade launcher or long-range sights, nor a bayonet lug. The ACC may use semi-automatic, burst fire or full-automatic modes and is fed from a 50-round magazine of 6mm rounds. Normal ACC ammunition has a SAP effect, ignoring up to 1 point of armour. Discarding-Sabot ammunition is available and for operations in a base or environment controlled area low-penetration ball round can be used, which is

treated as an ST round. Discarding Sabot converts the weapon to full AP; low-penetration rounds remove the intrinsic SAP effect and in addition cause all armour the target may have to be doubled in effect. Light ACR and ACC ammunition are compatible with one another but do not fit other weapon types.

Advanced Combat Rifle (ACR), Heavy (TL 10): A progressive development of the assault rifle, the heavy ACR. uses advanced propellants and a large-calibre (9mm) round to deal out major damage. The heavy ACR. is somewhat bulkier than the light version (below) but only very slightly longer. It comes with an integral single-shot RAM (Rocket-Propelled Multipurpose) grenade launcher. Either the rifle or the launcher may be fired each round. The rifle may use semi-automatic, burst fire or full-automatic mode and is fed from a 50-round magazine. Reloading a grenade or changing a magazine takes a minor action. Heavy ACR. ammunition is not compatible with other weapons except support versions of the same family. Normal 9mm ACR. ammunition has a SAP effect, ignoring up to 2 points of armour. DSAP (Discarding Sabot) rounds have a full-AP effect and ignore the first four points of armour they encounter.

Advanced Combat Rifle (ACR), Light (TL 10): The 6mm light ACR. is an advanced rifle designed with the needs of mechanized or 'lift' infantry, who must constantly move in and out of vehicles, in mind. This makes for a short, handy weapon ideal for urban combat. The light ACR. comes with an integral single-shot RAM grenade launcher. Either the rifle or the launcher may be fired each round. The rifle may use semi-automatic, burst fire or full-automatic modes and is fed from a 100-round magazine. Reloading a grenade or changing a magazine takes a whole minor action. Damage: 4D (HE) or 3D (DS) (Autofire). ACR. and ACC rounds are identical with but not compatible with other weapon types.

Advanced Combat Rifle (ACR), Light, Rapid-Fire (TL 10): The RF ACR was an experimental weapon which did not achieve massive market success but is preferred by some mercenary units for its firepower. It is virtually identical to the light ACR (above) but has an additional mode – Rapid-Fire. This increases the cyclic rate of the weapon such that it will empty itself on a single pull of the trigger. An RF ACR may deliver a Rapid-Fire attack if it has 50 or more rounds remaining. This uses all available ammunition up and is used mainly for suppression or room clearance in urban warfare. Ammunition is standard Light ACR rounds. Ball has an intrinsic SAP capability, ignoring 1 point of armour. DSAP is full-AP and ignores 3 points of armour.



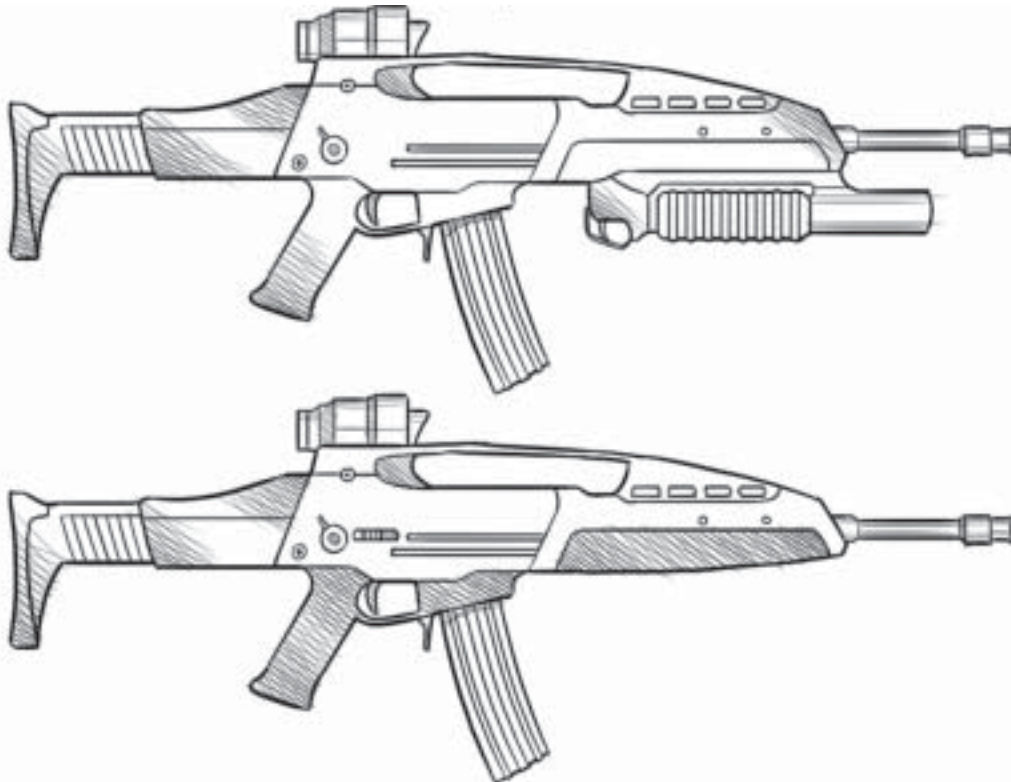
PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Autocarbine	5	Rifle	Gun Combat (Slug Carbine)	3d6 SAP	20	No	1	200	4	10
Carbine-Revolver	5	Assault Weapon	Gun Combat (Slug Carbine)	3d6-2	6	No	0	125	2.5	5
Carbine	5	Rifle	Gun Combat (Slug Carbine)	3d6-2 SAP	10	No	0	175	2.75	12
Big Game Rifle	5	Rifle	Gun Combat (Slug Rifle)	3d6+3	5	No	3	1,200	9	45
Fullbore Rifle, Bolt	5	Rifle	Gun Combat (Slug Rifle)	3d6+3 SAP	5	No	2	250	6	15
Heavy Rifle, Bolt	5	Rifle	Gun Combat (Slug Rifle)	4d6+4 SAP	4	No	3	350	8	20
Varmint Rifle, Bolt	5	Rifle	Gun Combat (Slug Rifle)	3d6 SAP	6	No	1	200	3.5	10
Autorifle	6	Rifle	Gun Combat (Slug Rifle)	3d6+3 SAP	20	4	1	250	5	10
Self-Loading Rifle	5	Rifle	Gun Combat (Slug Rifle)	3d6 SAP	20	No	1	200	5	10
Assault Rifle	7	Rifle	Gun Combat (Slug Rifle)	3d6 SAP	30	4	1	500	4	15
Bullpup Carbine	7	Rifle	Gun Combat (Slug Carbine)	3d6-2 SAP	20	No	0	300	2.5	20
Survival Rifle	7	Rifle	Gun Combat (Slug Rifle)	2d6-1	2	No	0	50	2	2
Poni Gun	8	Rifle	Gun Combat (Slug Rifle)	5d6	2	No	3	1,500	9	15
Rifle, Sniper	8	Rifle	Gun Combat (Slug Rifle)	3d6+3 SAP	4	No	2	700	5	10

PERSONAL AND LIGHT SUPPORT WEAPONS

Flechette Rifle 9 Rifle Gun Combat (Slug Rifle) 3d6 60 6 2 800 4.5 10

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Accelerated Sniper Rifle	10	Rifle	Gun Combat (Slug Rifle)	5d6 SAP	4	No	2	1,200	6	15
Advanced Combat Carbine	10	Rifle	Gun Combat (Slug Carbine)	3d6 SAP (Ball) 3d6 AP (DSAP) 3d6 ST (Low-Pen)	50	6	1	900	3	15
Heavy Advanced Combat Rifle	10	Rifle	Gun Combat (Slug Rifle)	4d6 SAP 4d6 AP (DSAP)	40	4	2	1,300	4	20
Light Advanced Combat Rifle	10	Rifle	Gun Combat (Slug Rifle)	3d6 SAP (Ball) 3d6 AP (DSAP)	100	6	1	1,000	3.5	30
Rapid-Fire Light ACR	10	Rifle	Gun Combat (Slug Rifle)	3d6 SAP (Ball) 3d6 AP (DSAP)	100	6 or 10	2	1800	3.25	55



LOW-G WEAPONS

Specialist weapons for use in low- and zero-gravity conditions are grouped together as 'low-g weapons'. There are two broad types: snub weapons and accelerator weapons. Lasers are also excellent for use in these conditions but are considered to be a different category since they use a very different means to cause damage.

Snub Weapons

Snub weapons are designed for shipboard use in low-gravity and zero-g conditions. They have a large calibre and short barrel, firing low-velocity rounds to minimize recoil. All snub weapons use the same ammunition, which is normally ball (standard bullets) but can include tranquilliser, gas, flechette and high-explosive armour piercing (HEAP). The standard shipboard security weapon is the snub revolver, though autopistol and SMG variants are available. Snub weapon HEAP ammunition gives full-AP capability, the weapon ignores one point of armour per die it rolls for damage.

Accelerator Weapons

Accelerator weapons reduce recoil by using a two-stage propellant. A minimal charge sends the projectile up the barrel, at which point its own internal rocket motor ignites and accelerates it to the target. Accelerator rifles are reasonably effective and the larger version, the Assault Rocket Launcher, has found some favour. Accelerator pistols have never been popular, however.

Snub Derringer (TL 8): A double-barrelled derringer type weapon designed to use 10mm snub pistol ammunition. Snub weapons can use a range of ammunition types. Costs given are for low-velocity ball rounds. HEAP and other specialist ammunition is subject to the multipliers listed under Ammunition. If both barrels are fired at once into the same target, an additional one die (1d6) of damage is added without increasing the armour-piercing effect.

Snub Pistol (TL 8): A low-velocity autopistol designed for shipboard and zero-g environments, the snub pistol is fed by a 15-round magazine. Snub weapons can use a range of ammunition types. Ball rounds are often carried for general use, though their performance is unimpressive. For serious combat, most users carry HEAP or explosive rounds.

Snub Revolver (TL 8): A low velocity revolver designed for use shipboard and in zero-g environments. The cylinder holds six rounds; ammunition includes all 10mm Snub Pistol rounds, which are not compatible with standard 10mm handguns.

Snub Submachine gun (TL 8): The snub SMG is a submachine gun version of the snub pistol intended for shipboard combat. It is fed by a 30-round magazine using 10mm snub weapon ammunition. The weapon is capable of semi or full-auto fire.

Snub Carbine (TL 8): The snub carbine is a longarm using standard snub pistol rounds from a 50-round magazine. It fires 3-round bursts, which are treated as a single-shot attack but with a +1 DM



to hit at ranges out to medium. A folding stock is used to keep the weapon short and handy and some versions carry a bayonet lug.

Snub Submachine gun, Assault (TL 9): The assault version of the snub SMG has a slightly longer barrel and an assault foregrip. It is fed by a 100-round cassette loaded along the top of the barrel. Cassettes are blocky and awkward to carry, massing 1 kg. This weapon can fire all snub ammunition using semi or full auto. If at least half a cassette of ammunition is available, the whole lot can be dumped into a target using rapid-fire (RF) mode. Recoil is 1 in this case. RF fire always completely empties the weapon.

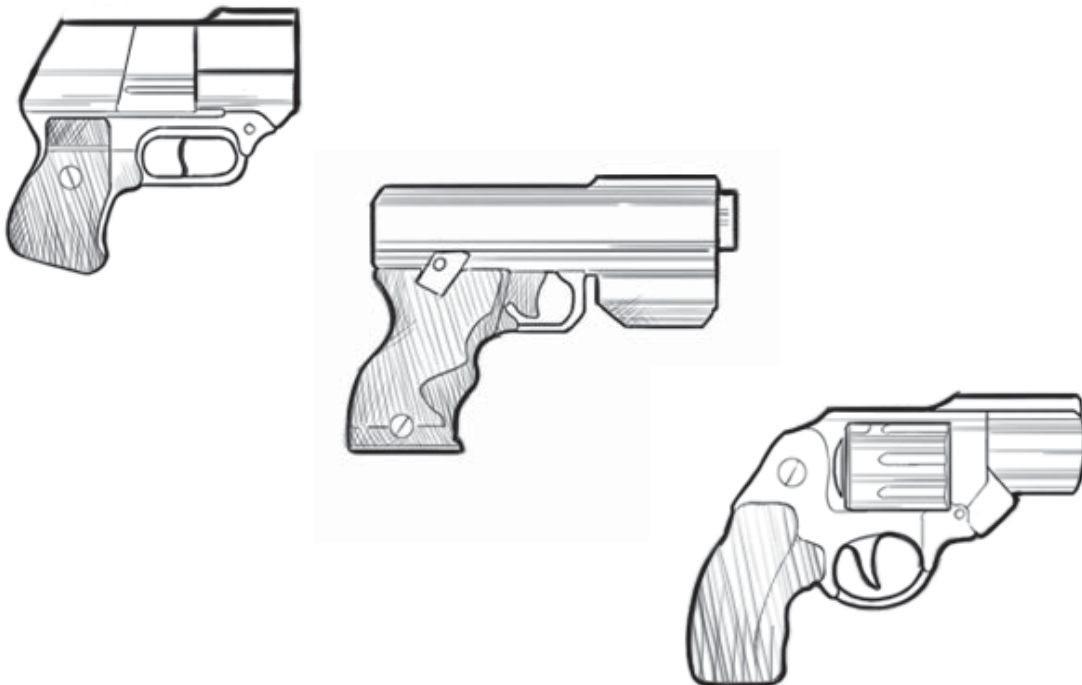
Accelerator Carbine (TL 9): Also called an Accelerator Submachine gun or Low-Gravity Assault Weapon (LGAW), this weapon is designed specifically for zero-g combat. The 'carbine' designation comes from the fact it is a bullpup-configuration design which looks more like a rifle than an SMG. The accelerator fires a low-velocity round which upon leaving the barrel is accelerated by a secondary propelling charge.

Accelerator Pistol (TL 9): Designed specifically for zero-g combat, the accelerator pistol fires a low-velocity round which upon leaving the barrel is accelerated by a secondary propelling charge. The short barrel makes this weapon inaccurate; it suffers a -1 DM to hit at all ranges.

Accelerator Rifle (TL 9): Designed specifically for zero-g combat, the accelerator rifle fires a low-velocity round which upon leaving the barrel is accelerated by a secondary propelling charge. The rifle fires bursts of three rounds per pull of the trigger. These are treated as a single attack with a +1 DM to hit at ranges out to Medium.

Assault Rocket Launcher (TL 9): The ARL fires small rockets similar to those used in the Accelerator Rifle, only larger. It is capable of full-automatic or semi-automatic fire and can use standard antipersonnel ammunition, explosive or HEAP rounds. Despite the 'support weapon' connotations of its name, this weapon is more like an overgrown large calibre submachine gun. Ammunition for this weapon is not compatible with other accelerator weapons.

Accelerator Weapon, Support (TL 9): The ASW is a scaled-up accelerator rifle firing small rockets which can be set for airburst using a time-of-flight fusing device (this takes one minor action to reset to a new range) or which will detonate on contact with a hard surface. The weapon fires bursts of three rockets which are counted as a single attack with a +1 DM to hit out to Medium range. Antipersonnel rockets scatter razor-sharp flechettes; a burst of three is considered to be an autofire attack with a rating of 6, though performance against armour is poor – armour is doubled against this attack. HEAP rockets do more damage and have a full-AP effect, ignoring the first four points of armour they encounter.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Snub Derringer	8	Pistol	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST (HE)	2	No	1	125	0.1	1
Snub Pistol	8	Shotgun	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST (HE)	15	No	0	200	0.7	20
Snub Revolver	8	Shotgun	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST (HE)	6	No	-1	150	0.5	10
Snub SMG	8	Shotgun	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST (HE)	30	2	-2	350	2	30
Snub Carbine	8	Shotgun	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST (HE)	50	No	-2	800	3	40
Assault Snub SMG	9	Shotgun	Gun Combat (Zero-G Weapons)	2d6-2 (Ball) 3d6-2 AP (HEAP) 2d6+2 ST(HE)	100	2 or 8 (RF)	-1	900	2.5	70
Accelerator Carbine	9	Shotgun	Gun Combat (Zero-G Weapons)	3d6-2	12	No	-	750	1.5	
Accelerator Pistol	9	Pistol	Gun Combat (Zero-G Weapons)	2d6-2	10	No	-	700	1	5
Accelerator Rifle	9	Shotgun	Gun Combat (Zero-G Weapons)	3d6	15	No	-	900	2	10
Assault Rocket Launcher	9	Shotgun	Gun Combat (Zero-G Weapons)	3d6+2 (Antipersonnel) 3d6+8 ST (HE) 4d6+2 (HEAP)	30	4	-2	2,000	4	5
Support Accelerator Weapon	9	Assault Weapon	Gun Combat (Zero-G Weapons)	3d3 (Antipersonnel) 4d6 AP (HEAP)	30	6	-2	3,500	6	

GAUSS WEAPONS

Gauss Weapons use electromagnetic effects to accelerate projectiles to very high velocity. Although of smaller calibre than other projectiles, gauss needles penetrate armour better and deliver worse injuries on the whole. All gauss weapons in this section are treated as full-AP weapons, ignoring a number of points of armour equal to the number of dice they roll for damage. DSAP (Discarding Sabot Armour-Piercing) ammunition can be used in all gauss weapons larger than pistols. It converts a gauss weapon to super-AP, ignoring twice as many points of armour as they roll dice for damage.

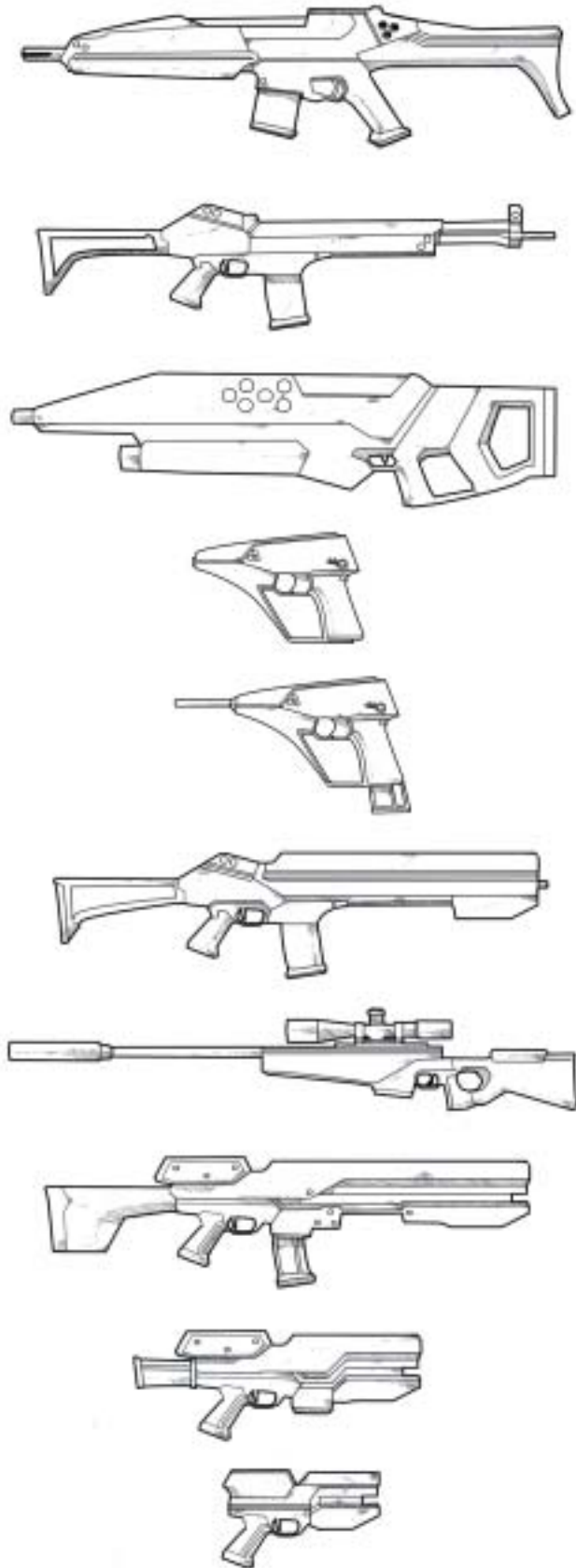
Carbine, Gauss, 5mm (TL 12): An early gauss weapon, implemented before the technology is fully mature, the gauss carbine lacks the range of the rifle and the ease of use of the pistol but remains a reasonably useful weapon. DSAP ammunition is not available for this carbine, which uses different ammunition to more advanced gauss weapons as well as more clumsy electronic systems.

Rifle, Gauss 4mm (TL 12): Arguably the ultimate development of the slug thrower, the gauss rifle generates an electromagnetic field along the length of its barrel which accelerates a bullet to very high velocities. The round itself consists of a dense armour piercing core surrounded by a softer metal covering, ending in a hollow point. This gives the round excellent stopping power and good armour penetration. A single-shot RAM grenade launcher is fitted as standard, it takes two full combat rounds to load a new grenade. Gauss rifles may use semi-automatic, burst-fire or full-automatic modes; either the rifle or the grenade launcher may be fired in a given round. Gauss rifle needles are not compatible with handgun ammunition.

Assault Weapon, Gauss, 2mm (TL 13): A heavy but short gauss weapon using lighter needles than the standard 4mm rifle and pistol, the gauss assault weapon is designed for the close-assault role. Each pull of the trigger fires a 3-round burst, with each round being a bundle of 24 2mm steel needles. The effect is that of a full-AP capable assault shotgun. Bursts ignore dodge dice just as shotguns do but without the penalties due to armour (indeed, the full-AP effect means that 3 points of armour are ignored). A burst is also considered to be an autofire attack. The feed device is a bulky 2 kg, 60-round block that fits over the top of the barrel and contains the power source as well as ammunition.

Pistol, Gauss, 4mm, Army Model (TL13) An advanced weapon using electromagnetic acceleration to propel metal darts, the gauss pistol is a common sidearm in high-tech military forces. The detachable 40-round magazine contains a battery to power the weapon; changing a magazine takes one minor action. Gauss pistols can use full-automatic, semi-automatic or burst fire modes.

Pistol, Gauss, 4mm, Navy Model (TL 13): Identical in function to the more common 'Army Model' gauss pistol, the 'Navy' version has longer barrel and uses a 50-round magazine which does not fit in the Army version. Gauss pistols can use full-automatic, semi-automatic or burst fire modes.



PERSONAL AND LIGHT SUPPORT WEAPONS

Rifle, Heavy, Gauss, 5.5mm (TL 13): A heavy version of the standard gauss rifle firing larger-calibre ammunition at a similar velocity, this weapon eats up power cells but hits hard at long ranges. Only semi-automatic mode is available as it is intended for sniping. Heavy gauss rifles are made to extremely fine tolerances and are very accurate, giving an extra +1 DM on all aimed shots at any range. Ammunition feed is from a 20-round magazine which includes a power supply. Using DSAP rounds this weapon can penetrate combat armour or even battle dress with relative ease.

Rifle, Sniper, Gauss, 8mm (TL 13): Most gauss weaponry is designed to fire rapidly but this sniper rifle instead focuses solely on penetration and accuracy. Magnetically loading larger calibre gauss ammunition out of a low-capacity magazine, the sniper rifle is amazingly accurate and almost completely silent when firing. This weapon is sound suppressed and grants the firer an additional +1 DM to hit whenever taking an Aim action.

Rifle, MagRail (TL 14): MagRail weapons use the same principles of electromagnetic induction to accelerate their projectiles as gauss weapons but rely on an ovoid projectile (sometimes erroneously called a 'disc') which hits hard at short ranges but lacks the penetrative power of a gauss needle. The MagRail rifle fires a volley of these ovoids all at once from its huge 15-cm bore, giving a +2 DM to hit at ranges out to Shotgun. All shots count as autofire.

Carbine, MagRail (TL 14): A smaller and lighter version of the magrail rifle, the carbine version shoots three volleys of projectiles in rapid succession, giving the same fire output as the rifle but with lighter projectiles and less of a 'shotgun' effect. All shots count as autofire and receive a +1 DM to hit out to ranges of Short or less.

Pistol, MagRail. (TL 14): The pistol version of the magrail concept is bulky but fairly light. It uses the same projectiles as the carbine but cannot use autofire.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Gauss Carbine	12	Rifle	Gun Combat (Slug Carbine)	3d6 AP	60	4	0	1,200	3	30
Gauss Rifle	12	Rifle	Gun Combat (Slug Rifle)	4d6 AP	100	4	0	1,500	4	40
Gauss Assault Weapon	13	Rifle	Gun Combat (Slug Carbine)	3d6 AP	30	4	0	800	5	15
Gauss Pistol, Army Model	13	Rifle	Gun Combat (Slug Pistol)	3d6 AP	40	4	-1	500	0.5	20
Gauss Pistol, Navy Model	13	Rifle	Gun Combat (Slug Pistol)	3d6+2 AP	50	4	0	700	0.7	20
Heavy Gauss (Sniper) Rifle	13	Rifle	Gun Combat (Slug Rifle)	5d6 AP	20	No	0	16,000	9	40
MagRail Rifle	13	Rifle	Gun Combat (Slug Rifle)	4d6+2	30	4	1	2,200	3	50
MagRail Carbine	14	Rifle	Gun Combat (Slug Pistol)	3d6+2	20	4	0	2,000	3	40
MagRail Pistol	14	Pistol	Gun Combat (Slug Pistol)	3d6+2	10	No	0	600	1	25

LASER WEAPONS

Laser weapons damage their target by dumping vast quantities of energy into a concentrated spot, causing massive heating that can lead to explosions, especially where fluids are turned to steam. Lasers less effective in an atmosphere and can be defeated by smoke, rain and so on but have the advantage of being silent and recoilless.

Some lasers use direct-injection power, usually from a backpack- or belt-mounted power supply. These weapons have the advantage that they can be plugged into a power feed aboard a starship or vehicle, effectively gaining unlimited ammunition. Other laser weapons employ one-use chemical energy cartridges, which liberate large quantities of electrical energy (enough to fuel one shot from a laser weapon) before burning out. These weapons can be somewhat lighter than a direct-injection unit but are more limited in firepower. Chemical cartridges make autofire laser small arms possible; thus far DI lasers capable of autofire have not proven feasible.

Carbine, Laser (TL 9): A lightweight laser weapon firing high energy bolts using current from a backpack battery/power pack. The laser carbine fires a 2mm beam of energy, aimed by integrated optic sights. The power pack costs Cr. 1,000 and weighs an additional 3 kg. It is capable of producing 50 shots before it requires recharging, which requires at least eight hours connected to a high-energy source such as a starship power plant. The laser carbine is connected to the power pack by a heavy-duty cable which is reasonably resistant to damage.

Pistol, Laser (TL 9): The TL 9 laser pistol is quite bulky, although it is smaller and handier than a carbine. It is primarily useful for zero-G troops who may desire a recoilless weapon that can be used in one hand. The short collimating tube of a pistol limits this weapon's effective range considerably. A conventional laser pistol of this sort needs an external power supply. A belt pack is normally used. It is good for 50 shots before needing to be recharged. Spare packs mass 2 kg and cost Cr. 1,000.

Gauntlet, Laser (TL 10): Effectively a laser pistol mounted to the back of a shielded gauntlet, the gauntlet laser is powered by a backpack energy source (Cr. 1,100, 2 kg) fed to it by a cable that is usually tethered around the arm. Although not much different than a normal laser pistol, the gauntlet allows for the wearer to have an open hand while still armed with a potent weapon.

Carbine, Laser, Advanced (TL 13): A slightly lighter version of the TL 9 laser carbine incorporating more advanced technology to increase firepower. The powerpack is lighter, at 1 kg but more expensive than the TL 9 version.

Pistol, Laser, Advanced (TL 11): At higher Tech Levels it becomes possible to focus a laser beam in a much shorter distance, allowing a far more effective laser pistol to be created. The weapon is still dependent on a bulky belt power pack, which costs Cr. 350 and weighs 2 kg and is good for 100 shots.

Rifle, Laser, Advanced (TL 11): Higher technology allows a lighter and slightly more powerful laser. The power pack (Cr. 3,500, 2 kg) is lighter than that of the standard laser rifle.

Rifle, Laser, Stagger (TL 12): An alternative laser weapon using an industrial beam splitter to create an autofire effect from a powerful laser rifle pulse. The weapon is powered by a heavy-duty power pack that masses 5 kg (included in the mass of the weapon) and costs Cr. 1,500.

Support Weapon, Laser (TL 11): A powerful version of the laser rifle, a support laser can only be used on a tripod or vehicle mount, or on a special Battle Dress mount. The detachable powerpack masses 6 kg, costs Cr. 2,500 and contains enough energy for 20 shots; changing packs takes one combat round. Battle Dress-mounted support lasers are fed from the suit's power supply.

Point-Defence Weapon, Laser, Gatling (TL 12): Normally carried on a vehicle mount or a battle dress backpack, the gatling defence laser uses the same powerpack as the support laser, though it only gets 8 salvos from a pack. Its rapid pulses are of only moderate intensity compared with a support laser but can burn a missile out of the air or chew up infantry. Each 'shot' is in fact a salvo of rapid pulses counting as an autofire attack.

Carbine, Laser, Cartridge (TL 13): A more advanced laser weapon fed by one-use cartridges rather than an external powerpack, the cartridge laser carbine uses a 15-round magazine (loaded cost Cr. 70, 1.25 kg). Less bulky than the rifle version, the cartridge laser carbine is handier for close action or moving in and out of vehicles.

Rifle, Laser, Cartridge TL 13): An advanced laser weapon fed by one-use cartridges rather than an external powerpack, the cartridge laser rifle is fed by a 20-round magazine (loaded cost Cr. 150, 2 kg). It is quite a bulky weapon which uses heavy ammunition and is not as popular as the lower-tech standard ('direct electrical input') laser rifle. It is, however, capable of fully-automatic fire.

Personal Defence Laser (TL 13): A lightweight laser weapon fed by one-use cartridges rather than an external powerpack, the personal defence laser (PDL) uses a 25-round extended magazine (loaded cost Cr. 100, 1 kg) inserted in the handgrip. Ammunition is identical to that used by the cartridge laser pistol. The PDL is capable of fully-automatic fire or single shots and is carried as a sidearm by some personnel. Being somewhat more bulky than a pistol, the PDL has room for a heavy-duty cooling system and can use autofire.

Assault Weapon, Laser, Cartridge (TL 14): An advanced laser weapon fed by one-use chemical-energy cartridges rather than an external powerpack, the assault laser is an attempt to create a 'laser submachine gun' that has met with mixed success. It is fed by either a 15-round 'carry' magazine (loaded cost Cr. 75, 1.25 kg) identical to that used by the cartridge laser carbine, or a 35-round 'assault' magazine (loaded cost Cr. 150, 2.75 kg). A weighty weapon, the assault laser is difficult to handle but does have impressive firepower. It is capable of full-automatic fire or single shots.

Rifle, Convergence Beam (TL 14): The CBR is an advanced laser weapon that uses four beam emitters configured to strike a single point on a target. The four beams are calibrated to strike the same square centimetre of target, each beam a nanosecond after the last. This has the same effect as a laser 'jackhammer', burning a small hole deeper into the target with every pull of the trigger. The CBR ignores up to 8 points of Armour.

Rifle, Laser, Stagger, Improved (TL 14): An improvement on the earlier stagger laser, with a smaller and lighter power pack (4 kg, Cr. 3,000). The weapon itself is a little lighter and more importantly is more powerful and has a longer effective range.

Rifle, Laser, Heavy (TL 15): A powerful laser weapon designed to punch holes in armoured targets. It is fed from a detachable powerpack that fits into the stock. It is good for only 4 shots. Spare packs cost Cr. 1,200 and mass 1 kg. This weapon is primarily used by snipers who find its direct-fire capability (bullets drop under gravity; light pulses do not in any meaningful way) and immunity to wind conditions useful.

Pistol, Maser (TL 16): The powerful advanced version of the laser pistol, a 'maser' is a concentrated beam of microwave energy which boils a target from the inside. The invisible radiation emitted by the weapon is also harmful to cybernetic augments, causing them to heat up, spark and sometimes fuse with the tissues around them. Maser weapons ignore half of a target's physical armour but always inflict double normal damage against targets with physical cybernetic augments of TL 13 or lower. The power cell used by the maser pistol carries an indefinite charge as long as it remains undamaged and gets an hour of 'downtime' once the last charge has been fired.

Rifle, Maser (TL 16): A larger power cell and generation chamber makes the rifle version of the maser pistol a more powerful and longer ranged weapon. Other than the changes shown in the profile below, this weapon functions just as the maser pistol.

Rifle, Solar Beam (TL 17): Using an ambient collector for solar radiation to build up into short-ranged but powerful laser-like beam. This beam is vaporises most physical targets it strikes, ignoring 5 points of the target's Armour. The solar beam rifle has a very limited storage capacity but automatically recharges if exposed to six hours of sunlight.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Laser Carbine	9	Assault Weapon	Gun Combat (Laser Carbine)	4d6	50	No	2,500	4	1000
Laser Pistol	9	Pistol	Gun Combat (Laser Pistol)	3d6	100	No	2,000	3	750
Laser Rifle	9	Rifle	Gun Combat (Laser Rifle)	5d6	100	No	3,500	8	1,500
Gauntlet Laser	10	Pistol	Gun Combat (Laser Pistol)	3d6	125	No	2,250	4	1,100
Advanced Laser Pistol	11	Pistol	Gun Combat (Laser Pistol)	3d6+3	100	No	3,000	3	350
Advanced Laser Carbine	11	Assault Weapon	Gun Combat (Laser Carbine)	4d6+3	50	No	4,000	3	3,000
Advanced Laser Rifle	11	Rifle	Gun Combat (Laser Rifle)	5d6+3	100	No	8,000	5	3,500

TRAVTECH PRESENTS...

ENERGY RIFLE, LASER (TL 9)

THE STANDARD HIGH-ENERGY WEAPON, FIRING ENERGY BOLTS IN THE SAME MANNER AS THE LASER CARBINE. HEAVIER, THE LASER RIFLE IS ALSO CAPABLE OF LONGER SUSTAINED ACTION AND IS SOMEWHAT STURDIER. THE POWER PACK (CR. 1,500, 4 KG) CAN PROVIDE 100 SHOTS BEFORE RECHARGING. AS WITH THE LASER CARBINE, THE LASER RIFLE IS CONNECTED TO THE POWER PACK BY A HEAVY-DUTY CABLE. POWER PACKS ARE NOT INTERCHANGEABLE BETWEEN THE TWO WEAPONS.

PRICE: CR. 3,500

WEAPON TYPE: LASER WEAPON

SHIPPING DATE: 031 - 1106

REF: 978-1-906508-21-6 /// TTAG 5342



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TRAVTECH PRESENTS...

LASER PROJECTION SYSTEM, VARIABLE WAVELENGTH (TL 13)

USING A COMPUTERISED MODULATION SUITE ATTACHED TO THE FOCUSSED CHAMBER OF A BULKY LASER RIFLE SYSTEM, THIS WEAPON EMITS A MULTI-WAVELENGTH LASER THAT SCANS, ADJUSTS TO AND APPROPRIATELY BLASTS A TARGET ALL AT ONCE. BY AUTOMATICALLY CONFIGURING TO THE SUBSTANCE IT IS STRIKING IN NANoseconds AFTER THE LASER IS EMITTED, THE BEAM ADAPTS TO BETTER DISASSEMBLE THE TARGET ON A MOLECULAR LEVEL. THE VW-LPS IGNORES 1D6 POINTS OF ARMOUR A TARGET HAS, CUMULATIVE WITH CONSECUTIVE HITS ON THE SAME TARGET (1D6 ON THE FIRST HIT, 2D6 ON THE NEXT, 3D6 ON THE THIRD AND SO ON).

PRICE: CR. 15,000

WEAPON TYPE: LASER WEAPON

SHIPPING DATE: 350 - 1105

REF: 978-1-906508-19-8 /// TTAG 1987



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TRAVTECH PRESENTS...

ENERGY RIFLE,

CONVERGENCE BEAM (TL 14)

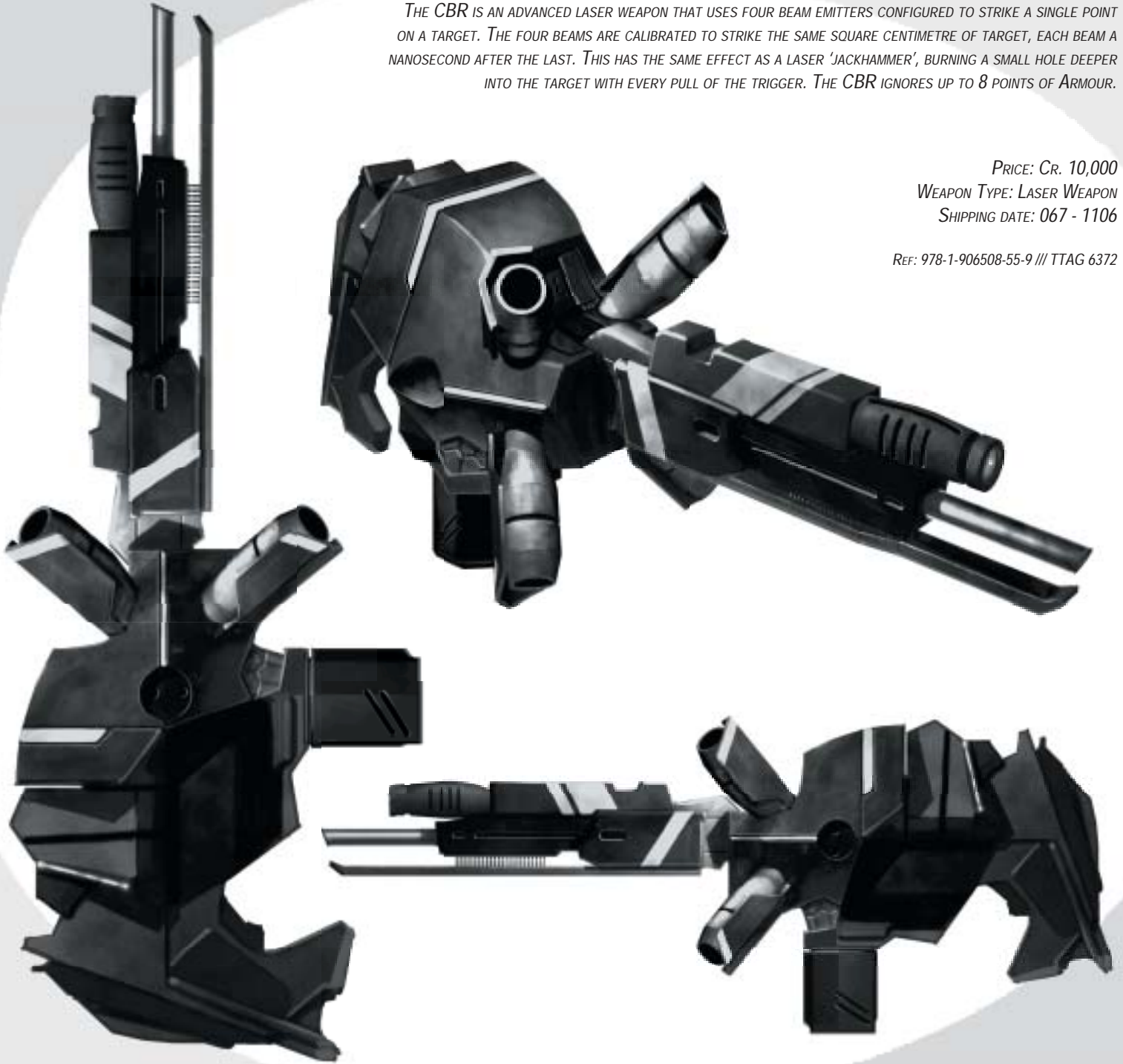
THE CBR IS AN ADVANCED LASER WEAPON THAT USES FOUR BEAM EMITTERS CONFIGURED TO STRIKE A SINGLE POINT ON A TARGET. THE FOUR BEAMS ARE CALIBRATED TO STRIKE THE SAME SQUARE CENTIMETRE OF TARGET, EACH BEAM A NANOSECOND AFTER THE LAST. THIS HAS THE SAME EFFECT AS A LASER 'JACKHAMMER', BURNING A SMALL HOLE DEEPER INTO THE TARGET WITH EVERY PULL OF THE TRIGGER. THE CBR IGNORES UP TO 8 POINTS OF ARMOUR.

PRICE: CR. 10,000

WEAPON TYPE: LASER WEAPON

SHIPPING DATE: 067 - 1106

REF: 978-1-906508-55-9 /// TTAG 6372



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PLEASE NOTE: ALL USED GUNS ARE SOLD AS IS, WITH PERMISSION FROM THEIR PREVIOUS OWNER/S.

TRAV TECH SPECIAL OFFER



LASER PISTOL, CARTRIDGE (TL 13)

AN ADVANCED LASER WEAPON FED BY ONE-USE CARTRIDGES RATHER THAN AN EXTERNAL POWERPACK, THE CARTRIDGE LASER PISTOL USES A 14-ROUND MAGAZINE (LOADED COST Cr. 55, 0.5 KG) INSERTED IN THE HANDGRIP.

NORMAL PRICE: Cr. 2,500

SPECIAL OFFER PRICE: Cr. 1,500

WEAPON TYPE: LASER WEAPON
SHIPPING DATE: AVAILABLE TODAY

REF: 978-1-906508-13-2 /// TTAG 1265



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PERSONAL AND LIGHT SUPPORT WEAPONS

Stagger Laser Rifle	12	Assault Weapon	Gun Combat (Laser Rifle)	4d6	75	4	7,500	9	1,500
Gatling Point-Defence Laser	12	Assault Weapon	Heavy Weapons (Energy Weapons)	4d6+2	8	6	14,000	26	2,500
Variable Wavelength Laser Projection System	13	Rifle	Gun Combat (Laser Rifle)	3d6+1	20	No	15,000	13	5,000
Laser Support Weapon	13	Rifle	Gun Combat (Laser Rifle)	6d6	20	4	12,000	14	2,500
Laser Carbine, Cartridge	13	Assault Weapon	Gun Combat (Laser Carbine)	4d6+3	15	No	7,500	3	70
Laser Pistol, Cartridge	13	Pistol	Gun Combat (Laser Pistol)	4d6	14	No	2,500	2.5	55
Laser Rifle, Cartridge	13	Rifle	Gun Combat (Laser Rifle)	5d6+3	20	4	9,000	9	150
Personal Defence Laser	13	Pistol	Gun Combat (Laser Carbine)	4d6+1	25	4	2,500	3	100
Assault Laser, Cartridge	14	Assault Weapon	Gun Combat (Laser Carbine)	4d6+6	15 or 35	6	9,000	7	75 or 150
Convergence Beam Rifle	14	Rifle	Gun Combat (Laser Rifle)	4d6+4	15	No	10,000	5	2,500
Improved Stagger Laser Rifle	14	Rifle	Gun Combat (Laser Rifle)	4d6+3	100	4	10,000	7	3,000
Heavy Laser Rifle	15	Rifle	Gun Combat (Laser Rifle)	6d6+8	4	No	13,000	11	1,200
Maser Pistol	16	Pistol	Gun Combat (Laser Pistol)	3d6+2	10	No	25,000	5	2,000
Maser Rifle	16	Assault Weapon	Gun Combat (Laser Rifle)	4d6+3	15	No	30,000	12	3,500
Solar Beam Rifle	17	Shotgun	Gun Combat (Laser Rifle)	6d6	5	No	20,000	7	–

FLAME AND CRYO WEAPONS

Flame weapons do not shoot 'flames' at a target; what they do is to shoot a stream of extremely hot (and almost always burning) material. In some cases the weapon can shoot fuel at the target and then ignite it. Most, however, ignite the fuel as it leaves the weapon, creating what looks like a stream of flames.

There are various ways to produce the 'flamer' effect. At lower Tech Levels it is usually a stream of liquid fuel but other means are possible including chemical particles and plasma. Also included in this section are 'cryo' (cryogenic) weapons which use very cold materials. These are rather specialist in their applications but are sometimes useful. They work in a similar manner to flame weapons in terms of spraying fluid but deliver damage differently.

Flame weapons are not very effective against hard, non-flammable targets such as armoured vehicles. Cryo weapons are almost useless under these circumstances. Against most personal armour, flame and cryo weapons are highly effective. Armour value is halved against these weapons in addition to the special effects listed below. These comments do not apply to armour designed to resist heat or cold attacks, or sealed suits. In practice this means heatsuits, ablat, combat armour, battle dress and vacc suits (if sealed with the helmet on) grant their full protection against flame and cryo weapons.

Flame and cryo weapons are persistent. A target who is hit with a weapon takes additional damage each round. This damage is halved each round (rounding down) until it finally runs out. A character who is flamed again whilst on fire takes only the largest damage of all current flame attacks – there is a limit to how much on fire a person can be. The rounding down starts again from the largest damage.

For example, 'Pyro'Pete hoses an enemy soldier down for 13 damage with a flamethrower. Next round, Pete switches to another target and the hapless victim takes 6 (13 halved to 6.5 and rounded down) damage. In the third round, Pete decides to flame his original target again but scores a measly 2 points of damage. His opponent is already on fire for 3 points (half of 6) so takes 3 points of damage that round. The new attack is lost amid the general inferno. Assuming there is anything left of the target, he takes 1 point of damage next round before the fire dies out. Unless of course Pete feels the need to apply more flame...

Flame and cryo weapons cannot use autofire but can hose down an area. The user can choose between a +4 DM to hit a single target or the ability to attack up to 3 man-sized targets within 3m of one another using the same hit roll (with no bonus). Damage is rolled separately for each target in this case.

Flamethrower (TL 4): A crude device consisting of fuel tanks, a compressor and a nozzle, the flamethrower is a devastating weapon which can be hazardous to its user and his comrades. Low-tech or improvised flamethrowers are prone to leaks and even explosions;

more advanced versions are a little safer but remain vulnerable to enemy fire. Flamethrowers are often used as area-clearance weapons. A tank of fuel contains enough for 30 short bursts or one good hosing. Changing tanks takes 20 combat rounds, though it is possible to shrug out of the harness in a single combat round at need.

Flamethrower, Improved (TL 6): Simply a more efficient version of the basic flamethrower, the TL 6 variant is lighter but carries a bit less fuel. It is less of a hazard to the user and his comrades and is somewhat easier to control when firing the high-pressure fuel jet.

Flamethrower, Advanced (TL 8): The ultimate development of the backpack-mounted hydrocarbon-spraying flame gun, the TL 8 version is lighter and more efficient than earlier models.

Flame Rifle (TL 9): An advanced version of the flamethrower, the flame rifle uses a smaller amount of more efficient fuel for a similar effect. It is self-contained, fed from a bulky tank under the weapon. Flame rifles are somewhat less prone to disaster than backpack-type flamethrowers but many users cite their self-contained nature as their best feature – the user is not strapped to the weapon and can throw it away at need! A fuel tank holds enough for 8 combat rounds of fire. Changing tanks takes 6 full actions.

Hand Flamer (TL 10): A smaller version of the flame rifle, the hand flamer's short nozzle makes it handy in room-clearance operations but also poses a greater hazard to the user. Capacity is small and range short, rendering these weapons rather less useful on the open battlefield. The fuel tank holds enough for three shots. Changing a magazine takes a single major action.

Flamer, Projection (TL 10): A weapon that belches gouts of atomised fuel in a swirling cone, projection flammers are considered good squad support weaponry due to their ample saturation rate combined with a faster burn-off period. Projection flammers have a very high damage output but do not continue to burn on a normal target like other flamethrowers. Highly flammable targets (soaked in fuel, extremely furry and so on) will still suffer a single round of additional burning damage.

Flamer, Heavy Projection (TL 10): Nothing more than a massive projection flamethrower normally fitted to an armoured vehicle and occasionally Battledress at higher Tech Levels, the heavy projection flamer uses a higher concentration of atomised fuel. Other than the changes on the profile below, this weapon works the same as the normal projection flamer.

Gauss Flamer (TL 13): An alternative to the standard hydrocarbon-based flame weapon, the gauss flamer (also known as a Gauss-Thermite Superflamer, or GTS) accelerates metallic flechettes to high speed and ignites them, creating a cone of incredible heat. Spread is somewhat erratic, however, with a -1 DM to hit a target. For this and other reasons, plasma weapons are generally preferred. An under-barrel fuel tank contains enough for eight shots; changing tanks takes 2 major actions.

TRAVTECH PRESENTS...

THE CRYO JET (TL 11)

A FLAMETHROWER-LIKE WEAPON FIRING A JET OF SUPER-COLD (CRYOGENIC) LIQUID WHICH FREEZES THE TARGET. THIS CAN DO MASSIVE DAMAGE TO LIVING TISSUE AND WILL POSSIBLY HARM ELECTRONIC SYSTEMS ABOARD A ROBOT, VEHICLE OR BATTLE DRESS. MORE IMPORTANTLY, EVEN SEALED ARMOUR MAY BE FROZEN IN PLACE FOR A TIME DUE TO FROZEN PARTICLES IN THE JOINTS. FOR COMBAT ARMOUR, VACC SUITS AND BATTLE DRESS, AN AVERAGE STRENGTH CHECK IS NEEDED TO CONTINUE MOVING AFTER BEING SPRAYED. IF THE ROLL IS FAILED, THE USER IS UNABLE TO MOVE (OTHER THAN TO TOPPLE OVER) FOR 1D6 ROUNDS. NOTE THAT TARGETS IN NON-SEALED ARMOUR ARE NOT FROZEN IN PLACE BUT SIMPLY SUFFER DAMAGE (ARMOUR PROTECTS AT HALF VALUE) AND THEN THE USUAL HALVING OF DAMAGE EACH ROUND.

PRICE: CR. 4,000
WEAPON TYPE: CRYO WEAPON
SHIPPING DATE: 122 - 1106

REF: 978-1-906508-98-0 /// TTAG 4109



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TRAVTECH PRESENTS...

THE INFERNO REVOLVER

(TL 11)

A MODIFIED SLUG PISTOL DESIGNED TO FIRE SPECIAL CARTRIDGES, THE INFERNO REVOLVER HAS A FLANGED AND PORTED BARREL THAT ERUPTS IN A SHORT CONE OF STICKY FLAME. THE CARTRIDGES CREATE A FLAME THROWER EFFECT, COATING A TARGET WITH IGNITED FUEL. RELOADING THE SPECIAL CARTRIDGES INTO THE INFERNO REVOLVER REQUIRES A SIGNIFICANT ACTION PER CARTRIDGE DUE TO THEIR FRAGILE CASINGS AND PRESSURISED CONTENTS. AN INFERNO CARTRIDGE WHICH BREAKS (ACCIDENTALLY OR PURPOSEFULLY) INFLECTS 1D6+3 FLAME DAMAGE UPON ANYTHING WITHIN 1.5 METRES.

PRICE: CR. 850

WEAPON TYPE: FLAME WEAPON
SHIPPING DATE: AVAILABLE TODAY

REF: 978-1-906508-44-8 /// TTAG 4486



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TRAVTECH PRESENTS...

THE PLASMA JET, (TL 12)

A RELATIVELY CRUDE PLASMA-JET WEAPON USING A BACKPACK FUEL AND POWER SUPPLY TO GENERATE A CONE OF SUPERHEATED GAS. THE JET IS DELIBERATELY NOT CONTAINED TO CREATE AN AREA EFFECT WEAPON.

PRICE: CR. 12,000

WEAPON TYPE: PLASMA WEAPON

SHIPPING DATE: 123 - 1106

REF: 978-1-906508-65-2 /// TTAG 6453



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PERSONAL AND LIGHT SUPPORT WEAPONS

Cryo Rifle (TL 14): A more advanced version of the cryo jet, the cryo rifle is lighter and handier but also more effective. Strength checks to avoid continue moving in sealed armour are Difficult (-2). Failure results in 1d6+3 rounds of freezing, with 1d6 damage each round.

Plasma Jet, Improved (TL 14): A greatly improved version of the basic plasma jet weapon, which still uses a barely-directed plasma stream for maximum effect.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Flamethrower	4	Shotgun	Heavy Weapons (Flamethrower)	4d6 Flame	30	No	3	800	25	60
Improved Flamethrower	6	Shotgun	Heavy Weapons (Flamethrower)	4d6 Flame	25	No	2	1,400	20	40
Improved Flamethrower	8	Shotgun	Heavy Weapons (Flamethrower)	3d6+6 Flame	25	No	1	2,500	20	40
Flame Rifle	9	Shotgun	Heavy Weapons (Flamethrower)	3d6+6	8	No	1	2,000	6	16
Hand Flamer	10	Pistol	Heavy Weapons (Flamethrower)	3d6+6	3	No	0	1,200	2	6
Projection Flamer	10	Shotgun	Heavy Weapons (Flamethrower)	5d6+3	8	No	1	1,000	15	50
Heavy Projection Flamer	10	Shotgun	Heavy Weapons (Flamethrower)	7d6+3	12	No	2	2,000	30	100
Cryo Jet	11	Shotgun	Heavy Weapons (Flamethrower)	4d6	16	No	1	4,000	14	200
Inferno Revolver	11	Pistol	Gun Combat (Slug Pistols)	3d6 Flame	4	No	1	850	8	75
Plasma Jet	12	Shotgun	Heavy weapons (Flamethrower)	6d6	12	No	0	12,000	12	120
Gauss Flamer	13	Assault Weapon	Heavy Weapons (Flamethrower)	5d6+6	8	No	0	7,000	6	40
Cryo Rifle	14	Assault Weapon	Heavy Weapons (Flamethrower)	5d6	10	No	1	6,000	6	150
Improved Plasma Jet	14	Assault Weapon	Heavy Weapons (Flamethrower)	8d6	30	No	0	15,000	8	300

HIGH-ENERGY WEAPONS

High-energy weapons (plasma and fusion weapons) hurl bolts of superheated gas, which in some cases proceeds to fusion. They are devastating in effect but in many cases require battle dress to operate due to the weight of the weapon and its power supply. Higher-tech weapons include gravitic compensation and can be used by an unarmoured soldier. High-energy weapons require careful maintenance, since a containment failure poses an extreme hazard to friendly personnel.

High-energy weapons are normally employed in a squad support role by power-armoured troops. It is unusual for a whole unit to be equipped in this way. Apart from anything else, high-energy weapons are somewhat imprecise and cause immense collateral damage, secondary fires and so on. Of course, there are times when that is desirable.

Plasma and (occasionally) fusion weapons are sometimes encountered in bunkers or on tripod mounts. They are more commonly used as the main armament of light combat vehicles.

The PGMP-12, -13 and 14 all require a Strength of 12 to use as an infantry weapon. Each point short of 12 incurs a -1 DM on the hit roll. A mounted version (in a bunker or vehicle) is not subject to this penalty.

The FGMP-15 and -16, incorporate gravitic compensation and require a minimum strength of 9 to use. A mounted version (in a bunker or vehicle) is not subject to this penalty. They emit a radiation pulse of 2d6x20 rads when firing, which will affect unshielded personnel in the immediate vicinity.

Plasma Gun, Man Portable-12 (PGMP-12) (TL 12): The PGMP-12 consists of a power pack carried on the firer's back, the weapon itself and a flexible power link. The powerpack powers a laser ignition system in the weapon itself, which heats hydrogen fuel to a plasma state. The plasma is contained in the ignition chamber briefly and then released through a magnetically focused field along the weapon's barrel. The initial plasma 'ball' is 2cm in diameter but begins to dissipate rapidly. The weapon fires a short stream of 'balls' or 'pulses' in each attack and can conduct autofire. Each pull of the trigger discharges one plasma bolt. Because of the recoil and intense heating of this weapon, it may only be fired once every two rounds.

Plasma Gun, Man-Portable-13 (PGMP-13) (TL 13): Designed for use with Battle Dress armour, the PGMP-13 is a powerful close support weapon capable of destroying light armoured vehicles. The strength enhancement units of the armour serve as a recoil carriage, allowing the weapon to be fired each round.

Fusion Gun, Man Portable-14 (FGMP-14) (TL 14): The fusion gun is similar in design and function to the PGMP, differing only in that it contains the plasma slightly longer until a fusion reaction begins to take place. The weapon is therefore somewhat more powerful than a plasma gun. Its recoil and cooling cycle is such that it may only be fired once every two rounds.

Fusion Gun, Man-Portable-15 (FGMP-15) (TL 15): The FGMP-15 incorporates a gravitic field generator similar to that used on the PGMP-14, allowing use every round even by firers wearing non-powered armour.

Fusion Gun, Man-Portable-16 (FGMP-16) (TL 16): The FGMP-16 is able to maintain a higher rate of fire than its predecessors, effectively acting as a 'fusion machine gun'. It is still a large and bulky weapon requiring considerable strength to use.

Rifle, Plasma (TL 16): An advanced plasma weapon intended for use as a sniping weapon for infantry rather than as a support weapon. The plasma rifle fires a single plasma ball/pulse and cannot be used in autofire mode but it cools fast enough to be useable each round without being unduly bulky. The internal power unit is bulky and holds enough power for several hundred shots and can be recharged in under an hour.

Pistol, Fusion (FP-17) (TL 17): A very bulky handgun-like weapon fed from a belt powerpack, the FP-17 fires a pulse/ball of fusing plasma, much like the heavy FGMP weapons above. Radioactive containment is reasonable; anyone within Personal range of the weapon will be exposed to 1d6x5 rads every time the weapon is fired. The shooter is however protected by a gravitic containment system that directs harmful radiation into the forward arc (towards the target). Like the plasma rifle, this weapon can hold several hundred rounds in its power pack (2.5 kg of the weapon's mass) and can be recharged from a suitable power source between combats.

Pistol, Fusion (FP-18) (TL 18): A somewhat less bulky version of the Fusion Pistol.

Pistol, Fusion (FP-19) (TL 19): Probably the most efficient hand-held fusion weapon available, the FP-19 uses a similar belt powerpack to its predecessors (2.5 kg of the weapon's mass is the powerpack) and is slightly smaller yet more powerful.

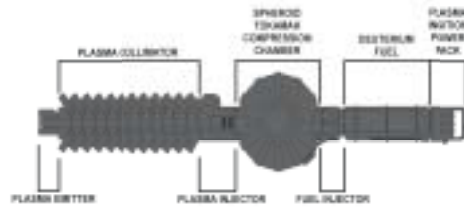
Rifle, Fusion (FR-18) (TL 18): A somewhat less bulky version of the Fusion Rifle; radiation containment, owing to an integral nuclear damper, is so effective that there is no residual radiation at all when this weapon is fired.

Rifle, Fusion (FR-19) (TL 19): Probably the most efficient fusion rifle available, the FR-19 uses a similar belt powerpack to its predecessors (4 kg of the weapon's mass is the powerpack) and is slightly smaller yet more powerful.

PLASMA WEAPON

INFANTRY SUPPORT (TL 9)

ALSO KNOWN AS PLASMA BAZOOKA, THIS WEAPON IS A RATHER CRUDE HIGH-ENERGY WEAPON CAPABLE OF DELIVERING A LOOSE CLOT OF PLASMA OUT TO A REASONABLE RANGE. IT IS EXTREMELY BULKY AND IS FED BY A WEIGHTY 16 KG CARTRIDGE, WHICH COSTS CR. 400. THE WEAPON HAS A LARGE BACKBLAST AREA (10 M) AND A HUGE SIGNATURE WHEN FIRING. IT TAKES TWO FULL ACTIONS TO RELOAD.

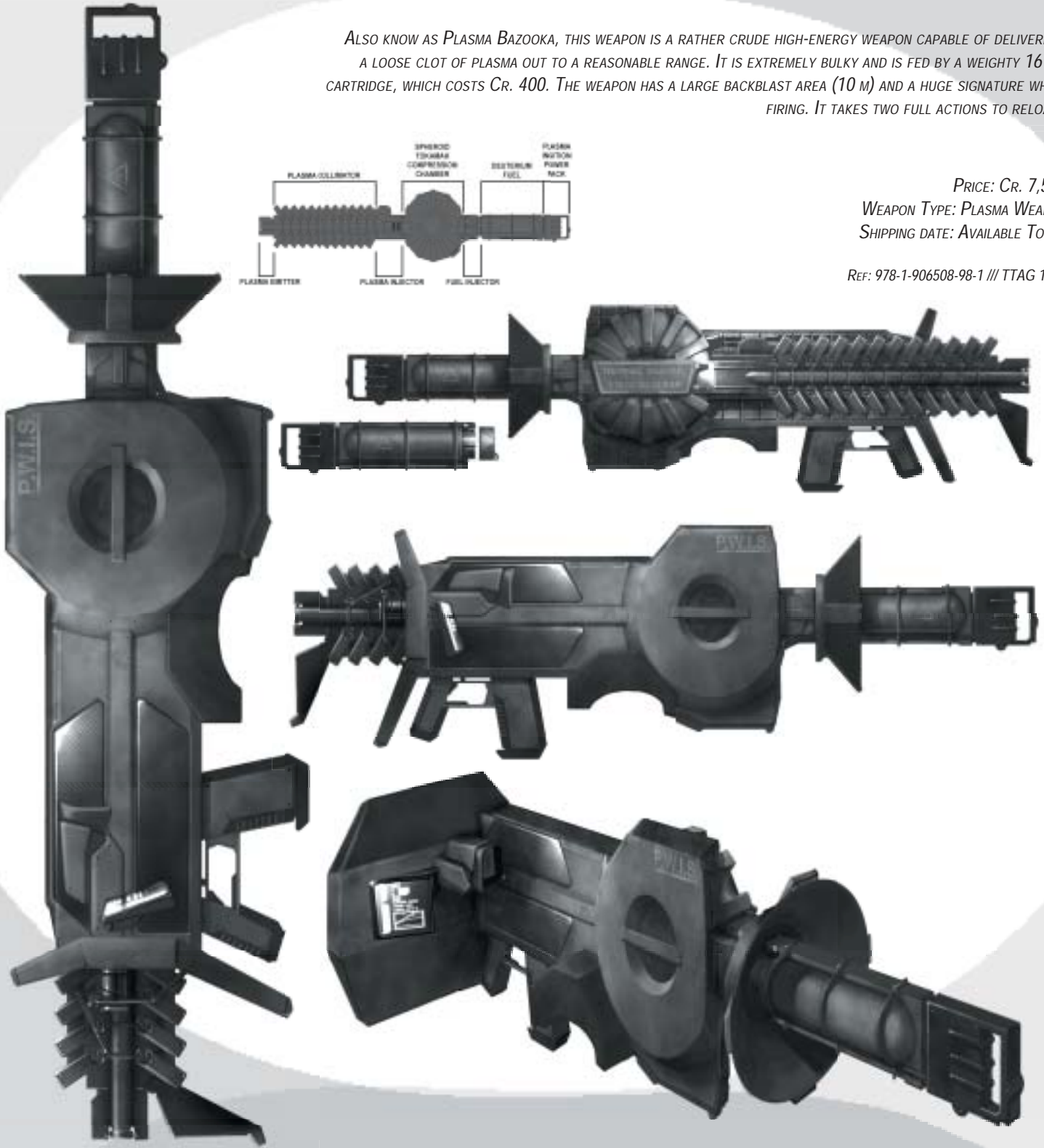


PRICE: CR. 7,500

WEAPON TYPE: PLASMA WEAPON

SHIPPING DATE: AVAILABLE TODAY

REF: 978-1-906508-98-1 /// TTAG 1705



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TRAVTECH PRESENTS...

PLASMA GUN

MAN-PORTABLE 14 (TL 14)

THE ULTIMATE DEVELOPMENT OF THE PLASMA GUN, THE PGMP-14 INCORPORATES A GRAVITIC FIELD GENERATOR THAT PROVIDES VERY GOOD RECOIL COMPENSATION. THIS ENABLES PERSONNEL NOT IN POWERED ARMOUR TO FIRE EVERY ROUND.

PRICE: CR. 100,000

WEAPON TYPE: PLASMA WEAPON

SHIPPING DATE: 200 - 1106

REF: 978-1-906508-21-2 /// TTAG 0976



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TRAVTECH PRESENTS...

FUSION RIFLE,

(FR 17) (TL 17)

A VERY BULKY RIFLE FED FROM A BELT POWERPACK, THE FR-17 FIRES A PULSE/BALL OF FUSING PLASMA, MUCH LIKE THE HEAVY FGMP WEAPONS ABOVE. IT USES A STRONGER CONTAINMENT FIELD EMITTER, ENABLING THE PROJECTILE TO ACHIEVE GREATER RANGES THAN THOSE OF A PLASMA PISTOL. RADIOACTIVE CONTAINMENT IS REASONABLE; ANYONE WITHIN PERSONAL RANGE OF THE WEAPON WILL BE EXPOSED TO 1D6X10 RADS EVERY TIME THE WEAPON IS FIRED. THE SHOOTER IS HOWEVER PROTECTED BY A GRAVITIC CONTAINMENT SYSTEM THAT DIRECTS HARMFUL RADIATION INTO THE FORWARD ARC (TOWARDS THE TARGET). LIKE THE PLASMA RIFLE, THIS WEAPON'S POWER PACK (4 KG OF THE WEAPON'S MASS) CAN PROVIDE ENOUGH CHARGES FOR SEVERAL HUNDRED SHOTS AND CAN BE RECHARGED FROM A SUITABLE POWER SOURCE BETWEEN COMBATS.

PRICE: CR. 25,000

WEAPON TYPE: FUSION WEAPON

SHIPPING DATE: 131 - 1106

REF: 978-1-906508-09-0 /// TTAG 4231



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PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Infantry Support Plasma Weapon	9	Rifle	Heavy Weapons (Man Portable Artillery)	8d6	1	No	1	7,500	27	500
PGMP-12	12	Rifle	Heavy Weapons (Man Portable Artillery)	10d6	10	4	3	20,000	10	500
PGMP-13	13	Rifle	Heavy Weapons (Man Portable Artillery)	12d6	10	4	0	65,000	10	500
PGMP-14	14	Rifle	Heavy Weapons (Man Portable Artillery)	12d6	10	6	0	100,000	10	500
FGMP-14	14	Rifle	Heavy Weapons (Man Portable Artillery)	16d6	12	4	0	100,000	10	500
PGMP-15	15	Rifle	Heavy Weapons (Man Portable Artillery)	16d6	12	4	0	400,000	10	500
PGMP-16	16	Rifle	Heavy Weapons (Man Portable Artillery)	16d6	15	6	0	500,000	10	500
Plasma Rifle	16	Rifle	Heavy Weapons (Man Portable Artillery)	6d6	300	No	-1	100,000	6	-
Fusion Pistol-17	17	Pistol	Gun Combat (Man Portable Artillery)	4d6+2	300	No	2	10,000	4	5,000
Fusion Pistol-18	18	Pistol	Gun Combat (Man Portable Artillery)	4d6+4	300	No	2	12,000	4	7,000
Fusion Pistol-19	19	Pistol	Gun Combat (Man Portable Artillery)	4d6+6	300	No	1	15,000	4	10,000
Fusion Rifle-17	17	Assault Weapon	Gun Combat (Man Portable Artillery)	5d6+2	300	No	3	25,000	7	7,000
Fusion Rifle-18	18	Assault Weapon	Gun Combat (Man Portable Artillery)	5d6+4	300	No	3	30,000	7	10,000
Fusion Rifle-19	19	Assault Weapon	Gun Combat (Man Portable Artillery)	5d6+6	300	No	1	45,000	7	15,000

OTHER RANGED WEAPONS

The term 'other ranged weapons' is used as a catch-all for a range of weapons that do not use projectiles. These include microwave guns and other non-concentrated beam based technologies as well as neural weaponry.

Baton Gun (TL 5): A baton gun, or 'magic wand' as it is sometimes known, is a short handheld rod containing a single light shotgun cartridge. Useless beyond 5 m, the baton gun may be triggered by hard contact with an opponent (being rammed into him) or by a stud on the shaft. In the former case it can be used to make a brawling attack and, if successful, automatically inflicts its light shotgun damage as well. If fired at a more distant target, the weapon receives the shotgun at close range bonus to hit. Baton guns are disposable and not usually reloaded.

Sprayer (TL 5): A hand-held spray that delivers a stream of a chemical, usually an irritant like tear gas or pepper spray. Non-lethal incapacitants are usually not heavily restricted but chemicals causing death or permanent harm are much harder to come by. See Chemical Weapons for details.

Speargun (TL 6): An underwater weapon launching a harpoon or spear using compressed gas. The spear may or may not be attached to the gun by a line. Spearguns must be manually reloaded after every shot, which takes a major action. Spears weigh 1 kg.

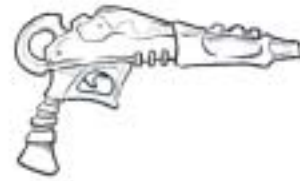
Thud Gun (TL 6): A single-shot discharger firing a heavy but soft projectile for non-lethal knockdown. Damage is 2d6, of which 1d6 is stun damage (the target takes 1d6 'real' damage and the total as stun damage).

Stun Pistol, Electric (TL 7): A handgun-like device that delivers an electric shock to the target, hopefully stunning him for 3d6 rounds. The shock may be delivered by a pair of darts with wires attached or a spray of liquid acting as a conduit. Range is very short and this weapon is not good against armour. Roll 1d6 and divide by two when the target is hit – if this is greater than the target's armour rating, the stun effect is rolled for. Otherwise the shock does not get through the target's armour or clothing.

Tranq Rifle (TL 7): The Tranq rifle is designed to deliver a chemical effect at greater range than the pistol, possibly even through light armour. The weapon does no damage other than its sedative effect but rolls 1d6 when it hits the target. If this is higher than the target's armour points, the needle has broken through and the drug may affect the target. The standard ammunition is a strong sedative (-2 to Endurance check) which will render the target unconscious for 6d6 combat rounds and groggy thereafter.



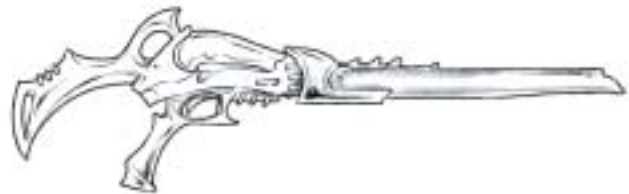
Tranq Pistol (TL 7): Used by animal handlers, among others, the Tranq pistol fires a dart filled with a tranquilliser to sedate a target. This can take several combat rounds however, so combat use is limited. Single-shot versions and a 5-round magazine model are available. The standard ammunition is a strong sedative (-2 to Endurance check) which will render the target unconscious for 6d6 combat rounds and groggy for up to an hour thereafter. This weapon is useless against any form of armour other than reflex.



Stun Carbine, Electric (TL 8): A more powerful version of the stun pistol, with a heavier charge which can sometimes disable the target through armour. Roll 1d6 when the target is hit - if this is greater than the target's armour rating, the stun effect is rolled for. Otherwise the shock does not get through the target's armour or clothing.



Microwave Carbine (TL 8): An alternative to lasers as a personal energy weapon, the microwave carbine is powered by a small 3 kg backpack power supply and resembles a chunky short rifle. Its beam causes heating in organic tissue and can cause unshielded circuitry to malfunction. However, range is short. Unlike a maser, which uses coherent and focussed energy, the microwave carbine is not as advanced or accurate, suffering a -2 DM to hit.



Stun Carbine, Sonic (TL 9): A fat, bell-mouthed device which emits a pulse of sound at a frequency designed to interfere with the target's mental and physical functions. The effect is to cause unconsciousness for 1d6 rounds and disorientation for a further 2d6 after recovery. This weapon can only work where there is air. It ignores all non-sealed armour (such as a vacc suit with the helmet on protects; a flak jacket does not) unless it includes sonic protection.



Pistol, Splinter (TL 13): An alien technology infusing fragile crystals with radiation before hurling them at high speeds at a target, splinter weapons inflict half their damage from the puncturing of the target. The other half of the damage is from the rapid breakdown of the crystal's physical integrity due to the radiation saturation, causing an explosion inside the target. Splinter weapons have two damage types listed in their profiles. The first is the physical damage which must bypass a target's Armour before applying the second listed damage (the crystal explosion). Splinter weapons use tiny generators to charge their ammunition that are effectively indefinite but require crystal shard reloads referred to in the ammunition of the weapon.



Carbine, Splinter (TL 13): A larger, two-handed version of the splinter pistol, the splinter carbine has a faster firing rate and a longer range. Other than the changes to their profiles below, these weapons function the same way as splinter pistols.



Rifle, Splinter (TL 13): Long bodied and heavy, the splinter rifle has

a lower rate of fire than the splinter carbine but increases the range dramatically. Its size allows for larger individual crystal shards, which increase the damage potential of the weapon as well. Other than the changes to their profiles below, these weapons function the same way as splinter pistols.

Neural Weapon, Telepathic (TL 16): Experimentation with neural weaponry allows a weapon which can duplicate the effects of a telepathic assault. It is operated telepathically and requires the user have some level of telepathic ability and training. However, it does allow one assault to be made each round without costing the telepath any strength points. The telepathic attack is treated exactly like an assault. The weapon does not need to be anything even resembling a gun or other weapon. Its circuitry and power source will mass 1 kg or so but it can have any shape and form. An artificial telepathic assault of this sort can be sensed by any telepath within a kilometre or two. An artificial psionic shield or a telepath's mental shield will protect against the attack.

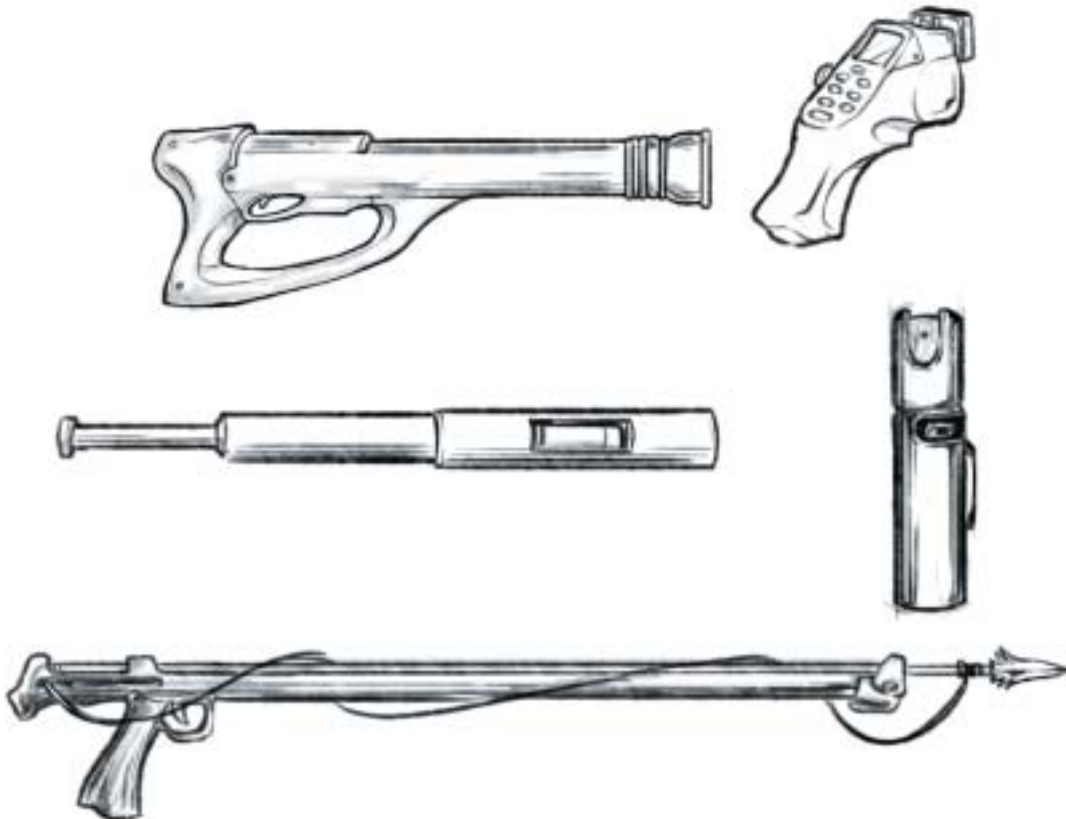
Neural Rifle (TL 17): The first neural weapon for non-telepaths, the neural rifle is shaped like a rifle or carbine. It is pointed at the target and triggered like any other weapon. An artificial psionic shield or a telepath's mental

shield will protect against the attack. Otherwise, armour has no effect. It is necessary to roll to hit the target using Gun Combat (Neural Weapons) skill. If a hit is scored, the effects of a telepathic assault are applied.

Matter Disintegrator (TL 18): A handheld weapon capable of causing the target's molecules to shed particles, effectively disintegrating the target. This weapon is more effective against more dense targets, so its Effect is not determined by the hit roll. Instead the weapon is considered to have an Effect equal to the target's armour rating.

Neural Pistol (TL 18): The neural pistol a smaller version of the neural rifle. It is shaped like a rod or a handgun. It is pointed at the target and triggered like any other weapon. An artificial psionic shield or a telepath's mental shield will protect against the attack. Otherwise, armour has no effect. It is necessary to roll to hit the target using Gun Combat (Neural Weapons) skill. If a hit is scored, the effects of a telepathic assault are applied.

Matter Disintegrator, Improved (TL 19): A more advanced disintegrator weapon with a greater effective range and more potent effect.



PERSONAL AND LIGHT SUPPORT WEAPONS

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Baton Gun	5	Thrown	Melee (Unarmed) or Gun Combat (Slug Pistol)	2d6	1	No	1	15	0.1	–
Sprayer	5	Thrown	Gun Combat (Slug Pistol)	Chemical	3	No	–	25	0.1	10
Speargun	6	Pistol	Gun Combat (Slug Carbine)	2d6+2	1	No	0	15	2	5
Thud Gun	6	Pistol	Gun Combat (Slug Rifle)	1d6+1d6 stun	1	No	2	100	1	10
Microwave Carbine	7	Assault Weapon	Gun Combat (Laser Carbine)	4d3	60	No	–	1,000	5	–
Electric Stun Pistol	7	Thrown	Gun Combat (Slug Pistol)	2d6 Stun	100	No	–	300	0.5	–
Electric Stun Carbine	8	Thrown	Gun Combat (Slug Carbine)	2d6+2 Stun	1	No	–	800	3	–
Tranq Pistol	7	Pistol	Gun Combat (Slug Pistol)	Chemical	1 or 5	No	–	75	0.35	3 or 15
Tranq Rifle	7	Assault Weapon	Gun Combat (Slug Rifle)	Chemical	7	No	–	175	2	21
Sonic Stun Carbine	9	Pistol	Gun Combat (Laser Carbine)	Stun	20	No	–	350	3	–
Splinter pistol	13	Pistol	Gun Combat (Slug Pistols)	2d6 (1d6+2)	24	4	0	400	5	50
Splinter Carbine	13	Assault Weapon	Gun Combat (Slug Carbines)	2d6 (1d6+2)	52	6	1	600	7	100
Splinter Rifle	13	Rifle	Gun Combat (Slug Rifles)	3d6 (2d6+3)	10	No	1	750	10	75
Telepathic Neural Weapon	16	Line of sight	Gun Combat (Neural Weapons)	Telepathic Assault	–	No	–	200,000	0.5	–
Neural Rifle	17	Line of sight	Gun Combat (Neural Weapons)	Telepathic Assault	–	No	–	225,000	0.5	–
Matter Disintegrator	18	Pistol	Gun Combat	2d6	–	No	3	30,000	10	50,000
Neural Pistol	18	Line of sight	Gun Combat (Neural Weapons)	Telepathic Assault	–	No	–	250,000	0.5	–
Improved Matter Disintegrator	19	Shotgun	Gun Combat	3d6	–	No	3	50,000	10	–

LIGHT SUPPORT WEAPONS

Light support weapons are sometimes little more than overgrown rifles or may be custom-designed weapons. Some of these weapons may be used with either Slug Rifle or Heavy Weapons skill. Others require Heavy Weapons.

These weapons include lighter autocannon which are not quite large enough to be considered artillery weapons. They are thus subject to small arms, rather than artillery, rules. All the weapons below have a semi-armour piercing (SAP) effect unless otherwise noted and can use a range of ammunition types.

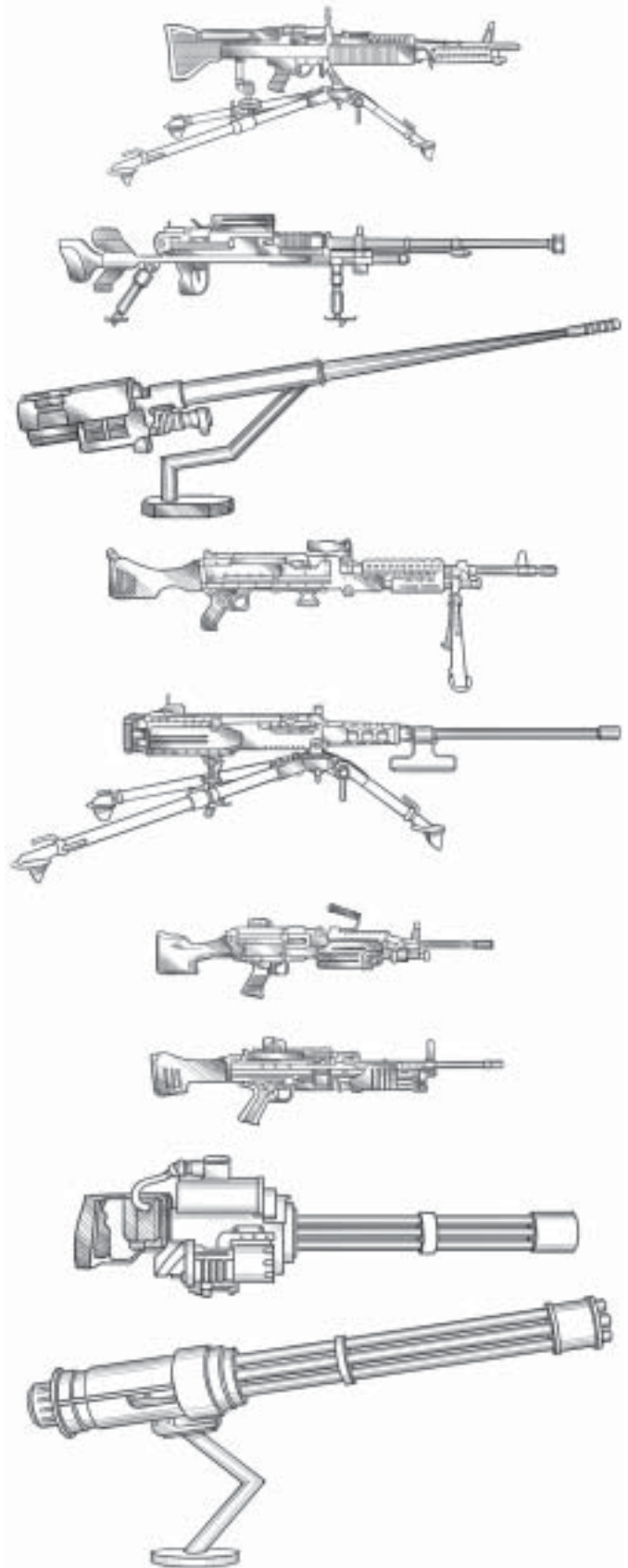
Machine Gun, Medium (MMG) (TL 5): A bulky, heavy support weapon fed by a belt of fullbore rifle-calibre rounds. Belts of any length can be constructed, though 50, 100 or 250-round belts are common. An MMG is too heavy to move around quickly and must be fired from a tripod (included in the weight) or other mount.

Rifle, Antitank (TL 5): An oversized rifle weapon, normally bolt-action but sometimes semi-automatic, designed to attack hard targets like primitive tanks and heavy equipment. Antitank rifles can use armour-piercing or explosive ammunition, which is not compatible with any other weapon. This weapon is too bulky to fire on the move; it must be rested on its integral bipod.

Autocannon, Light (TL 6): A light (15–25mm) rapid-fire belt-fed weapon capable of engaging light armoured vehicles and aircraft. Some light autocannon (automatic cannon) are little more than overgrown machineguns; others are more robust. Light Autocannon are generally mounted on light armoured vehicles, aircraft, or in bunkers. They can use armour-piercing and other specialist ammunition but the default loading is anti-personnel light HE.

Machine Gun, General Purpose (GPMG) (TL 6): A squad support weapon fed by a belt of ammunition which is interchangeable with that used in rifles and autorifles. The belt may be carried loose or in a box. Belts of any length can be constructed, though 50, 100 or 250-round belts are common. The GPMG is functionally similar to the LMG (below) but it is purpose designed as a support weapon rather than being an overgrown rifle. The GPMG is therefore slightly more robust and capable of more sustained fire.

Machine Gun, Heavy (HMG) (TL 6): A large support weapon designed to be used from a tripod or other fixed mount, the HMG is fed by a belt of ammunition, typically of 10–13mm calibre. HMGs normally use Ball ammunition but can fire AP or APDS. They are considered to be automatic cannon (Autocannon) for purposes of skill determination. HMGs have a reasonable anti-air and anti-vehicle capability but are primarily considered to be anti-personnel weapons.



Machine Gun, Light (LMG) (TL 6): A heavier, belt-fed, version of the automatic rifle, the LMG can be fired from the hip like an overgrown rifle. LMGs use 5mm light rifle ammunition and many can use the magazines for rifles and carbines in the same calibre. An LMG belt may be loose or carried in a box; in the latter case 100 rounds is normal and a loaded box will weigh 2.5 kg. Reloading a belt (whether boxed or not) takes 3 full combat rounds if the weapon is manned by a single individual, one round if a loader is present. If using rifle magazines, reloading takes one minor action.

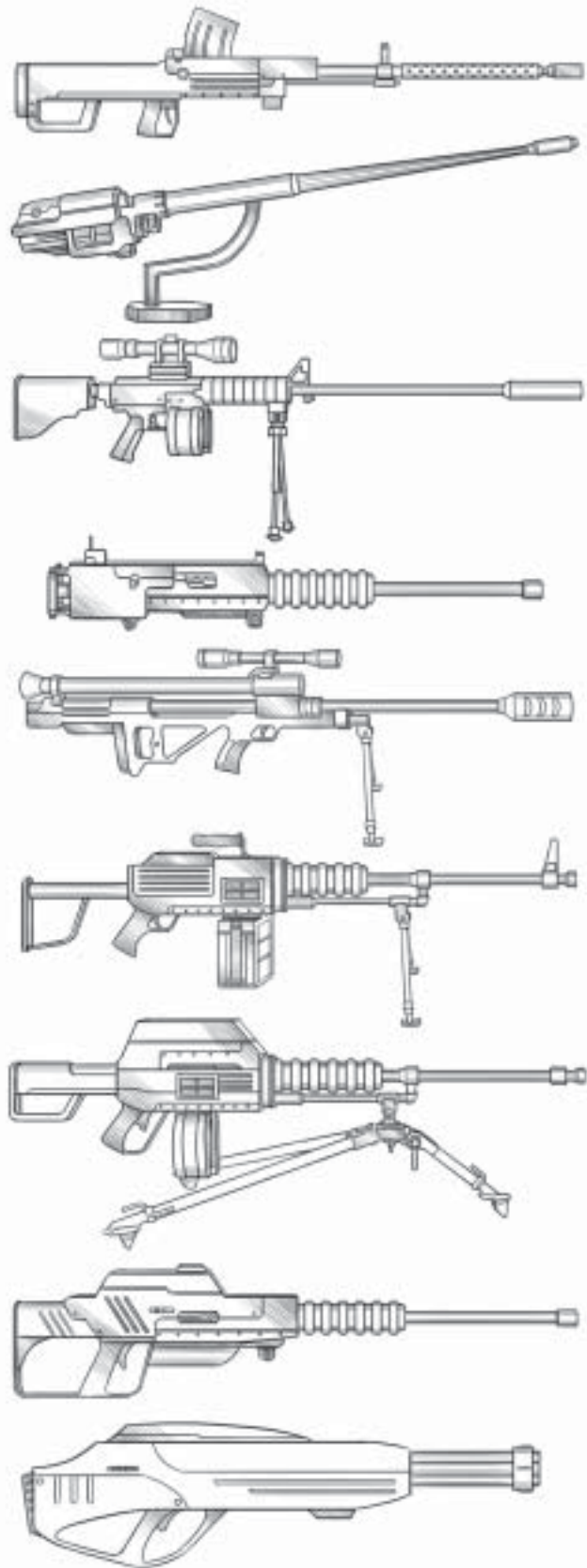
Machine Gun, Light, Rapid-Fire (LMG, RF) (TL 7): An LMG with an extremely high rate of fire, the RF LMG can use autofire mode or make a rapid-fire (RF) attack if it has 50 rounds or more in its ammunition supply. An RF attack uses up the remainder of the belt or box and causes excessive heating. The weapon must afterward cool for 2 rounds without firing. If the weapon is fired without cooling, problems may occur. If firing an LMG RF that has not been allowed to cool, roll 2d6 each round the LMG is fired. An 8+ is necessary to avoid a mishap, DM -4 if firing in RF mode, -2 per round the weapon has engaged in sustained fire. A mishap, in this case, means the weapon 'runs away' and fires off all its remaining ammunition unless someone stops it, normally by breaking the belt. A weapon which has run away will be too hot to use for some time afterward and has a 50-50 chance of ruining its barrel.

Machine Gun, Vulcan (VMG) (TL 7): A Vulcan machine gun consists of several machinegun barrels (usually six) which together generate very rapid fire without undue heating by rotating the barrels through the firing position. Each cools and is reloaded in turn as the next moves into position and is fired. Barrel rotation is electrical. The VMG is normally chambered for heavy rifle-calibre (8mm) ammunition compatible with GPMGs and fed from 1000-round belts. A VMG can only use Rapid-Fire (RF) mode. It fires 100 rounds in a single burst.

Light Autocannon, Vulcan (TL 7): A multi-barrel light autocannon capable of extremely rapid fire by rotating the barrels, thus allowing each to cool as the next others fire. Vulcan mounts use RF fire, expending 100 rounds from their ammunition supply (usually a 1000 round belt each time).

Light Assault Gun (LAG) (TL 8): A heavy (20mm calibre) rifle fed by a 5-round magazine, the LAG can deliver a variety of ammunition types including explosive, armour-piercing and flechette rounds.

Light Autocannon, Advanced (TL10): A high-tech light (15-25mm) rapid-fire belt-fed weapon capable of engaging light armoured vehicles and aircraft, using advanced stabilization techniques to reduce recoil and increase accuracy. Advanced Light Autocannon are generally mounted on light armoured vehicles, aircraft, or in bunkers. They can use armour-piercing and other specialist ammunition but the default loading is anti-personnel light HE.



Support Weapon, Advanced (ASW) (TL 10): A long-barrelled version of the heavy ACR. the ASW is intended to provide infantry squads with a measure of fire support. Its main advantage is that it shares magazines with the heavy ACR and can be used by any rifleman. The ASW has no grenade launcher but has an improved sighting system and a bipod for support work. It can use standard ACR magazines or a 100-round box.

Gauss Gun, Very Rapid Fire (VRF) (TL 10): A support weapon using gauss technology to achieve extremely high rates of fire, the VRF gauss gun is often used as an antipersonnel weapon aboard advanced armoured vehicles. A tripod-mounted infantry version is available. Ammunition expenditure is prodigious and requires a large hopper co-located with the gun to ensure an adequate supply. Ammunition is the same 5.5mm needles as used in the heavy gauss rifle but these are fired in bursts of 200.

Rifle, Anti-Materiel, Man-Portable (RAMP) (TL 10): The RAMP is a single-shot bolt-action superheavy rifle firing long 22mm cartridges at high velocity. It is designed to be able to penetrate light armoured vehicles. Recoil is enormous despite a sophisticated damping system. This weapon has an intrinsic full-AP capability, ignoring the first 10 points of armour it encounters. It can use high explosive or discarding sabot-AP rounds. The latter convert this ferocious weapon to super-AP, ignoring 20 points of armour.

Squad Support Weapon, Gauss, 4mm (TL 12): Also known as a gauss machinegun, this weapon is a heavy-duty gauss rifle fitted with a long barrel, bipod and large (500-round) ammunition box, plus a high-output power supply, It is found as a squad support weapon in some militaries. Ammunition is interchangeable with

the 4mm rifle and the weapon can take rifle magazines at need. There is no grenade launcher but holographic sights are fitted as standard. Gauss machineguns may use semi-automatic, burst-fire or full-automatic modes.

Support Weapon, Gauss, Rapid-Fire, 4mm, (TL 13): A somewhat larger version of the standard squad-support gauss MG, this variant is capable of more rapid sustained fire. The extra weight comes mainly from the extra cooling and power supply equipment; each 1,000-round ammo pack contains a disposable power cell for the fire and cooling systems and weighs 15 kg (base weight of the weapon is with one pack aboard). This weapon is normally fitted to light vehicles but can be found as a heavy infantry support weapon with a tripod mount.

Gauss Rifle, Very Rapid Fire (TL 14): An attempt at a cross between a squad support weapon and a very rapid fire (VRF) assault weapon, the VRF gauss rifle is used by some battle dress equipped troops. It can be mounted on a pintle on a vehicle or fired from a fixed position but its very heavy powerpack and ammunition make it impractical for non-augmented troops. 200 rounds are fired in a single attack. This weapon uses 5.5mm gauss needles.

Support Weapon, MagRail (TL 15): Sometimes misnamed a 'Magrail Minigun', this weapon launches electromagnetic induction to launch clouds of ovoid projectiles from its multiple bores. Range is relatively short for a support weapon but the projectiles hit hard. The four barrels fire in rapid sequence, each scattering 24 projectiles for a total of almost 100 in a split second. This gives a +2 DM to hit at ranges out to Shotgun. This weapon is capable only of what amounts to superfast autofire, although its mode of operation is more like a multibarrelled shotgun.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Antitank Rifle	5	Rifle	Gun Combat (Slug Rifle)	6d6 SAP (Ball) 7d6 (HE) 6d6 AP (Anti-Armour)	5	No	2	2,400	18	20
Medium Machinegun	6	Rifle	Gun Combat (Slug Rifle)	3d6+3 SAP	100	6	1	2,500	25	150
Light Autocannon	6	Rifle	Heavy Weapons (Autocannon)	6d6 SAP (Ball) 7d6 (HE)	100	6	3	7,500	50	600

PERSONAL AND LIGHT SUPPORT WEAPONS

General-Purpose Machinegun	6	Rifle	Gun Combat (Slug Rifle)	3d6+3 SAP	100	6	1	3,500	10	150
Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Heavy Machinegun	6	Rifle	Heavy Weapons (Autocannon)	5d6 SAP	100	6	1	4,500	36	400
Light Machinegun	6	Rifle	Gun Combat (Slug Rifle)	3d6 SAP	100	6	2	3,000	7	125
Rapid-Fire Light Machinegun	7	Rifle	Gun Combat (Slug Rifle)	3d6 SAP	100	6 or 10 (RF)	2	5,000	7	125
Vulcan Machinegun	7	Rifle	Heavy Weapons (Autocannon)	3d6+3 SAP	1000	10	2	12,000	70	1,250
Vulcan Light Autocannon	7	Rifle	Heavy Weapons (Autocannon)	6d6 SAP (Ball) 7d6 (HE)	1000	10	1	65,000	120	6,000
Light Assault Gun	8	Rifle	Gun Combat (Slug Rifle)	6d6 SAP (Ball) 7d6 (HE) 6d6 SP (Anti-armour)	5	No	5	5,000	30	30
Advanced Light Autocannon	10	Rifle	Heavy Weapons (Autocannon)	6d6+4 SAP	200	8	2	1,000	50	800
Anti-Materiel Rifle	10	Rifle	Gun Combat (Slug Rifle)	10d6 AP (Ball) 11d6 (explosive) 1-d6 super-AP (DSAP)	1	No	4	10,000	15	100
Advanced Support Weapon	10	Rifle	Gun Combat (Slug Rifle)	4d6 SAP 4d6 AP (DSAP)	100	4	2	2,750	5	50
VRF Gauss Gun	10	Rifle	Heavy Weapons (Autocannon)	5d6 AP	4000	12	2	200,000	2000	8,000
Gauss Support Weapon	12	Rifle	Gun Combat (Slug Rifle)	4d6 AP	500	6	1	8,500	7.5	1,000
Gauss Support Weapon RF	13	Rifle	Gun Combat (Slug Rifle)	4d6 AP	1000	8	1	16,000	38	2,000
VRF Gauss Rifle	14	Rifle	Gun Combat (Slug Rifle)	5d6 AP	1000	10	2	50,000	40	2,000
Magrail Support Weapon	15	Long	Heavy Weapons (Autocannon)	5d6+4	500	12	2	250,000	25	5,000

SUPPORT AND ARTILLERY WEAPONS

Light support weapons are considered in chapter 2, as their use overlaps in many ways with small arms. A light autocannon is, after all, just a larger heavy machinegun and those are not very different from light machineguns and even automatic rifles. However, there comes a point where a weapon is best considered to be an artillery system. Most artillery weapons require a crew of several people to operate them; this applies to heavier support weapons too.

There are, broadly speaking, three types of weapon to be considered here; those delivering a payload by indirect fire, those delivering a payload or just the energy of their impact by direct fire and those having other effects such as meson guns and laser weapons. Most of the third category are energy weapons.

Since Traveller is a roleplaying system and not a simulation wargame, there is no need to precisely define the characteristics of every single mortar, gun, rocket or missile which could ever exist. Instead, a simple system to rate grenades, rockets, missiles, artillery shells and such like is used. For simplicity, weapons delivering a small payload, such as hand grenades, are included in this section rather than under small arms.

The values given in this chapter may be superseded by detailed design sequences allowing very precise values to be defined for various weapons. For the average Traveller game this is not necessary, so we group warheads for grenades, artillery rounds, bombs and missile payloads into various size categories. For most weapons it is enough to simply note what class of shell the weapon can deliver, out to what sort of range. People on the receiving end probably do not care if that was a 100mm or 105mm shell that just went off next to them, anyway!

Mortars, bombs, missiles and rocket warheads tend to have somewhat different characteristics, so it is possible that a fairly large shell might have similar performance to a relatively small rocket warhead. We are interested in effect, not size, though as a rule calibres will be in the same general class.

For all grenades and artillery weapons, the same system is used to rate the weapon:

Size: A rating of the general characteristics of the weapon.

Range: How far the warhead can travel, in km.

Calibre: An equivalent gun calibre, for reference.

Burst radius: The primary danger area from an exploding warhead. Some payloads have a contact effect as well and most have a secondary danger area equal in radius to the primary one. Thus a mortar bomb with a 3m burst radius poses a severe threat to anyone in its primary 3m burst radius and a lesser threat to anyone in the secondary radius, which is also 3m across. Anyone more than 6m away should be reasonably safe.

Artillery Weapon Types

Artillery warheads can be delivered by various means, the most common ones being:

Emplacement or hand delivery, such as by throwing.

Explosive/Chemical Propulsion out of a smoothbore or rifled barrel.

Electromagnetic Propulsion out of a smoothbore or rifled barrel.

Rocket Propulsion with or without in-flight guidance.

Air-dropping from an aircraft or similar vehicle, with or without guidance.

The weapons used come down to several basic types:

Hand Grenades contain a small payload and are delivered by throwing or emplacement.

Grenade Launchers fire a small payload off the end of a rifle or from a tube launcher (the grenades used in each case are different).

Mortars are high-angle (usually) smoothbore weapons with a short barrel that lob a bomb over a relatively short distance. Very large mortars are sometimes used for siege work but are uncommon.

Howitzers are short-barrelled guns which are more mobile than full-length guns but have a consequently shorter effective range. Howitzers can fire 'over open sights', directly at the target but have a short range and are thus not very effective.

Guns are the 'industry standard' artillery weapons, using explosive, chemical or other means to propel a shell over fairly long distances. Other propulsion systems are possible, such as compressed-air guns used to deliver an explosive charge. Guns can fire 'over open sights', directly at the target and are usually fairly effective in this role, though they are vulnerable to counter-fire. Artillery guns are thus used as low-tech anti-air and anti-tank weapons before specialized weapons become available.

Mass Driver Guns are artillery guns using electric acceleration instead of a chemical charge to accelerate the warhead up the barrel. Mass Driver Guns have a base range 1.5 times as far as the conventional equivalent.

Rockets are unguided weapons. They may be used in direct fire (such as from aircraft) or more commonly as an indirect-fire artillery system. They are inaccurate but can carry a large warhead for their size.

Missiles are essentially guided rockets.

Bombs are normally delivered by being dropped from an air vehicle. The term is sometimes used to refer to an emplaced explosive device or a mortar projectile.

Certain other weapons are not artillery in the traditional sense but need to be defined here:

Autocannon are automatic weapons, usually of smallish calibre (under 60mm) with a reasonable to very high rate of fire. They serve in all manner of roles, from aircraft armament to anti-air and antipersonnel. Autocannon are often the main armament of light combat vehicles.

Cannon are high-velocity direct-fire weapons, usually of fairly large calibre. The term normally applies to vehicle armament but cannon are used in emplacements or anti-air mounts too. The word cannon also refers to a primitive black-powder gun capable of direct fire or bombardment.

Petards are very short-ranged cannon of large calibre, normally employed for demolishing enemy fortifications by specialist engineering vehicles.

Artillery Weapon Payload Size Classes

Size	Typical Calibre	Range (Km)	Burst Radius (m)	Base Damage	Comments and Examples
Hand Grenade	N/A	0.05	3	5d6	Hand Grenade
Launched Grenade	30-40mm	0.5	4	6d6	Launched grenade
Extremely Light	60mm	6	5	7d6	Light Mortars
Very Light	80mm	9	6	8d6	Medium Mortars, Strafing Rockets, Light Air-Dropped Bombs
Light	100mm (4")	12	7	9d6	Light artillery/howitzers
Medium	125mm (5")	15	8	10d6	Heavy Mortars, Medium Air-Dropped Bombs
Medium-Heavy	150mm (6")	18	9	12d6	Medium Artillery Guns
Heavy	175mm (7")	21	10	14d6	Light Artillery Rockets, Heavy Air-Dropped Bombs
Very Heavy	200mm (8")	24	11	16d6	Heavy Artillery Guns
Extremely Heavy	250mm (10")	27	12	18d6	Heavy Artillery Rockets, Superheavy Mortars
Enormous	300mm (12")	30	13	20d6	Huge Guns
Gigantic	400mm (16")	40	14	24d6	Immense Guns
Special	800mm (32")	50	15	28d6	Special Project

Lasers, Plasma and Fusion Guns are direct-fire weapons which cannot arch a payload over an obstruction and are thus only suited to the direct-fire role. Lasers burn through the target or superheat it, often causing a secondary explosion. Plasma and fusion weapons deliver massive heat energy and tend to cause a lot of secondary 'splash' damage.

Meson Guns are a revolutionary form of artillery as they can 'shoot through' virtually any obstruction. If the gunners have a target location (from spotters or sensors) and the target is in range, it can be hit. The only defence is a meson screen or black globe generator. Meson guns are often buried in deep bunkers where they are hard to find and destroy. Other ploys include moving the meson array around in a submarine in deep water.

Typical Calibre refers to a gun, howitzer or mortar with a bore in this size range. A missile, bomb or rocket, with its differently shaped warhead, may not be of the same size but has an equivalent effect.

Range is in kilometres and refers to a gun of this calibre. A smoothbore mortar has 1/3 the range listed and a howitzer (a short-barrelled artillery piece) has 2/3 this range. Range of a rocket system is half the listed range.

Burst Radius is the primary burst radius of an explosive or fragmentation warhead fired from the weapon. Special warheads may have an increased or decreased area of effect. Most payloads have a secondary area of effect equal to the same distance again. Within this area, damage is usually halved.

Base Damage indicates the damage done within the primary area of effect by an explosive/fragmentation warhead of this size

Anti-Armour Effects

As with small arms, some artillery weapons perform better against armour than others. Area effects such as fragmentation from a shell burst usually have no intrinsic armour-piercing capability. Anti-Armour munitions can have several possible effects:

Semi Armour-Piercing (SAP) – this effect is uncommon with artillery weapons. The round ignores a number of points of armour equal to half the number of dice it rolls for damage, rounding down. Example: a weapon doing 9d6 SAP damage ignores 4 points of armour. If the target has less armour than this value, the excess is wasted.

Armour-Piercing (Full-AP or AP) – the round ignores a number of points of armour equal to the number of dice it rolls for damage. Example: a weapon doing 9d6 AP damage ignores 9 points of armour. If the target has less armour than this value, the excess is wasted.

Super Armour-Piercing (Super-AP) – the round ignores a number of points of armour equal to twice the number of dice it rolls for damage. Example: a weapon doing 9d6 AP damage ignores 18 points of armour. If the target has less armour than this value, the excess is wasted.

Ultra Armour-Piercing (Ultra-AP) – the round ignores a number of points of armour equal to three times the number of dice it rolls for damage. Example: a weapon doing 9d6 AP damage ignores 27 points of armour. If the target has less armour than this value, the excess is wasted.

Mega Armour-Piercing (Mega-AP) – the round ignores a number of points of armour equal to four times the number of dice it rolls for damage. Example: a weapon doing 9d6 AP damage ignores 36 points of armour. If the target has less armour than this value, the excess is wasted.

Ultimate Armour-Piercing (Ultimate-AP) – the round ignores a number of points of armour equal to five times the number of dice it rolls for damage. Example: a weapon doing 9d6 AP damage ignores 45 points of armour. If the target has less armour than this value, the excess is wasted.

Soft Target (ST): Some weapons are fairly ineffective against armoured targets. ST weapons treat all armour as doubled in effect.

Payloads and Warheads

Most support and artillery weapons can deliver a range of warheads whose effects vary according to the type and size of the payload. Unless otherwise noted all the payloads below deliver their listed damage within the primary area of effect and half damage within the secondary area of effect.

Aerosol: Aerosol payloads release an anti-laser aerosol preventing laser weapons and laser designators from affecting anything in the radius of effect. The aerosol will persist for 1d6+6 rounds if Light or smaller and 10 times as long if delivered by heavier artillery (halved in windy conditions in both cases). A laser weapon shooting through an aerosol cloud has its damage reduced by 10. Example: local forces drop a salvo of aerosol rounds from 100mm artillery on their forward position to confound enemy lasers. Burst radius for a 100mm gun is 7m, so the shells fill a 14m radius (primary + secondary) with anti-laser aerosols.

Armour Piercing: A mid-tech anti-armour round, AP is a pointed projectile of some dense or very hard material and is more advanced than Solid Shot. It causes damage on a direct hit only. AP ammunition does the weapon's base damage on a direct hit and no damage at all if it does not achieve a direct hit. It is treated as Super-AP, ignoring a number of points of armour equal to twice the number of dice rolled for base damage. Thus a 100mm tank gun firing AP rounds does 9d6 damage, ignoring the first 18 points of armour it encounters.

Armour Piercing Discarding Sabot (APDS): Representing several variations on the theme of a rod penetrator launched with a sabot and featuring increasingly long acronyms, APDS is a mid to high technology anti-armour round representative of various efforts to get through armour. It causes damage on a direct hit only, in which case it delivers the weapon's base damage with an Ultra-AP effect.

Baton/Stunbag: Only available for grenade launchers and the like, baton rounds allow the user to deliver a non-lethal attack. They do not do damage but may disable an opponent. Specialist launchers ("Thud Guns") which can only fire baton rounds exist and are used by riot and security forces. A baton or stunbag round from a grenade launcher delivers one-third the weapon's base damage as stun damage (normally 2d6 for a 40mm grenade).

Bomblets: Bomblets are antipersonnel weapons able to be delivered by artillery weapons of Medium calibre and above. They are only available for use with artillery, mortars, rockets and Tac missiles. They are scattered above the target to rain down within an area equal to double the weapon's normal burst radius. Anything in the (doubled) primary radius receives an area attack for the weapon's normal damage. Anything in the (doubled) secondary radius is attacked for half damage.

Canister: Also representing beehive, grapeshot and flechette ammunition for artillery weapons, canister is used for close-range defence against enemy infantry and is the artillery version of a multiple projectile round for a grenade launcher. It effectively turns the gun (canister cannot be used with rockets, missiles or mortars) into a giant shotgun. The projectiles have a base range equal to five times the burst radius of the weapon. Within this distance they deliver an Area Fire attack against all targets. Anyone on a line from the gun's muzzle to the aim point, or within the weapon's burst radius each side of it, is subject to this attack. If hit they suffer the weapon's base damage.

Electromagnetic Pulse: EMP rounds cause a massive flare of electromagnetic radiation which will not harm personnel but will cause unshielded electronics to shut down for 1d6 minutes – some systems may be 'fried' by heating caused by electromagnetic induction. EMP will also briefly 'white out' many forms of sensors and can flood the airwaves with static.

Electronics Destruction

TL	Type	Electronics destroyed
5	Civilian	8+
5	Military	9+
6-7	Civilian	5+
6-7	Military	6+
8-9	Civilian	6+
8-9	Military	7+
10-11 ¹	Civilian	9+
10-11 ¹	Military	10+

¹ For every TL a system is above 11 the target number is increased by one.

Low tech technology is significantly more robust than later Tech Levels, making them far more resistant to damage from an EMP pulse. Shielded electronics apply a -3 DM to the roll to see if the electronic system is destroyed.

Extended Range: Extended Range (or ER) rounds use a rocket boost to increase their velocity and therefore effective range. This increases range by 25% but takes up payload space. Damage and burst radius are both halved. ER ammunition can be combined with most other special features but only for indirect fire rounds. It thus cannot be used with AP, APDS, solid shot, canister and so forth.

Flashbang/Concussion: Used for training purposes and as a distraction in a close assault, flashbangs are non-lethal grenades that burst with a loud noise and a bright flash. They are intended to stun opponents for a moment to gain an advantage. An alternative version, which has little flash but an impressive noise, is referred to as a Concussion grenade. The effects of both are similar. Anyone within the primary radius of a flashbang, who is not in sealed armour or protected by an intervening wall, is subject to a stun attack with a value equal to one-quarter (round down) of the weapon's base damage. The effects last for 2d6 rounds. There is no secondary radius of effect. Thus if (for some reason) a 200mm gun delivered a flashbang round, anyone within 11m would be subjected to a 4d6 Stun attack.

Flechette/Fragmentation: This is the standard anti-personnel warhead, inflicting the weapon's listed base damage against any targets within the primary blast radius and half that to targets within its secondary radius. Example: a hand-thrown frag grenade lands 4m from a soldier who is caught in the open. He is in the secondary radius so he takes half damage (half of 5d6 is 2d6; partial dice are dropped). Armour protection is doubled against frag/flechetttes rounds.

Fuel/Air: Fuel-air warheads can only be used by weapons of Heavy class or above. A fuel-air weapon dispenses a cloud of highly flammable droplets which are then ignited once they have mixed with air (this only works on worlds with an oxygen environment). The resulting airborne explosion has been compared to a nuclear detonation. Multiply the weapon's primary and secondary burst radii by 10 and 20 respectively. Damage within the primary radius is multiplied by 2 and is normal within the secondary radius.

Example: Hostile forces detonate a 240mm fuel-air warhead. The primary burst radius is 110m and secondary radius is 220m beyond that (damage occurs out to 330 m). Damage is 32d6 to anyone in the primary radius and 16d6 within the secondary.

Gas: Gas rounds will fill a radius equal to the weapon's primary and secondary burst radius (for example 3m + 3m = 6m for a hand grenade) with gas. Anyone within this radius may be affected unless they are wearing a suitable mask or other protective equipment. The cloud will persist for 1d6+6 rounds (halved in windy conditions). Typical gas payloads are tranquilliser, tear gas or nerve agents, though the latter are strictly controlled.

Guided: Some warheads can be either guided by the operator ('command guided') or fitted with self-homing capability ('smart'). Normally guidance is only possible with missiles of any size plus projectiles fired from guns, mortars and howitzers of 100mm (Medium) calibre and above.

Rules for guided weapons are found in chapter 1 of this book. Command-guided weapons use the operator's skill to determine a hit. Smart (self-guiding) weapons hit on a roll of 8+, modified by advanced guidance systems.

Fitting a command-guidance system to a weapon multiplies the cost by 5. This is available from TL 6 onwards.
 Fitting a smart (self) guidance system to a weapon multiplies the cost by 10. This is possible from TL 8 onwards.
 At TL 10 'brilliant' guidance systems can replace 'smart', granting a +2 DM to hit. Cost is x15 instead of x10.
 At TL 12 'genius' guidance systems can replace 'smart' ones, granting a +4 DM to hit. Cost is x20 rather than x10.

High Explosive (HE): The basic artillery warhead, HE is mainly used against infantry and light structures. HE warheads are the baseline for rating artillery weapons. Injury is largely caused by fragments of the casing and secondary objects thrown about by the explosion, in addition to blast effects. Armour protection is doubled against HE rounds (they are ST weapons) except in the case of a direct hit.

High Explosive Armour Piercing (HEAP): High Explosive Armour Piercing warheads are a special type available only for launched (not hand thrown) grenades, rockets and missiles. Larger weapons use Shaped Charge warheads instead. HEAP grenades have a reduced blast effect, so both primary and secondary blast radius is halved. Targets suffering a direct hit are subjected to a Full-AP attack for weapon's base damage. Anyone within the primary blast radius will take half the weapon's base damage. There is no effect in the secondary radius.

Hypervelocity: Hypervelocity rounds can only be used in direct fire from hypervelocity weapons (usually guns, sometimes missiles). They are by definition anti-armour weapons and tend to be of much smaller calibre than the equivalent conventional piece (a Light artillery piece might be 100mm whereas a Light hypervelocity gun may be only 10mm in bore and still achieve a similar effect). Hypervelocity weapons inflict damage only on a direct hit. They do the weapon's base damage with Ultimate-AP effects, ignoring a number of points of armour equal to five times the damage done by the weapon.

Illuminating/Flare: Illuminating rounds are designed to shed light over an area. Artillery and grenade launcher flares are designed to be fired into the air and descend on a parachute (this is only useful where there is an atmosphere). Hand flare grenades are thrown or placed on the ground. The light created by such means is brighter than daylight but it is harsh and casts stark shadows which can confuse the eye.

Treat a scene lit by an overhead flare as normal daylight and one lit by ground flares as twilight. Thermal and light-intensification equipment is designed to cut out and protect the user's sight, so these grenades cannot be used to blind the enemy, though they will make advanced sighting gear less useful and thus level the playing field for those without it. Flare rounds do burn and will cause fires in flammable material. Anyone within 1m of a burning flare will take 1d6 damage per round unless wearing sealed armour (including vacc suits).

Incendiary: Incendiary warheads are designed to set fire to things. They burn very hotly for 10 to 120 seconds and will cause flammable material close by to catch fire. The incendiary effect has no effect on hardened structures like bunkers or the outer hull of an armoured vehicle or starship but will damage the internal components of such a vehicle if it is set off inside. Damage is full for items in contact, equal to the half weapon's base damage (flame) per round within the primary radius and quarter base damage per round within the secondary radius.

Micronuke: Micronukes are not normally available on the open market. They can be fired from weapons of Medium size or bigger. Primary Burst radius is multiplied by 200 and secondary burst radius by 500. Anything in the primary radius is destroyed. Anything in the secondary radius is irradiated and smashed up pretty good.

Larger nuclear warheads are even more destructive. Precise rules for nuclear munitions seem unnecessary – if people are firing nukes at one another in close proximity to the travellers, they really need to be elsewhere.

Multiple Projectile: Multiple Projectile grenades are only available for tube-type grenade launchers. They are, in effect, a giant shotgun shell used for riot work and room clearance. The projectiles are considered to be a shotgun-type attack. Damage is equal to the weapon's base damage, dropping by 1d6 per full 2m the target is from the weapon. A multiple projectile grenade has a cone effect. Targets directly in front of the grenade are attacked with a +2 DM to hit. Anyone within 1m of a target which is hit may be subject to a secondary attack. Roll to hit with a -2 DM; damage is 2d6 less than in the primary attack zone. The secondary zone is dangerous out to 10 m, after which the projectiles are too dispersed to seriously harm anything.

Plasma: Plasma warheads are an advanced version of high explosive – area effect weapons for use against soft targets. Burst radii are doubled for plasma warheads and damage is multiplied by 3. Plasma explosives of this sort are still ST weapons except on a direct hit.

Plasma, Directed: Directed Plasma warheads are an advanced version of shaped charge weapons (see below) intended to attack hard targets. Directed Plasma rounds deliver double the warhead's base damage on a direct hit and are considered to be Mega-AP weapons. They have no secondary burst radius and do half damage within the primary radius, counting as ST weapons with in this radius.

Roundshot: Roundshot is the name for the spherical iron or stone projectiles fired from primitive cannon. Roundshot only causes damage on a direct hit, doing the weapon's base damage for the weapon type. Direct hits by shells that do not detonate for some reason can be considered to be roundshot (exception: grenades of all types do not move fast enough to qualify for increased damage. RAM and launcher grenades do full damage, whilst hand-thrown grenades are treated as moderately sized rocks).

Example: Enemy troops burst from the trees, charging at an artillery position delivering leaflet-loaded propaganda shells. The gunners let fly over open sights and one of the enemy is struck by a 100mm (Light) artillery roundshot attack. The enemy soldier takes 9d6 damage. His flak jacket seems fairly irrelevant at this point. Propaganda can be a powerful weapon, it seems...

Shaped Charge: Intended for breaching bunkers and destroying armoured vehicles, shaped charge warheads have a fairly small blast radius but do impressive damage on contact. A warhead using a shaped charge has no secondary area of effect and does half damage against anything in the primary area of effect. Against contact targets it is considered to do base damage with a Super-AP effect. Shaped Charges have various specialist names such as

HESH (High Explosive Squash Head) or HEAT (High Explosive Anti-Tank). Example: A 60mm gun is being used with shaped-charge ammunition in direct-fire mode against enemy personnel in battle dress. Base damage is 7d6 for HE ammunition from a Light piece of this sort. If it somehow scores a direct hit on someone, the gun will do 7d6 damage after ignoring 14 points of armour. – enough to kill most people. Of course, hitting someone is the trick. A close miss will do just 3d6 damage.

Shaped Charge, Advanced (ASC): A higher tech version of the standard shaped charge, an ASC does no extra damage but has much better penetration. Damage on a direct hit is normal for the weapon type but subject to an Ultra-AP effect.

Smoke: Smoke rounds release a thick cloud of smoke rapidly engulfing an area equal to four times the weapon's burst radius, reducing visibility down to half a metre. This gives everyone in the cloud excellent concealment but, of course, will not protect against stray shots. The cloud will persist for 1d6+6 rounds (halved in windy conditions) if delivered by a grenade and ten times as long if delivered by artillery. Lasers do not work at all through smoke.

Smoke (Thermal): Smoke rounds obscure the visible spectrum and block lasers but do not help much against electronic sensors. Thermal smoke contains hot particles that make it quite unpleasant for unprotected troops to move through but has the advantage that it blocks thermal sensing. It otherwise functions as standard smoke.

Smoke (Multispectral): Multispectral smoke contains metallic fragments as well as hot particles, creating a barrier to radar and similar sensors as well as thermal and optical instruments. It otherwise functions as standard smoke.

Solid Shot: A basic anti-armour round, solid shot is essentially a pointed projectile of some dense or very hard material. It causes damage on a direct hit only, in which case damage is base for the weapon type with a semi-AP effect.

Plastic Explosive: Plastic explosive may be moulded and shaped allowing the user to direct and control to a fair degree the force of the blast. It cannot easily be used as a grenade but one could be improvised. Plastic Explosive is normally used in demolition work.

TDX: A gravitationally polarized explosive. Unlike conventional explosives, TDX expends its energy only along the horizontal plane of the blast. For example, a TDX explosive set 1 metre off the ground would inflict its damage on anything within its blast radius which is also at a height of 1 metre. Objects above or below this level would not be affected. Because of this effect, TDX is quite useful for tasks such as felling trees, cutting the supports of a bridge or trestle and so on. It is not normally used in artillery warheads but some specialist applications do exist.

Grenades and Rifle Grenades

Grenades are normally thrown by hand. Rifle grenades are designed to be launched from a fitting on a rifle, though specialist weapons designed to launch rifle grenades do exist. Hand and rifle grenades are very different and cannot be interchanged, though they do the same job.

Hand Grenades

The majority of grenades are hand-thrown and weigh 0.5 kg each. At lower Tech Levels (up to 9) they are mechanically fused. The normal mode of operation is to have a dual trigger. The user removes a safety pin, holding down a spring-loaded lever or "spoon" while the grenade is held. Once it is thrown, the lever is no longer held in place and the fuse (normally 2-5 seconds) is initiated. After the preset delay, the grenade bursts or ignites. Pins can be reinserted, making the grenade safe, so long as the lever has not been released.

At TL 9 and above, electronic fusing is standard. This electronic version of the pin and fuse allows grenades to be set for a time delay between 1-10 seconds after throwing. Again, a spring-loaded lever is normally used to prevent accidental discharges. A more sophisticated Multimode Fusing System is available, which grants extra capabilities at the price of doubling cost and increasing the accident rate under combat conditions somewhat.

With MFS, a grenade can be set for timed delay, or to explode on impact (there is a short "arming" distance in case the grenade is dropped but this is not 100% reliable). Impact fusing can be very hazardous to the user. Long-delay timed fusing is also possible, as is "trembler" fusing, which allows a primed grenade to be left behind as a booby trap, to detonate if it is disturbed. Finally, MFS grenades can be part of a remote-controlled defensive system, detonated at will from a central command position.

Launched Grenades

Grenades fired from a launcher are sent on their way by a charge in the same manner as a bullet. After firing they are unpowered and unguided, travelling in a high arc to drop onto the target. Grenade launchers can be standalone weapons, fitted under a rifle, or even belt-fed support weapons. Launched grenades have a minimum safe distance of 10 metres, within which they will not arm. The unarmed grenade is still a heavy object moving fast and will do 2d6 damage to anyone stuck by it. The projectiles fired from the Infantry Recoilless can be considered to be launched grenades, though their trajectory is more direct. Grenades designed to be launched in this manner include all types listed below. Launcher grenades usually weigh 0.5 kg.

Rocket-Assisted Multipurpose (RAM) and Rifle Grenades

RAM grenades have a built-in booster system, which ignites upon firing, vastly increasing the velocity (and thus the range) of the round. RAM grenades may be fired from a variety of launchers. These include

rather basic weapons which are little more than a tube and a handgrip, with a crude sighting system. Belt- and magazine-fed automatic grenade launchers are also quite common. In addition, RAM grenade launchers can be mounted on the ACR. and the gauss rifle.

Rifle grenades are available at lower Tech Levels. They are typically launched from the end of a standard combat rifle by firing a bullet into the base. Both types can be considered to be functionally similar; they carry the same warhead whatever the delivery system.

Table: Grenades

The table lists the characteristics and effects of all common RAM, launcher and hand grenades.

Type	Range	Cost Each (Cr.)	Burst Radius (m)	Base Damage	Comments
Thrown	50 m	x1	3	By type	
Launched	200 m	x2	4	By type	
RAM	500 m	x3	4	By type	
Aerosol		100		Special	
Baton/Stunbag		25		Special	
Dynamite		75		4d6/2d6	Commercial explosive
EMP		100			
Flashbang/Stun		150		3d6 Stun	
Fragmentation		150		5d6/3d6/1d6	
Gas, Nerve		750		Nerve Poison	
Gas, Poison		400		Poison	
Gas, Tear		75		Special	
Gas, Tranq		100		Special	
High Explosive		200		6d6/4d6/2d6	
HEAP		150*	Contact	6d6 AP	Launcher or RAM only
Illuminating/Flare		25		1d6 (Flame)	
Incendiary		30		3d6 (Flame) in contact 1d6 (flame) within burst radius	
Multiple Projectile		80*	Contact	6d6	Launcher or RAM only
Plasma		50		5d6	
Smoke		75		Special	
Smoke (Thermal)		125		Special	
Smoke (Multispectral)		250		Special	

- Costs for HEAP and Multiple Projectile grenades do not include the multiplier for launcher or RAM type, even though these grenades are not available in hand-thrown configurations.
- Where damage is indicated as several values separated by a slash, this is the damage at each multiple of the blast radius. Thus a fragmentation grenade delivers 5d6 damage at 1-3m, 3d6 at 4-6m and 1d6 at 7-9m.
- Incendiary grenades will set fire to anything flammable within 3m; the area will be on fire for 2d6 minutes after the grenade goes out, inflicting 2d6 (flame) damage on anyone entering the area.

Explosives

The Explosives skill is used with explosives – the Effect of the Explosives skill check multiplies the damage. Blast radius is determined randomly when an explosive device is set off.

Plastic: This generic, multi-purpose plastic explosive is a favourite of military units, terrorists, demolition teams and adventurers across known space. Plastic explosive is very safe to handle and set up – it cannot be set off by heat or by being dropped. Not even a bullet impact will initiate it. A proper detonator, or another explosion, is needed. A HE or HEAP round will also do the trick.

Breaching Charge: A small pre-packed shaped charge for cutting or breaching. Charges are self-adhesive and can be set on a timer or command detonated.

Complex Chemical: When these two chemical polymers are combined physically, normally through a timed mechanical device, they react explosively. There is always a 1d6-2 action delay from when the chemical chain is formed before it explodes but the resulting chemical detonation is very powerful and concentrated.

TDX: An advanced gravity-polarised explosive, TDX explodes only along the horizontal axis. This makes it useful for cutting.

Pocket Nuke: Hideously illegal on many worlds, the pocket nuke is actually the size of a briefcase. It is too large to fit into a grenade launcher; pocket nukes are normally (if the word ‘normally’ can be applied to the use of nuclear weapons) deployed as demolition charges or booby traps on a gigantic scale. Anything within Medium range of the edge of a pocket nuke explosion suffers 1d6 x 10 rads unless shielded.

Fusion Block: A dense and expensive material formed into a one kilogram cube and fitted with a chemi-pressure trigger, a fusion block is a shaped explosion of fusion energy. The explosion is extremely powerful and does not pause for most physical matter, sublimating it into gas almost instantly. Anything within Short range of the edge of a fusion block explosion suffers 2d6 x 10 rads unless shielded.

Neutrino Detonator: A complex device about the size of a laptop computer, the neutrino detonator uses a complex formula to create a powerful explosion of sorts that sends a wave of overlapping neutrinos through all matter surrounding it. This wave causes breaks and flickers in the bonds that hold matter together; something that has little direct effect on inorganic substances, which just return to their former state instantly. Organic matter however, is heavily damaged and suffers major cellular damage. This explosion ignores all inorganic substances (walls, doors, armour and so on), inflicting its damage on all organic substances within the area of effect.

Explosives

Weapon	TL	Damage	Radius	Cost
Plastique	6	3d6	2d6 metres	Cr. 200
Breaching Charge	8	4d6 AP	Contact	Cr. 100
Complex Chemical	10	4d6 Super AP	3d6 metres	Cr. 500
TDX	12	4d6	4d6 metres	Cr. 1,000
Pocket Nuke	12	10d6	15d6 metres	Cr. 20,000
Plasma Core	14	12d6	3d6 metres	Cr. 5,000
Fusion Block	16	14d6 Super AP	1d6 metres	Cr. 10,000
Neutrino Detonator	17	8d6, ignores inorganic material	2d6 x 10 metres	Cr. 50,000

Bombs, Missile Warheads and Shells

Tac missiles, light artillery pieces and mortars deliver similar warheads to grenades, only larger. Missiles (and at higher Tech Levels, some artillery shells) are guided in various ways: operator-guidance, heat-seeking and radar-seeking are common. Some are designed to home in on the spot "painted" by a laser designator, which can allow the missile to be launched on an indirect trajectory and to then receive targeting information while in flight. At higher Tech Levels, multimode target seeking is common, where the missile uses more than one seeker mode to improve accuracy and resistance to countermeasures.

Launchers and Missiles

All weapons in this section require the Heavy Weapons (Launchers) skill to use properly, with the exception of rifle-mounted grenade launchers, which can also be used with Gun Combat (Slug Rifle) skill by military-trained individuals (use of the launcher is considered to be part of their training with the rifle). Grenades fired from launchers (even under-barrel ones fitted to a rifle) are different to rifle and hand grenades.

Grenades of all types are rated as either hand or launched grenades and are roughly equivalent in performance. Launchers are rated in the same way as artillery weapons but have much shorter ranges. Launchers are ineffective beyond 1km or so.

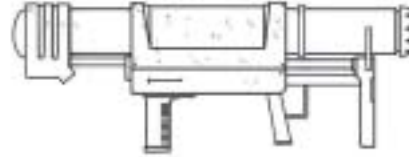
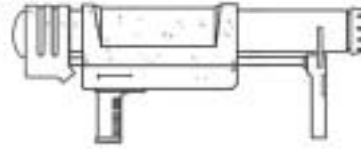
Disposable Launcher, Light (TL 6): A lightweight, self-contained, non-reusable weapon that launches a small (60mm or so) rocket. Disposable Launchers are designed to fire HEAP warheads only and are rated as Extremely Light artillery weapons. They are also known as Light Antitank Weapons (LAW) or Light Anti-Armour Weapons (LAAW).

Reusable Launcher, Light (TL 6): A lightweight, reusable firing platform that launches a small (60mm or so) rocket. Reusable Launchers are designed to fire HEAP warheads only and are rated as Extremely Light artillery weapons.

Disposable Launcher, Medium (TL 7): A self-contained, non-reusable weapon that launches a fairly large (90mm or so) rocket. The Medium launcher is rated as a Very Light artillery weapon. Disposable Launchers are designed to fire HEAP warheads only. They are also known as Light Antitank Weapons (LAW) or Light Anti-Armour Weapons (LAAW).

Reusable Launcher, Medium (TL 7): A reusable firing platform weapon that launches a fairly large (90mm or so) rocket. The Medium launcher is rated as a Very Light artillery weapon. Reusable Launchers are designed to fire HEAP warheads only.

Disposable Launcher, Medium, Incendiary (TL 7): A self-contained, disposable weapon that launches a fairly large (90mm or so) rocket-propelled incendiary warhead. The Medium incendiary launcher is rated as a Very Light artillery weapon.



Grenade Launcher (TL 7): A grenade launcher allows users to lob grenades of typically 30-40mm calibre over ranges far exceeding normal throwing distance. Grenade launchers rely on the destructive power of the warhead alone, as there is little kinetic energy behind their attack. Grenade launchers may be fired once per round and require a full action to reload. A grenade launcher may fire any type of grenade out to a maximum distance of 500 metres.

Rifle-Mounted Grenade Launcher (TL 7): A grenade launcher may be attached to an assault rifle for the cost of the assault rifle and the grenade launcher plus an additional Cr. 50. Grenade Launchers can be fitted under the barrel of certain rifles. Damage: as per any Grenade type. Base 6D for HE/Fragmentation.

Riot Cannon (TL 7): A paramilitary version of the thud gun, fed by a 3-round magazine, the riot cannon is normally used by law enforcement units to deploy tear gas grenades but can also fire flechette ammunition which does 3d6 damage. Armour protection is doubled against the flechettes.

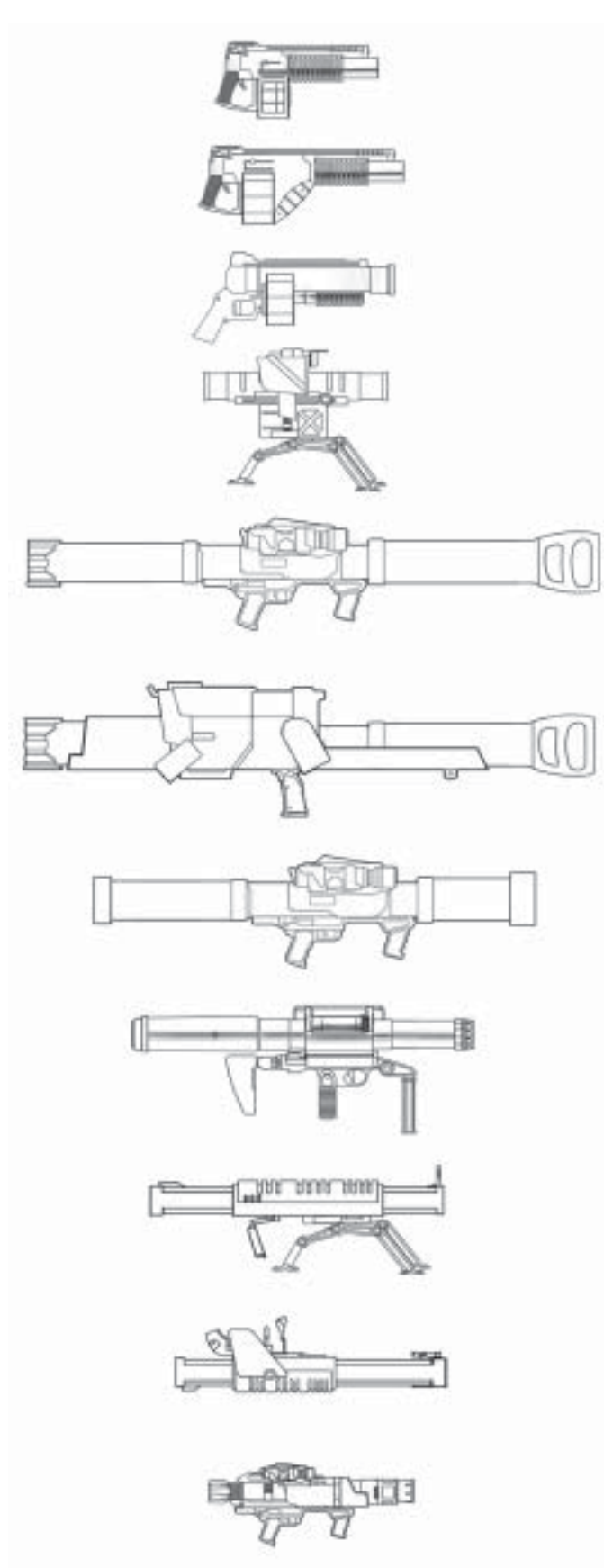
Disposable Launcher, Heavy (TL 8): A self-contained, disposable, weapon launching a large (110mm or so) rocket. The Heavy launcher is rated as a Light artillery weapon. Disposable Launchers are designed to fire HEAP warheads only. They are also known as Light Antitank Weapons (LAW) or Light Anti-Armour Weapons (LAAW).

Reusable Launcher, Heavy (TL 8): A reusable firing platform that launches a large (110mm or so) rocket. The Heavy launcher is the 'big game hunter' of infantry anti-armour weapons and is rated as a Light artillery weapon. Reusable Launchers are designed to fire HEAP warheads only. This weapon has an additional 'magazine' containing a second rocket, allowing for two rockets to be fired in rapid succession.

RAM Grenade Launcher (TL 8): Designed to fire RAM (Rocket-Assisted Multipurpose) grenades at targets as far away as 500 metres, the RAM launcher is a 3-round, magazine-fed grenade launcher. It can deliver any standard RAM grenade. The launcher is semi-automatic and can be fired once per combat round.

RAM Auto-Grenade Launcher (TL 8): A larger version of the standard RAM grenade launcher fed by a 6-round magazine. The weapon may fire single shots or an auto attack comprising a burst of three grenades.

RAM Rifle-Mounted Grenade Launcher (TL 8): A RAM grenade launcher may be attached to an assault rifle for the cost of the assault rifle plus an additional Cr. 1,000. RAM Grenade Launchers can be fitted under the barrel of some of the other rifles as well. Damage: as per any Grenade type. Base 6D for HE/Fragmentation.



RAM Support Grenade Launcher (TL 8): A tripod or vehicle mounted grenade launcher fed from a 20-round boxed belt weighing 9 kg, the RAM AGL fires single shots, 3-round bursts or can deliver autofire. It can have two belts connected at once and can switch between them at will, though any given burst must come from one belt to the other.

Disposable Launcher, Heavy, Improved (TL 9): A bigger and better version of the heavy disposable launcher, firing a more advanced warhead rated as a shaped charge (Super-AP) rather than a HEAP warhead.

Reusable Launcher, Heavy, Improved (TL 9): A bigger and better version of the heavy reusable launcher, firing a more advanced warhead rated as a shaped charge (Super-AP) rather than a HEAP warhead. This weapon has an additional 'magazine' containing a second rocket, allowing for two rockets to be fired in rapid succession.

Disposable Launcher, Medium, Advanced (TL 10): A greatly improved medium launcher firing an advanced conventional warhead rated as an Advanced Shaped Charge (Ultra-AP) weapon.

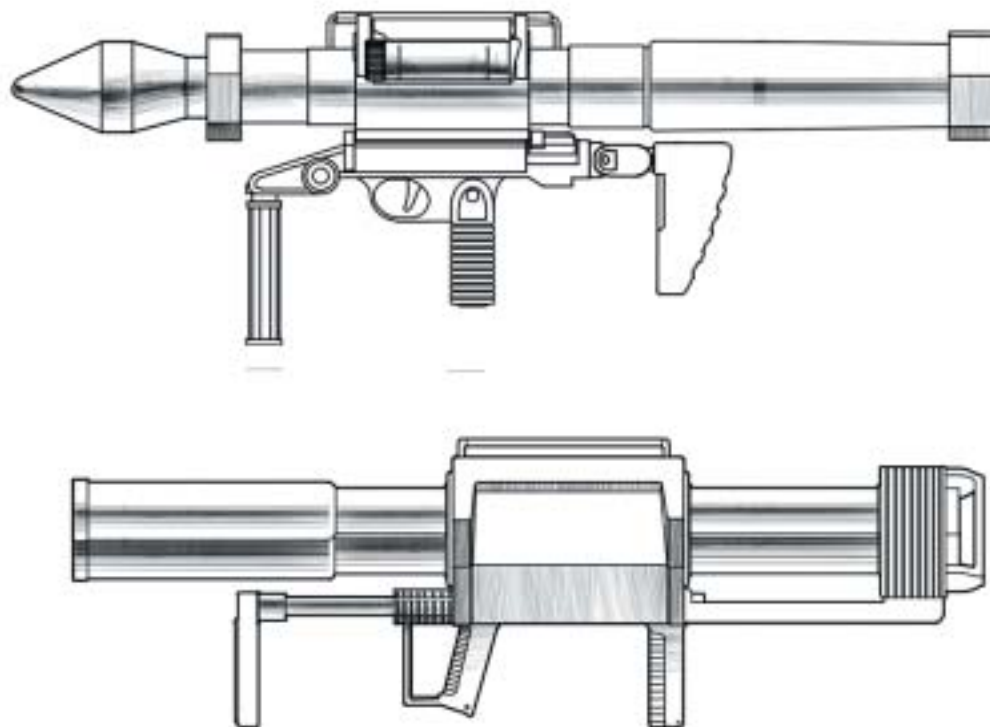
Disposable Guided Launcher (TL 8): Similar to the standard light medium and heavy disposable launchers, the guided launcher uses a missile with multimode tracking, capable of attacking armour or aircraft. It is a smart "fire-and-forget" weapon, self-homing on the

target after launch. Guided versions become available at TL 8 and cost four times as much as the standard model.

Light Tac Launcher (TL 10): (Cr. 15,000, 22 kg) A tripod-mounted support weapon capable of firing battlefield tactical (Tac) missiles. Tac launchers use a variety of missiles including anti-armour, explosive and anti-aircraft warheads. Some versions have a small nuclear warhead, though the use of such munitions is rather rare. Light Tac missiles are Light artillery weapons, with a base damage of 9d6.

Wrist-mounted Warhead Launcher (TL 12): Using a new advanced form of muscle-memory firing trigger, this forearm-mounted apparatus can be loaded with four individual miniature versions of standard Tac missiles. By flexing the wearer's arm in a specific fashion, the next missile in the queue fires. Reloading the launcher requires two Significant actions per missile and the loader must note in which order the missiles are to be fired.

Disposable Launcher, Plasma (TL 12): A self-contained, disposable, weapon launching an 80mm rocket-propelled directed plasma warhead. The plasma launcher is a deadly weapon able to destroy even high-technology armoured vehicles. It is a favoured import with mid-tech forces that need a deterrent against higher tech foes. The Plasma launcher is rated as a Very Light artillery weapon firing directed plasma warheads. It is sometimes designated Light Anti-Armour Weapon (Plasma), or PLAAW.



SUPPORT AND ARTILLERY WEAPONS

Weapon	TL	Range	Damage	Magazine	Auto	Recoil	Cost (Cr.)	Mass (Kg)
Light Disposable Launcher	6	Rocket	7d6 AP	1	No	0	200	6
Light Reusable Launcher	6	Rocket	7d6 AP	1	No	0	2,000	8
Medium Disposable Launcher	7	Rocket	8d6 AP	1	No	0	350	9
Medium Reusable Launcher	7	Rocket	8d6+4 AP	1	No	0	2,000	8
Medium Incendiary Disposable Launcher	7	Rocket	4d6 Flame	1	No	0	300	7
Grenade Launcher	7	Shotgun	By Warhead	1	No	1	400	6
Rifle-Mounted Grenade Launcher	7	Shotgun	By Warhead	1	No	1	500	2 + mass of rifle
Riot Cannon	7	Shotgun	By Warhead or 6d3 (Flechette)	3	No	2	1,000	6
Heavy Disposable Launcher	8	Rocket	9d6 AP	1	No	1	500	13
Heavy Reusable Launcher	8	Rocket	9d6 AP	2	No	0	2,000	8
RAM Grenade Launcher	8	Assault Weapon	By Warhead	3	No	1	400	2
RAM Auto Grenade Launcher	8	Assault Weapon	By Warhead	6	6	1	400	2
RAM Rifle-Mounted Grenade Launcher	8	Assault Weapon	By Warhead	1	No	1	1,000	2 + mass of rifle
RAM Support Grenade Launcher	8	Assault Weapon	By Warhead	20	No	1	2,000	16
Guided Disposable Launcher	8	Rocket	By Warhead	—	—	—	x4	—
Improved Heavy Disposable Launcher	9	Rocket	9d6 Super-AP	1	No	1	600	13
Improved Heavy Reusable Launcher	9	Rocket	9d6+5 AP	2	No	0	2,000	8
Advanced Medium Disposable Launcher	10	Rocket	8d6 Ultra-AP	1	No	1	500	13
Wrist-mounted Warhead Launcher	12	Assault Weapon	7d6 Super AP	4	No	2	1,500	2
Plasma Disposable Launcher	12	Rocket	8d6 Mega-AP	1	No	1	800	8

Light Tactical Missiles

Tactical (Tac) Missiles see extensive use on the battlefield as soon as they become available. Although they are expensive, the benefits of guidance are such they become a necessity for most users. Some Tac missiles are fire-and-forget weapons that self-guide once they are launched (but need to be given a good target lock by the operator before launch) and some require constant guidance by the operator. In the former case, Tac missiles are treated as standard Smart weapons, hitting on 8+. In the latter case they are guided using the operator's Heavy Weapons (Launchers) skill.

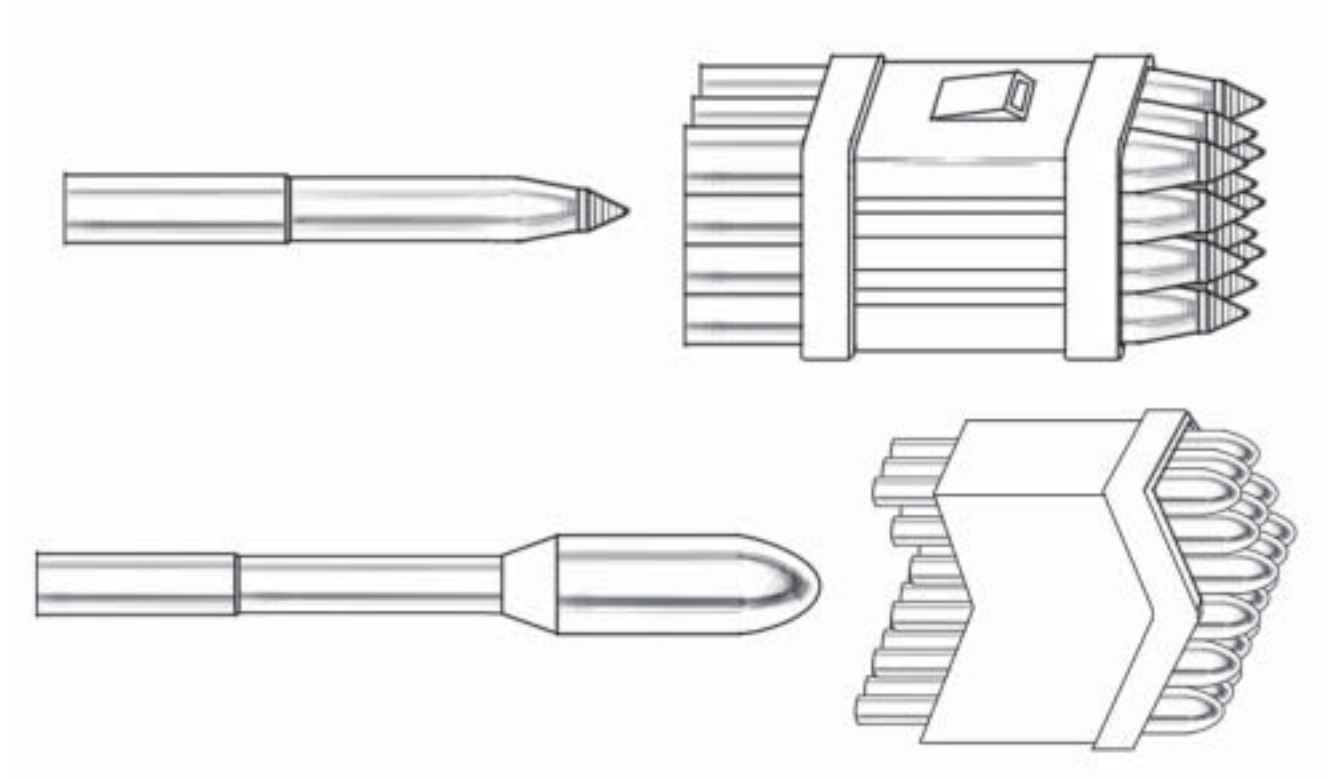
The following selection of light Tac missiles is by no means exhaustive. Almost any warhead and guidance system can be combined as needed. The cost of a basic 'Smart' guidance system is included in the price of the missile but more advanced guidance can be added at increased cost. Light Tac missiles are rated as Light artillery weapons.

Tac Missile, Anti-Air, Light (TL 9): A light missile optimised for tracking and intercepting airborne threats, including grav vehicles, this missile can be fired from a vehicle, ground or shoulder launcher. Its HE/fragmentation warhead has a modest performance but can deliver significant damage on a solid hit.

Tac Missile, Anti-Armour, Light (TL 9): (Cr. 4,000, 60 kg) A light missile optimised for tracking and intercepting vehicles, including low-flying grav vehicles, this missile can be fired from a vehicle, ground or shoulder launcher. Its shaped-charge warhead can penetrate most armour.

Tac Missile, Anti-Personnel, Light (TL 9): A cheap and light missile intended for attacking infantry positions. The normal warhead is a bomblet submunitions dispenser with software to allow it to deliver its payload as it passes over the target.

Warhead	Damage	Burst Radius (m)	Cost (Cr.)	Mass (Kg)
Anti-Air	9d6 (Fragmentation)	7	3,000	14
Anti-Armour	9d6 Super-AP Shaped Charge)	7	4,000	16
Anti-Personnel	9d6 (Fragmentation)	14	1,800	10



Direct-Fire Artillery Weapons

Various direct-fire weapons are available, ranging from medium and heavy autocannon to hypervelocity guns. These weapons are affected by gravity, of course but do not lob their projectiles in a high arc. A combination of impact and/or payload is used to deliver damage.

Direct-Fire artillery weapons can use most of the special ammunition types listed for artillery weapons. The default values damage given here are for whatever the weapon's standard antipersonnel ammunition may be – usually ball or light HE. Direct-fire weapons usually have a kinetic-energy, high-explosive or armour-piercing payload.

Field Cannon, 9lb (TL 3): A simple smoothbore black-powder cannon capable of delivering roundshot out to 1km or so without any real degree of accuracy (DM of -2 at all ranges unless firing canister). An explosive/fragmentation round (termed 'common shell') is available but it is expensive and unreliable. Roundshot is more commonly used. Within 150 m, canister rounds can be fired against enemy personnel. The Field Cannon is rated as a Light artillery weapon and requires a crew of 6 or so trained men plus several horses to move it around.

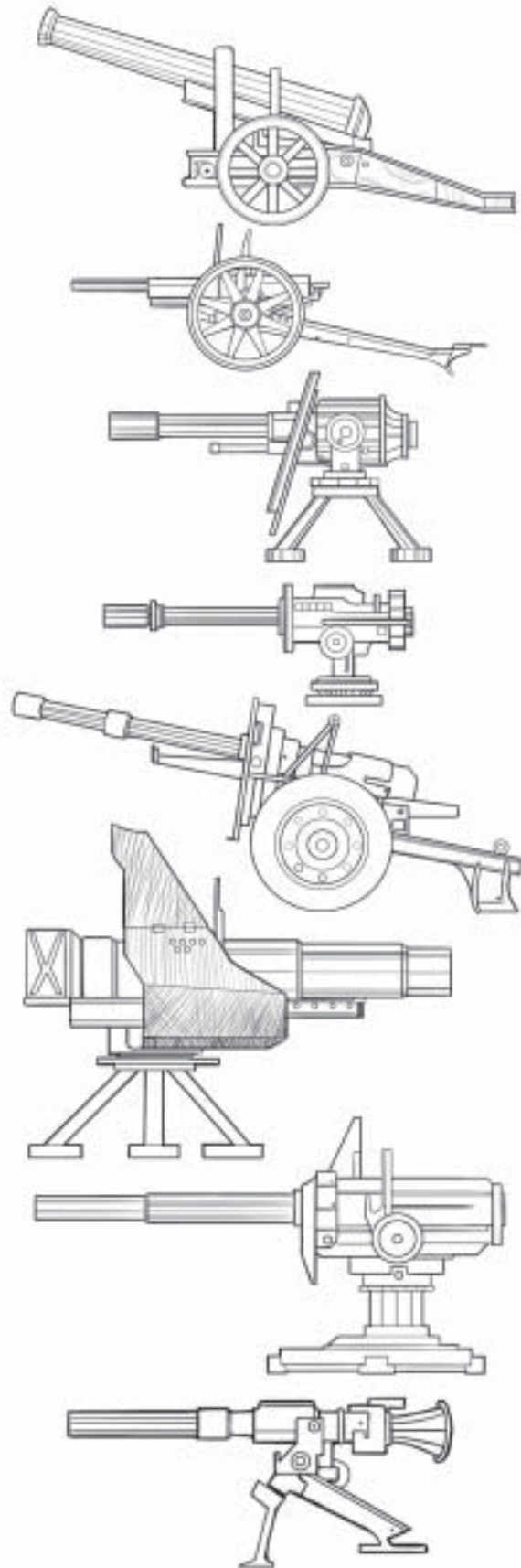
Field Gun, Rifled, 10 lb (TL 4): A rifled muzzle-loading cannon mounted on a horse-drawn carriage and requiring a crew of six or more men, a 'field rifle' is far more accurate than a smoothbore cannon and has an effective range of about 1.5km. It can deliver explosive shells as well as roundshot but the rifling causes unpredictable effects when firing canister.

Autocannon, Heavy (TL 6): A heavy (60-65mm) rapid-fire belt-fed weapon capable of engaging light armoured vehicles and aircraft. Heavy Autocannon are generally carried in vehicle mounts or aboard maritime vessels. They are too big and bulky to be used as mobile infantry support weapons, other than on a vehicular or towed mount.

Autocannon, Medium (TL 6): A medium-calibre (30-45mm) rapid-fire belt-fed weapon capable of engaging light armoured vehicles and aircraft. Autocannon are generally mounted on light armoured vehicles, aircraft, or in bunkers. They are too big and bulky to be used as mobile infantry support weapons, other than on a vehicular or towed mount.

Gun, Antitank, 60mm (TL 6): A towed antitank gun intended for the direct-fire role, this high-velocity 60mm gun normally fires solid Penetrator shot and is fairly effective against light armoured vehicles. A canister round is available for self-defence.

Gun, Demolition, 200mm (TL 6): A short barrelled petard weapon designed to deliver a large explosive charge over a short distance (150m maximum). The demolition gun is normally used aboard engineering or assault support vehicles, to demolish fortifications and flatten obstructions. It can only fire HE rounds.



Cannon, 75mm (TL 7): A light vehicle-mounted direct-fire weapon, the 75mm cannon is a Very Light artillery piece which normally fires Armour Piercing ammunition. Canister rounds for anti-personnel and HE for support work are also carried by most combat vehicles. This weapon can also be encountered as a towed anti-tank gun in some circumstances. Even when used aboard a vehicle, weapons of this sort are considered to be artillery and governed by the appropriate skill.

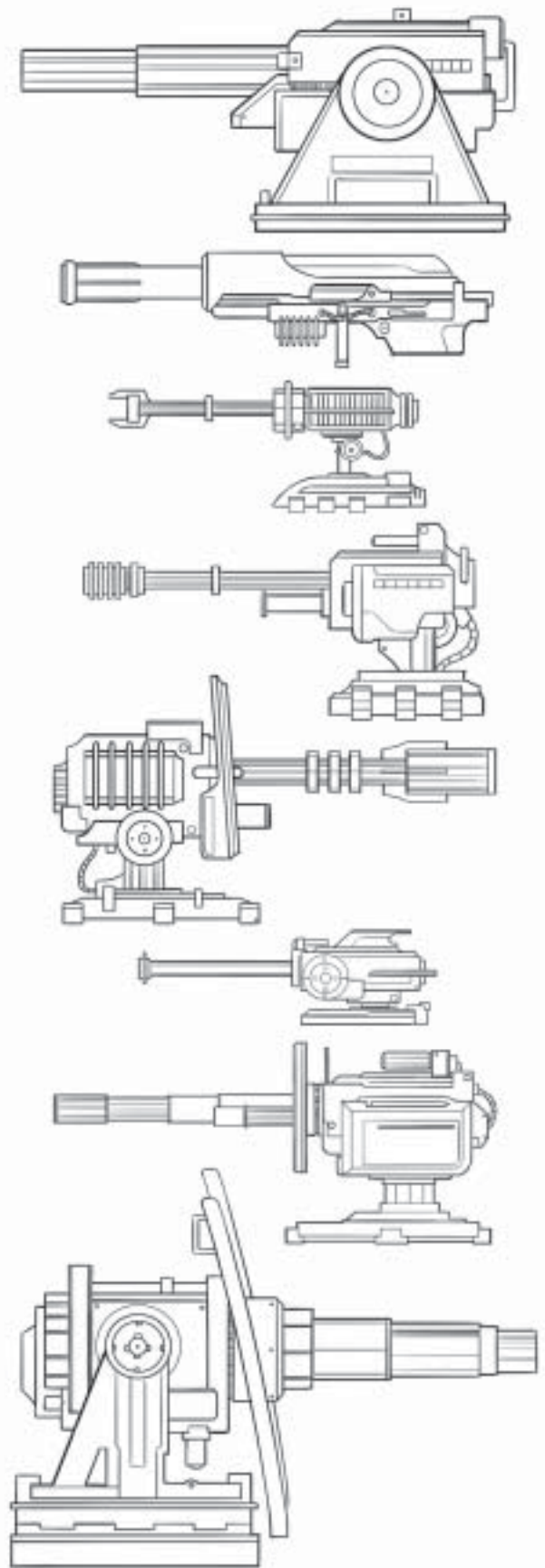
Support Weapon, Infantry, Recoilless (TL 7): A light support weapon capable of being carried by an infantry team or mounted on a light tripod, the Infantry Recoilless is a relatively large calibre weapon (80-110mm on average) but is rated as an Extremely Light artillery weapon. Its maximum range is 1km and muzzle velocity is rather low. The usual round is an antipersonnel HE warhead but shaped charge and other specialist ammunition is also available. It is listed here as it delivers artillery-type payloads.

Cannon, 120mm (TL 8): A main-calibre gun which arms many mid-tech armoured fighting vehicles, the 120mm cannon is a Medium artillery piece. It can fire HE for support work or APDS for anti-vehicle combat. Canister is rarely carried; tanks normally have support units to deal with infantry or use anti-personnel weapons for the purpose.

Rail Gun, Vehicular, 35mm (TL 9): A powerful vehicle-mounted cannon using relatively crude electromagnetic propulsion to fling a projectile in a flattish trajectory. Time of flight to the target is less than for conventional guns, making compensation for movement easier. All negative DMs for target or firer movement are reduced by 1. The projectile is a lump of dense metal which damages the target using kinetic energy. There is no area effect. Rail Gun projectiles are considered to be Ultra-AP weapons.

Cannon, Gauss, Light, 12mm (TL 12): A light vehicle-mounted weapon using more advanced electromagnetic ('gauss') propulsion to accelerate a metal dart to tremendous speed. Time of flight to the target is less than that of conventional guns, making compensation for movement easier. All negative DMs for target or firer movement are reduced by 1. The projectile is a lump of dense metal which damages the target using kinetic energy. There is no area effect. Ammunition is specific to this weapon and is already as good at penetrating armour as it can be (Mega-AP). Special ammunition types such as Discarding Sabot are not available. The light gauss cannon fires short bursts of darts.

Cannon, Gauss, Medium, 16mm (TL 12): A medium vehicle-mounted weapon sometimes also used for air defence. Time of flight to the target is less than for conventional guns, making compensation for movement easier. All negative DMs for target or firer movement are reduced by 1. The projectile is a lump of dense metal which damages the target using kinetic energy. There is no area effect. Ammunition is specific to this weapon and is already as good at penetrating armour as it can be (Mega-AP). Special ammunition types such as Discarding Sabot are not available. The medium gauss cannon also fires bursts of darts, though with a lower rate of fire than the light version.



Cannon, Gauss, Heavy, 22mm (TL 12): A powerful heavy gauss cannon. All negative DMs for target or firer movement are reduced by 1. The projectile is a lump of dense metal which damages the target using kinetic energy. There is no area effect. Ammunition is specific to this weapon and is already as good at penetrating armour as it can be (Mega-AP). Special ammunition types such as Discarding Sabot are not available. Heavy gauss cannon cannot fire bursts.

Cannon, Hypervelocity, Light, 5km (TL 13): A powerful vehicle-mounted weapon designed for use aboard vehicles and in emplacements. The hypervelocity cannon uses electromagnetic propulsion, much like a gauss weapon. Darts are fired singly and are treated as Ultimate-Armour-Piercing weapons. This weapon can use

only hypervelocity ammunition. All hypervelocity weapons reduce the negative DM from target or firer movement by 2.

Cannon, Heavy, Hypervelocity, 15mm (TL 13): A larger and more powerful hypervelocity cannon. This weapon has a range of 5km in ground combat but can attack a target in low orbit if it can elevate far enough. This extended range (100km) is only useful in direct fire at airborne or orbital targets; this weapon cannot lob its projectiles like a howitzer.

Cannon, Orbital Defence, Hypervelocity, 26mm (TL 14): A very large hypervelocity weapon firing Ultimate-AP Penetrator rounds to a maximum range of 5km if ground based or 1,000km if in orbit, using direct fire.

Weapon	TL	Range	Required Skill	Damage	Magazine	Auto	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
9lb Cannon	3	500 m	Heavy Weapons (Field Artillery)	9d6 (Roundshot)	1	No	2,600	150	3
10lb Rifled Cannon	3	1km	Heavy Weapons (Field Artillery)	10d6 (Roundshot)	1	No	4,500	175	4
60mm Antitank Gun	6	2km	Heavy Weapons (Field Artillery)	7d6 Super-AP	1	No	56,000	1,150	20
Medium Autocannon	6	1km	Heavy Weapons (Autocannon)	7d6 SAP (Ball) 8d6 (HE)	100	6	55,000	200	800
Heavy Autocannon	6	1km	Heavy Weapons (Autocannon)	8d6 SAP (Ball) 9d6 (HE)	100	6	95,000	600	1,000
200mm Demolition Gun	6	150 m	Heavy Weapons (Field Artillery)	16d6 (HE)	1	No	38,000	600	100
75km Cannon	7	2km	Heavy Weapons (Field Artillery)	8d6 Super-AP (Armour-Piercing)	1	No	160,000	1,500	45
Infantry Recoilless	7	1km	Heavy Weapons (Field Artillery)	7d6 (HE)	1	No	900	14	24
120mm Cannon	8	3km	Heavy Weapons (Field Artillery)	10d6 Super-AP	1	No	400,000	2,500	65
35km Rail Gun	9	4km	Heavy Weapons (Field Artillery)	12d6 Ultra-AP	1	No	1,000,000	7,000	30
12mm Light Gauss Cannon	12	3km	Heavy Weapons (Field Artillery)	10d6 Mega-AP	200	6	3,000,000	1,000	1,000
16mm Medium Gauss Cannon	12	4km	Heavy Weapons (Field Artillery)	12d6 Mega-AP	100	4	6,000,000	2,400	1,000
22mm Heavy Gauss Cannon	12	5km	Heavy Weapons (Field Artillery)	14d6 Mega-AP	40	No	10,000,000	4,600	800
5km Light Hypervelocity Cannon	13	5km	Heavy Weapons (Field Artillery)	16d6 Ultimate-AP	100	No	14,000,000	10,000	2,000
15km Heavy Hypervelocity Cannon	13	5km/ 100km	Heavy Weapons (Field Artillery)	18d6 Ultimate-AP	60	No	26,000,000	18,000	3,000
26mm Orbital Defence Cannon	14	5km/ 1,000km	Heavy Weapons (Field Artillery)	20d6 Ultimate-AP	20	No	40,000,000	35,000	8,000

Lasers and Energy Weapons

The following are all direct-fire weapons intended to support infantry or engage vehicles. They cannot use indirect fire. Range is in most cases only limited by line of sight and the attenuating effects of atmosphere. Lasers and other energy weapons reduce any negative DM for target or firer movement by -3.

Gatling Laser (TL 8): A basic and relatively low-powered, vehicle-mounted laser weapon. It uses several cryogenically cooled barrels fired in succession to deliver a fair amount of damage. Contemporary tube cannon are more effective in an anti-vehicle role and also cheaper, so the gatling laser is normally found as an air-defence weapon where the aiming advantages of lasers are most useful. Range in ground combat is limited to line of sight, often no more than a few kilometres. If shooting at aircraft and other targets above the horizon, the weapon's effective range is much greater.

Laser Cannon (TL 9): A single barrel laser main gun for vehicle mount, the laser cannon is the first really effective vehicle energy weapon. It consumes large amounts of power but is capable of damaging a light starship.

Plasma A Gun (TL 10): A fairly crude heavy plasma gun for vehicle mounting, A guns are encountered aboard grav vehicles and some aircraft. It is more a support weapon than a main anti-vehicle armament. Full damage is delivered to all targets within a 2.5m radius, with half damage to targets within 5m.

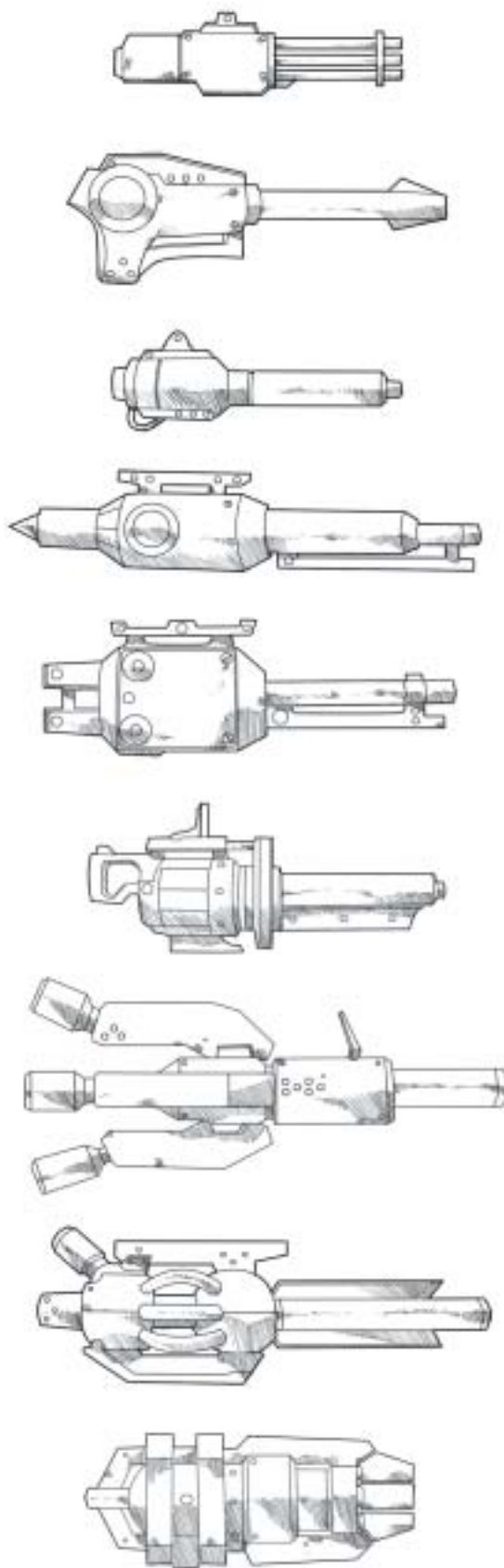
Plasma B Gun (TL 11): A more advanced heavy plasma gun for vehicle mounting, B guns are encountered as main armament aboard some vehicles. Damage: full in a 4m radius, with half damage to targets within 8m.

Plasma C Gun (TL 12): The most advanced heavy plasma gun available, C guns are encountered as main armament aboard combat vehicles or in fixed defensive positions. Damage: full in a 5m radius, with half damage to targets within 10m.

Fusion X Gun (TL 12): An early vehicle mounted fusion gun, the X-gun is primarily a battlefield support weapon rather than an anti-vehicle system, though everything is relative. Damage: full in a 6m radius, with half damage to targets within 12m.

Laser, Aerospace Defence (TL 12): A powerful laser weapon designed for emplaced or mobile aerospace defence, the ADL consumes immense power but delivers impressive damage. It is primarily intended to engage missiles and small craft but can shoot at starships, aircraft and grav vehicles equally well.

Fusion Y Gun (TL 13): A more advanced vehicle-mount fusion gun, the Y-gun is capable of destroying virtually anything. The fusion stream does immense damage to everything in its path. Damage: full in a 7.5m radius, with half damage to targets within 15m.

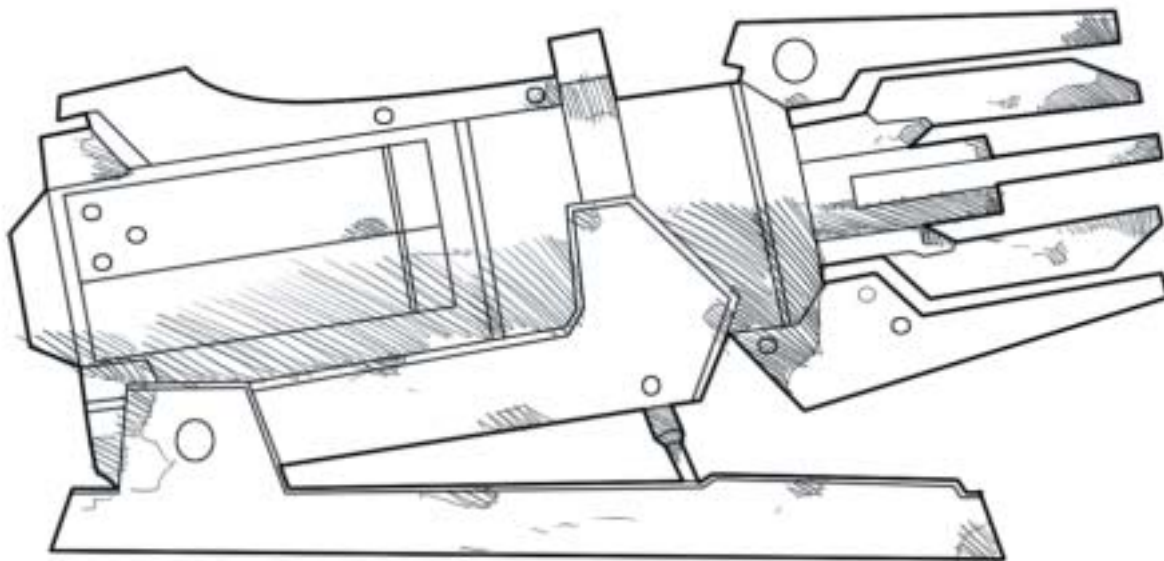


Fusion Z Gun (TL 14): The most advanced vehicle-mounted fusion gun, the Z-gun is almost a starship-grade weapon, though it lacks the range for starship combat. Damage: full in a 10m radius, halved within 20m.

Battlefield Meson Accelerator (TL 15): A battlefield meson gun requires several support vehicles and a huge power supply. It is similar in operation to starship-grade meson guns in that the

particles it accelerates do not interact with matter until they decay, allowing the weapon to effectively shoot through any obstruction so long as the target's location is known. A meson gun delivers 18d6 damage in a 10m radius and 9d6 damage in a 20m radius. All armour (other than meson screens or black globe generators) the target may have is ignored since a 'hit' implies that the accelerator's particles have decayed within the target.

Weapon	TL	Range	Required Skill	Damage	Auto	Cost (Cr.)	Mass (Kg)
Gatling Laser	8	25km	Heavy Weapons (Energy Weapons)	6d6	8	750,000	7,000
Laser Cannon	9	40km	Heavy Weapons (Energy Weapons)	8d6	No	1,000,000	6,000
Plasma A Gun	10	6km	Heavy Weapons (Energy Weapons)	14d6	No	1,000,000	4,000
Plasma B Gun	11	8km	Heavy Weapons (Energy Weapons)	16d6	No	1,500,000	4,000
Plasma C Gun	12	10km	Heavy Weapons (Energy Weapons)	18d6	No	2,000,000	4,000
Fusion X Gun	12	12km	Heavy Weapons (Energy Weapons)	20d6	No	3,000,000	4,000
Aerospace Defence Laser	12	120km	Heavy Weapons (Energy Weapons)	16d6	No	6,000,000	11,000
Fusion Y Gun	13	14km	Heavy Weapons (Energy Weapons)	24d6	No	5,000,000	4,000
Fusion Z Gun	14	16km	Heavy Weapons (Energy Weapons)	28d6	No	8,000,000	4,000
Meson Accelerator	15	150km	Heavy Weapons (Energy Weapons)	18d6	No	20,000,000	60,000



Tube Artillery

It seems fairly unlikely that the average band of travellers will become involved in a situation where heavy artillery is necessary but one never knows... 'Tube' artillery includes all weapons where the payload is launched in an indirect arc from a tube-like barrel. It therefore covers mortars, howitzers and traditional artillery guns. Mortars cannot conduct direct fire and howitzers are fairly poor at it but artillery guns can often fulfil a secondary, direct-fire support role.

Artillery Piece, Compressed-Air, 'Dynamite Gun' (TL 4): A lightweight artillery piece capable of delivering an explosive charge out to about 1km by use of compressed-air propulsion. Dynamite Guns have the advantage of being much lighter than the equivalent conventional guns and howitzers but the weapon's trajectory is badly affected by wind, imposing a -2 DM on all hit rolls unless there is no wind. The weapon cannot fire anything except its own specialist ammunition.

Mortar, Black Powder (TL 3): A fairly primitive short-barrelled smoothbore weapon, the black powder mortar is little more than a very short cannon on a high-angle mount. They are sometimes called 'grasshopper guns' due to their tendency to jump about when firing. This weapon can only fire black powder-filled spherical shells. They are not very reliable in terms of fuse length or whether they will detonate at all. Burst radius when the shells do go off is 6m.

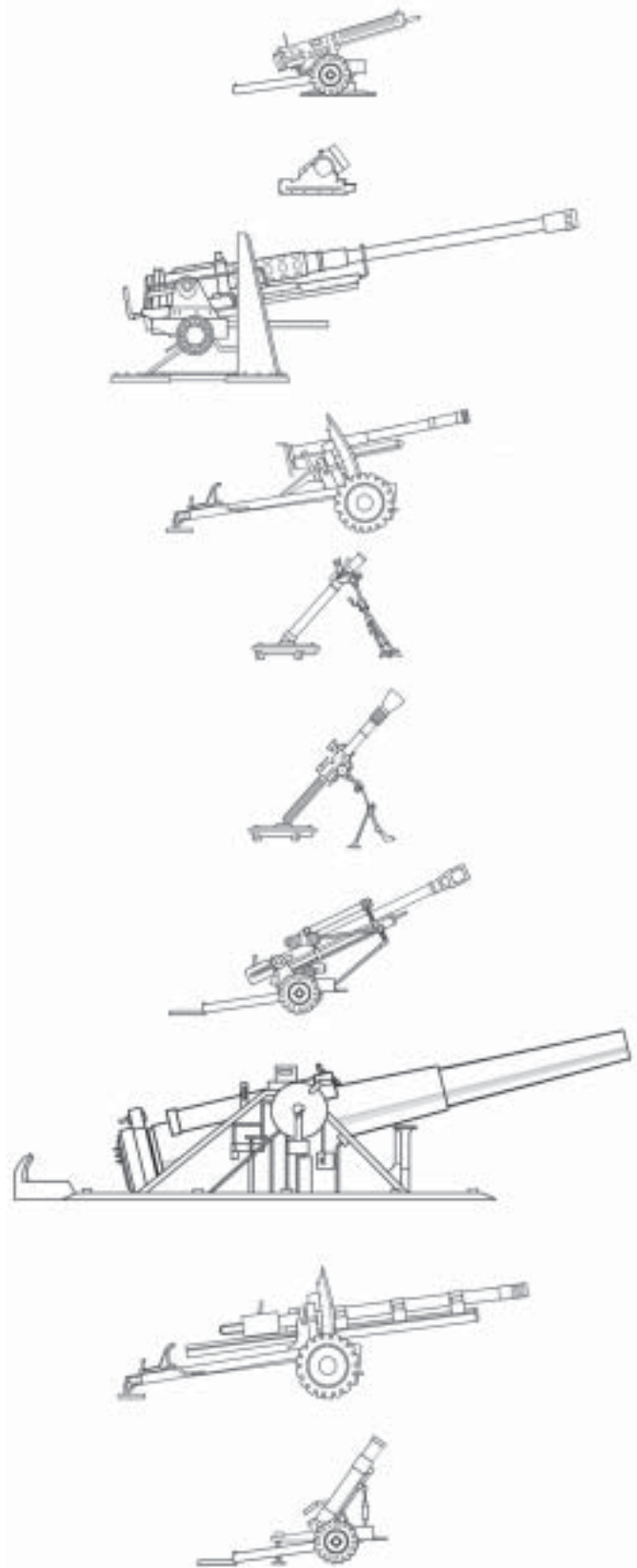
Gun, Bombardment, 280mm (TL 5): A fairly practical weapon as these things go, the 280mm superheavy gun is designed for bombardment of static or slow-moving targets. It is normally encountered as a railway gun, aboard a maritime vessel or as a coast defence weapon. It can deliver its payload out to 60km. An 11" maritime naval gun or coast-defence weapon of the same Tech Level is equivalent in performance.

Howitzer, Light, 100mm (TL 5): A short-barrelled artillery piece crewed by six personnel and moved by animal power or towed by a vehicle, the light howitzer can deliver a range of payloads to targets about 12km distant. It can also fire over open sights but is not very effective in this role. A typical 100mm light howitzer is rated as a Light artillery piece.

Mortar, Infantry, Light (TL 5): A light man-portable support weapon capable of delivering small explosive/fragmentation bombs (or other munitions, including smoke) out to about 2km. Bombs weigh 1.25 kg. Light mortars in the 60mm calibre range are considered to be extremely light artillery weapons. Burst radius is 9m.

Mortar, Infantry, Medium (TL 6): A heavier mortar requiring a crew of three men and capable of delivering a HE/fragmentation bomb or similar very light artillery payload out to about 3km, though without a great degree of accuracy. Burst radius is 9m.

Gun, Light, 100mm (TL 6): A long-barrelled artillery piece crewed by six personnel, this gun has a higher muzzle velocity than the



equivalent howitzer and can hit targets up to 18km distant. It is also more useful in the direct fire role. If armour-piercing rounds are used instead of the usual HE, they have a super-AP effect. Direct fire range is 4km.

Gun, Bombardment, 400mm (TL 7): A huge artillery piece most likely to be encountered as a coast defence piece or aboard a maritime naval ship, this giant gun can hit targets up to 40km away. Weapons of this type are occasionally used to launch sub-calibre rockets or missiles in the hope of creating a rudimentary aerospace defence capability.

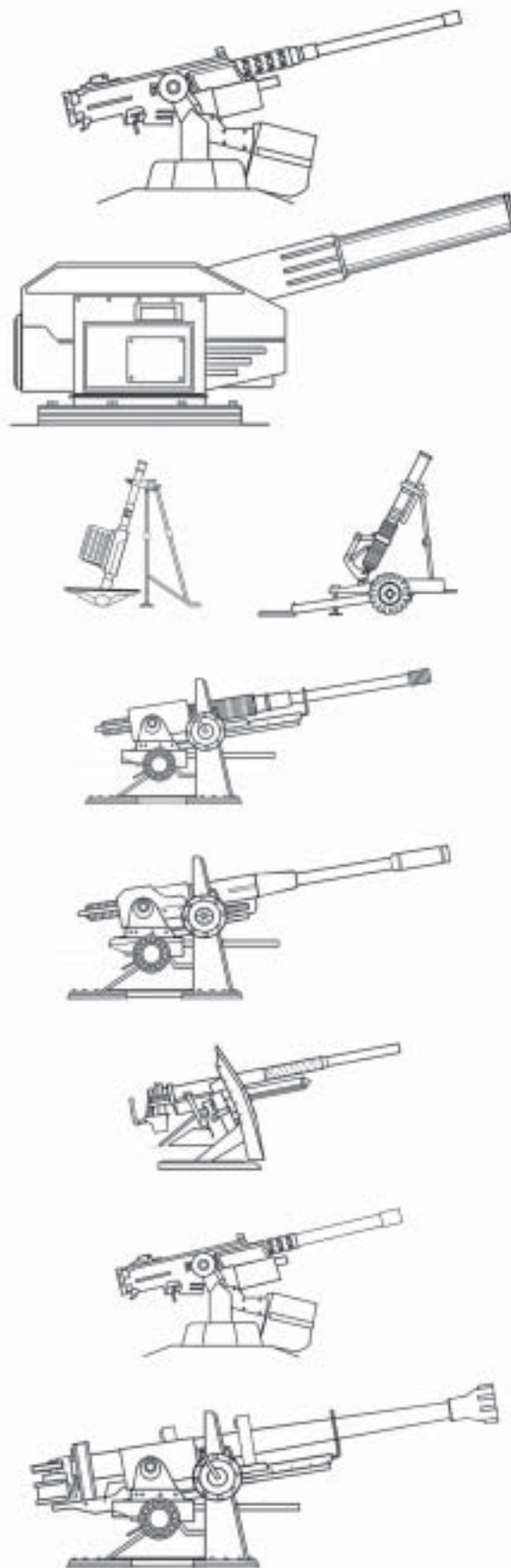
Howitzer, Medium-Heavy, 150mm (TL 7): A short-barrelled artillery piece crewed by six personnel and moved by animal power or towed by a vehicle, this larger howitzer can deliver a range of payloads to targets about 24km distant. It can also fire over open sights but is not very effective in this role. A typical 150mm light howitzer is rated as a Medium-Heavy artillery piece.

Mortar, Support, Heavy (TL 7): A heavy mortar mounted on a wheeled carriage rather than being carried broken down by infantry, the heavy support mortar flings a bomb in the 120mm range over a respectable distance. It is considered to be a light artillery weapon. Burst radius is 12m.

Gun, Heavy, 175km (TL 8): A fairly standard artillery piece on many worlds, the 175km gun is usually mounted on a vehicle, though the weight given is for a towed version. It is a Heavy artillery piece capable of delivering a range of munitions out to a range of 21km. Some versions can handle small nuclear warheads but this is not usual. This weapon is theoretically capable of firing over open sights but it is extremely ineffective in this role.

Gun, Siege, Superheavy. 800mm (TL 8): A somewhat updated version of the largest artillery piece ever built on Terra, the 800mm siege cannon must be moved in parts and assembled in its firing position, making it unwieldy and prone to counter-battery fire by lesser but more practical, pieces. Its awesome warhead can be delivered to a target 50km away. The original gun could not deliver nuclear munitions but this higher tech version can if they are available. A direct hit from the 5,000 kg shell would flatten a tank or even a maritime vessel with ease – before detonating.

Mortar, Area-Denial, Medium (TL 8): Also known as a ‘frag cannon’ for obscure reasons, the area-denial mortar is a light artillery piece optimised to pump out air-bursting antipersonnel munitions, usually to defend a position or to prevent an enemy using a given route. The weapon is fed from a 6-round ammunition cassette and can shoot rapidly. The airburst rounds scatter bomblets over the target area, making it most unhealthy for anyone out and about. An area-denial mortar cannot fire any ammunition other than its own dedicated bomblet munitions. A TL 5 version is available whose airbursts are extremely random; damage is 5d6+5 over the same 5m radius as the TL 8 standard model. At TL 10, shells contain better control systems and deliver 8d6+5 damage over a 10m radius.



Mortar, Anti-Armour (TL 9): A specialist mortar weapon firing 100mm anti-armour warheads designed to attack armoured vehicles from above. The weapon's lightweight construction enables it to be broken down and carried by infantry, though it is normally towed into position on its wheeled carriage (which adds 70 kg to the overall mass). An anti-armour mortar can only fire specialist rounds which seek out enemy armoured vehicles and attack using an advanced shaped charge warhead with Ultra-AP characteristics. This weapon is of little use against battle dress or similarly armoured infantry.

Gun, Mass Driver, Light, 120mm (TL 10): An advanced tube artillery piece using electromagnetic acceleration to hurl its payload up to 30km, a light mass driver will normally be carried on a vehicle of some kind. It requires a crew of 8 including power technicians as well as gunners and is fairly effective in the direct-fire role. Rated as a Medium artillery piece. In direct-fire mode this weapon can fire Ultra-AP rounds but does not traverse quickly enough to be very effective as a tank-killer.

Gun, Mass Driver, Extended-Range, 140mm (TL 11): A slightly larger mass driver gun optimised for longer range with a reduced payload. This gun actually delivers a smaller warhead than the 120mm TL 10 version and is considered to be a Light artillery weapon in terms of warhead. It can, however, hit a target some 50km away. Ultra-AP rounds are available for direct fire

Gun, Mass Driver, Multipurpose, 80mm (TL 12): The commonest mass driver weapon in use, this gun is rated as a very light artillery piece but can deliver rapid fire out to a very respectable 25km. It is also quite useful as an anti-tank or anti-assault shuttle weapon, as it is light enough to turn quickly and can engage with Ultra-AP rounds. These guns are often encountered in armoured turrets at starports where they counter a range of threats reasonably well. Although not ideal for any particular role, a couple of these guns are a good deterrent to a variety of threats.

Gun, Mass Driver, Counterbattery, 100mm (TL 12): A light artillery piece designed to deal with enemy artillery weapons. The standard munition is a 'smart' rocket-assisted shell capable of homing in on a target some 75km away. Usually this is an artillery position but possible targets include radar and communications systems, armoured vehicles and even tanks. The shell is rocket-boosted after launch to achieve greater range; it is not a guided missile as such. However, if it is aimed close enough to a space vessel in atmosphere, the shell's guidance system offers a marginal chance at a successful attack.

Gun, Mass Driver, Heavy, 160mm (TL 12): A heavy artillery piece based on the light mass driver gun, this weapon can deliver its payload to a target some 40km away. It is virtually useless in direct fire mode.

Weapon	TL	Effective Range	Minimum Range	Required Skill	Damage	Minimum Crew	Magazine	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
Black Powder Mortar	3	400 m	L	Heavy Weapons (Field Artillery)	3d6 (HE)	2	1	600	16	
Dynamite Gun	4	1km	M	Heavy Weapons (Field Artillery)	10d6 (HE)	3	1	5,000	400	20
60mm Light Mortar	5	2km	M	Heavy Weapons (Field Artillery)	7d6 (HE)	2	1	6,500	20	
100mm Light Howitzer	5	12km	M	Heavy Weapons (Field Artillery)	9d6 (HE)	6	1	50,000	1,000	
280mm Railway Gun	5	60km	10km	Heavy Weapons (Field Artillery)	20d6 (HE)	50	1	500,000	220,000	
80mm Infantry Mortar	6	3km	M	Heavy Weapons (Field Artillery)	8d6 (HE)	3	1	8,500	55	
100mm Light Artillery Gun	6	18km	S	Heavy Weapons (Field Artillery)	9d6 (HE)	6	1	75,000	2,400	
120mm Support Mortar	6	6km	M	Heavy Weapons (Field Artillery)	9d6 (HE)	3	1	11,500	200	

SUPPORT AND ARTILLERY WEAPONS

Weapon	TL	Effective Range	Minimum Range	Required Skill	Damage	Minimum Crew	Magazine	Cost (Cr.)	Mass (Kg)	Ammo Cost (Cr.)
150mm Howitzer	7	24km	S	Heavy Weapons (Field Artillery)	12d6 (HE)	6	1	100,000	9,000	
400mm Bombardment Gun	7	40km	5km	Heavy Weapons (Field Artillery)	24d6 (HE)	18	1	750,000	500,000	
75km Area-Denial Mortar ('Frag Cannon')	8	5km	S	Heavy Weapons (Field Artillery)	6d6+5 (Bomblets)	4	6	5,000	100	
175km Heavy Gun	8	21km	M	Heavy Weapons (Field Artillery)	14d6 (HE)	6	1	120,000	12,000	
800mm Siege Gun	8	50km	10km	Heavy Weapons (Field Artillery)	28d6	80	1	19,000,000		
100mm Anti-Armour Mortar	9	8km	M	Heavy Weapons (Field Artillery)	9d6 Ultra-AP	2	3	20,000	40	
120mm Light Mass Driver Gun	10	30km	L	Heavy Weapons (Field Artillery)	10d6	8	1	300,000	3500	
140mm Extended-Range Mass Driver Gun	11	50km	L	Heavy Weapons (Field Artillery)	9d6	8	1	400,000	4200	
80mm Multi purpose Mass Driver Gun	12	25km	L	Heavy Weapons (Field Artillery)	9d6	8	1	250,000	2500	
100mm Counter battery Mass Driver Gun	12	75km	L	Heavy Weapons (Field Artillery)	10d6	8	1	600,000	8500	120mm Mass Driver Gun
140mm Heavy Mass Driver Gun	12	40km	L	Heavy Weapons (Field Artillery)	12d6	8	1	500,000	6500	

MISSILES AND ROCKETS

The only real difference between a missile and a rocket is that a missile is guided, either by an operator or an automated system. Rockets offer a lot of 'bang for buck' but can be very random whereas missiles are much more expensive but also more precise.

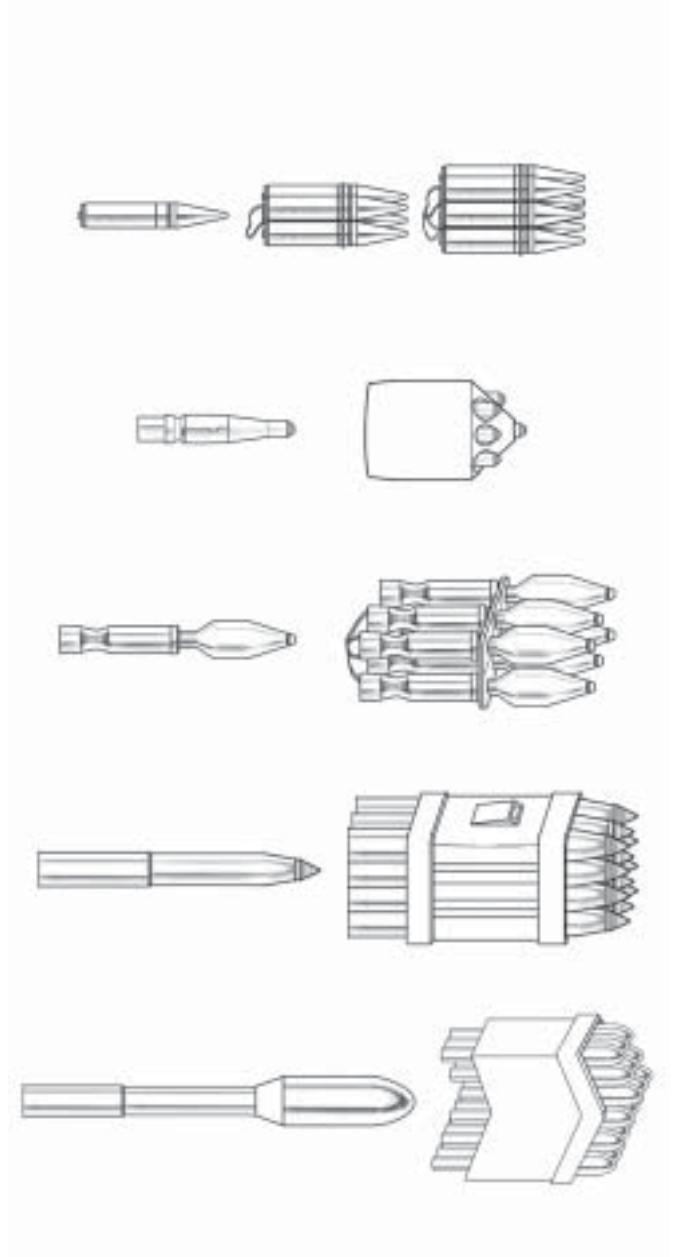
Rocket Pack, Multiple-Launch, Infantry Support (TL 6): A cluster of tubes, each containing a single small-calibre (45km) unguided rocket. A MRL pack can be mounted on a vehicle or a mobile mount, though the backblast poses a threat to nearby infantry. This weapon is normally used to deliver light support and anti-vehicle fire where heavier weapons are not practicable. Once emptied, the launcher is usually abandoned. At TL 6, the rockets are fairly limited: 4d6 damage in a 5m radius or 5d6 with Super-AP with HEAP rockets. At TL 8 damage increases to 5d6. Range increases to 750m at TL 10, while the TL 12 version has a direct-fire range of 1km and delivers 6d6 damage.

Strafing Rocket Pod, 70mm (TL 6): A small pod containing seven small rockets with high-explosive warheads. The pod can be fitted to most vehicles and aircraft and is aimed by pointing the craft. Rockets can be fired one at a time or 'rippled' off in a rolling salvo. The usual warhead is HE but shaped-charge warheads are available at greatly increased cost (10 times the cost of standard ammunition).

Strafing Rocket Pod, Heavy, 110mm (TL 6): A pod containing six large rockets with high-explosive warheads. The pod can be fitted to most vehicles and aircraft and is aimed by pointing the craft. Rockets can be fired one at a time or 'rippled' off in a rolling salvo. The usual warhead is HE but shaped-charge warheads are available at greatly increased cost.

Bombardment Rockets, Light, 180mm (TL 6): A self-contained rack suitable for mounting on the back of a truck or similar vehicle. It contains 12 fairly large rockets with high-explosive warheads. Alternative warheads are sometimes used, including incendiaries and chemical weapons. Rockets can be fired one at a time or 'rippled' off in a rolling salvo.

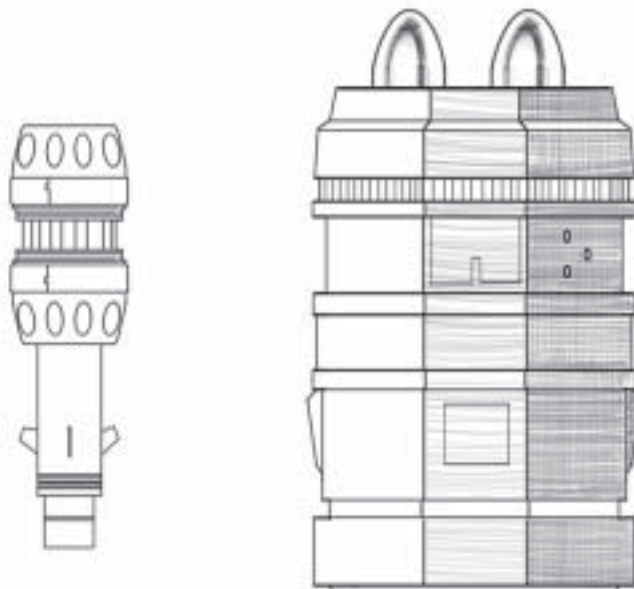
Bombardment Rockets, Heavy, 240mm (TL 6): A self-contained rack suitable for mounting on the back of a truck or similar vehicle. It contains 12 large rockets with high-explosive warheads. Alternative warheads are sometimes used, including incendiaries and chemical weapons. Rockets can be fired one at a time or 'rippled' off in a rolling salvo.



Support Rosette, Infantry, Disposable (TL 7): A remote-controlled disposable multiple launch system for rifle grenades, the support rosette is designed to be emplaced before combat and called upon to launch its 16 projectiles as needed. Any number can be fired at once to a range of about 1km. HE/Fragmentation rounds are most common but other warheads can be used; the rosette can launch any standard rifle grenade.

Multiple-Launch Rocket Pod, Disposable (TL 10): A lightweight pod containing six 240mm inertial-guided bombardment rockets. Pods of this sort are designed to be emplaced by engineers or airdropped across a potential combat zone to be called upon where necessary. The rockets are given a target location download and self-guide to that location using a fairly basic internal system. They do not home on the target and cannot be jammed. Any or all the rockets can be launched at once.

Weapon	TL	Effective Range	Minimum Range	Required Skill	Damage	Magazine	Cost (Cr.)	Mass (Kg)
MRL Pack, Infantry-Support	6	500 m	50 m	Heavy Weapons (Launchers)	4d6	6	3,000	12
70mm Strafing Rocket Pod	6	3km	100 m	Heavy Weapons (Launchers)	8d6	7	4,000	16
110mm Heavy Strafing Rocket Pod	6	4km	100 m	Heavy Weapons (Launchers)	10d6	6	7,000	24
180mm Light Bombardment Rocket Pod	6	12km	1km	Heavy Weapons (Launchers)	14d6	12	17,000	245
240mm Heavy Bombardment Rocket Pod	6	16km	1km	Heavy Weapons (Launchers)	16d6	12	52,000	360
Infantry Support Rosette	7	1km	200 m	Heavy Weapons (Launchers)	6d6	16	2,000	22
Disposable ML Rocket Pod	10	15km	1km	Heavy Weapons (Launchers)	16d6	6	15,000	95



PERSONAL PROTECTION

Personal protection items are designed to prevent the user from coming to harm. Some protect against relatively passive threats like unbreathable atmospheres, intense cold or the vacuum of space. Others are intended to ward off bullets, energy beams and blades. Many items combine these functions; combat armour, for example, can resist most environmental hazards as well as gunfire.

Armour

Armour is the last line of defence against hazards such as thorns, claws or airborne lead. It comes in several general types, within which there are many variations on a theme. For example, archaic chain mail and splint mail are very similar in performance although the method of construction is rather different.

Most modern (mid-tech and higher) armour is good against the majority of threats – thorns, bullets, claws and knives as well as more advanced weapons. Archaic (low-tech) armour is often not very useful against high-powered projectiles. Laser and other energy weapons require a special kind of protection to defeat them, standard low-tech armour is not very effective.

The weight of armour (other than vacc suits) and clothing is not counted when calculating the total weight a person is carrying, unless it is being carried rather than worn.

Armour provides a number of points of protection, reducing the damage from weapons by this amount. Some threats modify the amount of protection armour offers. For example, flame weapons treat the protection provided by armour as halved in most cases (see page XX).

Most armour types cover the torso and vital organs, often with separate head protection. Limbs are less likely to be hit and harder to protect. However, some armour types include either separate limb protection or full-body coverage.

Some armour types (notably vacc suits, battle dress and combat armour) require a skill to be used effectively. If so, the listed skill level is the minimum required for normal use. A character without this skill level suffers a –2 DM to all actions for each level of skill missing, including level 0. Thus a character with no vacc suit skill whatsoever suffers a –4 DM when using a suit requiring a skill level of vacc suit-1 or better.

Combining Armour

Some armour can be combined. It is possible, for example, to wear a flak jacket over a suit of Cloth armour. Vacc suits, combat armour and battle dress cannot be combined with other armour types. Their armour value includes the benefit of limb and head coverage.

If a character wears only one piece of armour (such as a helmet or a flak jacket) then he gains the normal protection of this armour. If he wishes to combine armour, he does not gain the full benefit of each piece. The exception is natural or artificial 'built-in' armour, such as subdermal armour, which always counts at full value.

It is possible to gain benefit from one 'base garment' such as a suit of Cloth armour plus one set each of arm, leg and head protection. Thus a flak jacket can be usefully worn over Cloth armour. A second layer of Cloth would simply encumber the character.

A character wearing multiple armour pieces calculates his value as follows:

- Subdermal or natural armour counts at full value.
- The highest-value armour worn on the torso (or a whole-body suit of Cloth or Mesh, for example) counts at full value.
- Additional torso protection counts at half value.
- One piece each of head, arm and leg protection counts at quarter value.
- The total is calculated and fractions are dropped, giving the final armour value.

Example: A character serving as a mercenary wants to outfit himself with good armour but cannot afford combat armour. He starts with a suit of TL 10 Improved Cloth Armour (5 armour points) and straps a TL 10 torso protector over it (normally worth 8 points but halved to 4). He is now wearing 9 points of armour.

The character's heavy leg (3 points) and arm (2 points) protectors and a light infantry helmet (5 points) add up to 10 points of protection. One-quarter of this is counted, or 2.5 points. Dropping fractions this gives 9+2 or 11 points of armour. Almost as good as Combat Armour, at a fraction of the cost! And also without the environmental protection and other goodies of course. He also suffers a –1 DM to all tasks due to the awkwardness of his limb protection.

Standard Armour Types

Standard armour offers good all-round defence against most attacks, including guns, blades and fists.

Jack (TL1): A jacket or body suit of tough natural or synthetic material such as leather, Pseudohide or something similar covering the torso and upper arms and legs. Jack may be armour or simply a tough piece of clothing. It is somewhat better than ordinary clothing or bare skin when defending against blades and fairly useless against higher-velocity attacks. The leather or hide armour of low-tech troops is equivalent to Jack.

Mesh (TL 6): A jacket or body suit made of natural or synthetic leather and reinforced with a lining of flexible metal mesh. It is primarily useful against hand weapons.

Cloth (TL 7): A heavy-duty coverall tailored from ballistic cloth, sometimes containing light metal or ceramic plates at critical points. The fabric absorbs impact energy, distributing the blow over the body of the target and possibly resulting in bruising. Cloth armour can be concealed under clothing but is fairly easy to spot – a routine Investigate or Recon check will spot the armour.

Flak Jacket (TL 7): A heavy sleeveless jacket of ballistic cloth, often with ceramic/metal inserts to stop powerful projectiles. Generally only covering the torso and groin, a flak jacket can be concealed under a bulky coat but will be spotted by all but the most cursory glance.

Cobbled Tough (TL 8): This is scavenged armour made from plate pieces, salvaged rubber and other toughened materials that can be riveted, welded or glued together. It covers the torso and upper legs and occasionally one of the arms.

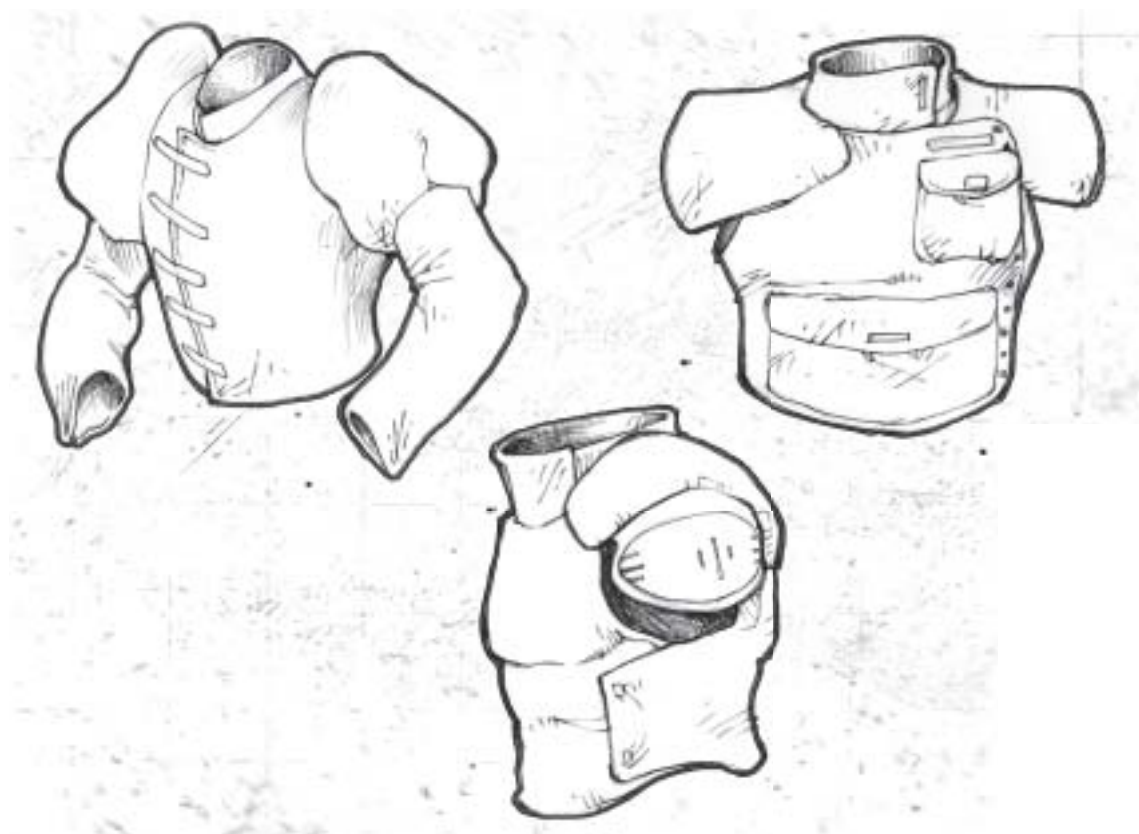
Ballistic Vest (TL 8): A flexible and relatively light flak jacket intended to be worn semi-discreetly. It is still fairly obviously armour but can be concealed under a light jacket, whereas a flak jacket is much more blatant.

Flak Jacket, Improved (TL 8): A somewhat better version of the TL 7 flak jacket, offering better protection. It is otherwise similar.

Protec Suit (TL 8): A slim-fitting business suit woven from protective fibres, the protec suit is not unattractive and can turn melee weapons while softening the blow of small arms fire. Can be worn under other types of armour.

Torso Protector, Rigid (TL 9): A heavy back-and-breastplate formed from metal/ceramic composites. It can be worn alone or over the top of Cloth armour. A Torso Protector is essentially a higher tech flak jacket. It is extremely heavy and imposes a –1 penalty on all skill rolls which are not purely mental.

Diplo Vest (TL 9): Essentially a torso-only version of the Protec suit, worn underneath a normal shirt. Those that know what to look for might realize that a suit is made of Protec but Diplo is concealed. It is ideal for sensitive occasions where armour is not appropriate, hence the name “diplo” (diplomatic) armour.



Poly Carapace (TL 10): A bodysuit of fibrous material with attached plates of polymer plastics designed to shield major arteries and organs, the carapace comes with an armoured facemask and half-helmet as well. It is good protection against all forms of damage but can be restrictive to individual limb movements. This armour imposes a -1 DM to all Dexterity based skill checks.

Cloth, Improved (TL 10): An updated version of Cloth armour, augmented with inserts at critical points. Improved Cloth is often used by militaries unable to afford combat armour. Its main advantage over a flak jacket is other armour can be worn over the top, such as a torso protector.

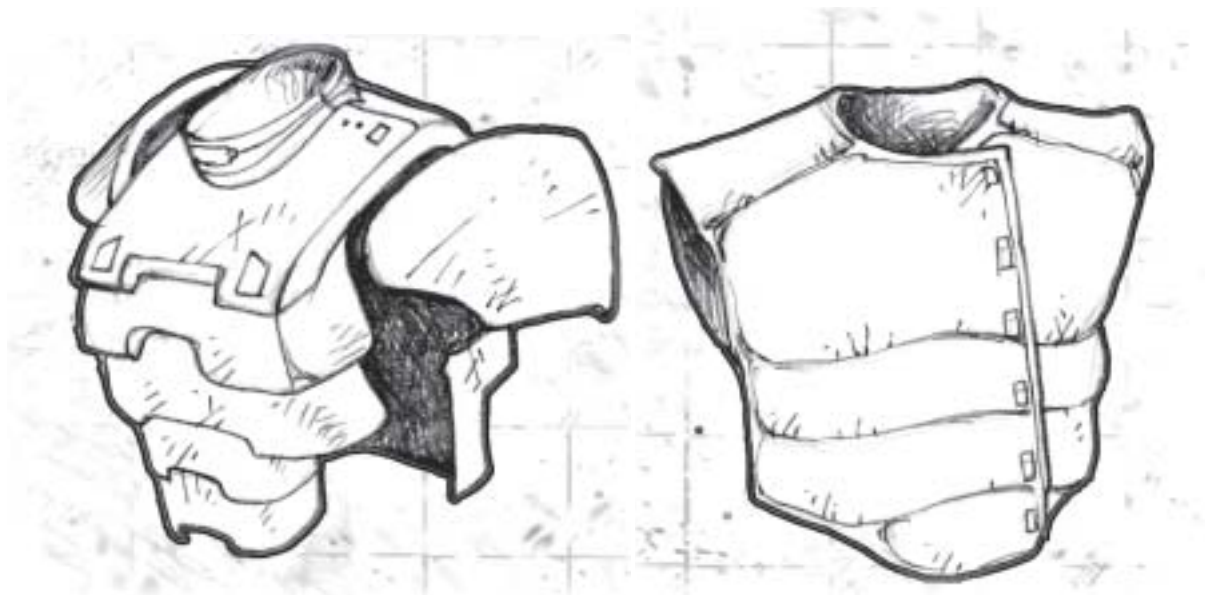
Poly Carapace, Lightweight (TL 11): A lightweight version of the standard carapace.

Ceramic Alloy Carapace (TL 12): Made from specially contoured plates of advanced ceramic/metal alloys positioned over the vital organs of the wearer, keeping them well protected. Ceramic alloys are designed to slough off heat and flame, giving the armour a much higher rate of protection against lasers, flamethrowers and other heat/fire-based attacks listed in the profile below.

Poly Carapace, Advanced (TL 13): A much less restrictive version of the standard carapace, which does not impose a penalty to skill rolls.

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Jack	1	1	None	50	1
Mesh	6	2	None	150	2
Cloth	7	3	None	250	2
Flak Jacket	7	4	None	100	2
Cobbled Tough	8	4	None	150	3
Ballistic Vest	8	5	None	200	1
Improved Flak Jacket	8	6	None	300	2
Protec	9	4	None	350	1
Torso Protector	9	8	None	1000	8
Diplo Vest	10	3	None	250	0.5
Improved Cloth	10	5	None	500	1
Poly Carapace	10	10	None	10,000	2
Lightweight Poly Carapace	11	12	None	15,000	2
Ceramic Alloy Carapace	12	10 (16)*	None	12,000	4
Advanced Poly Carapace	13	16	None	35,000	3

*The higher value of protection is provided against lasers, flamethrowers and other heat/fire-based attacks.



Archaic/Low-Tech Armour

Occasionally characters may encounter enemies encased in primitive body armour. Whilst inefficient, it can be effective against melee weapons and some weak firearms. None of the armour below includes a helmet, unless specifically mentioned in its description.

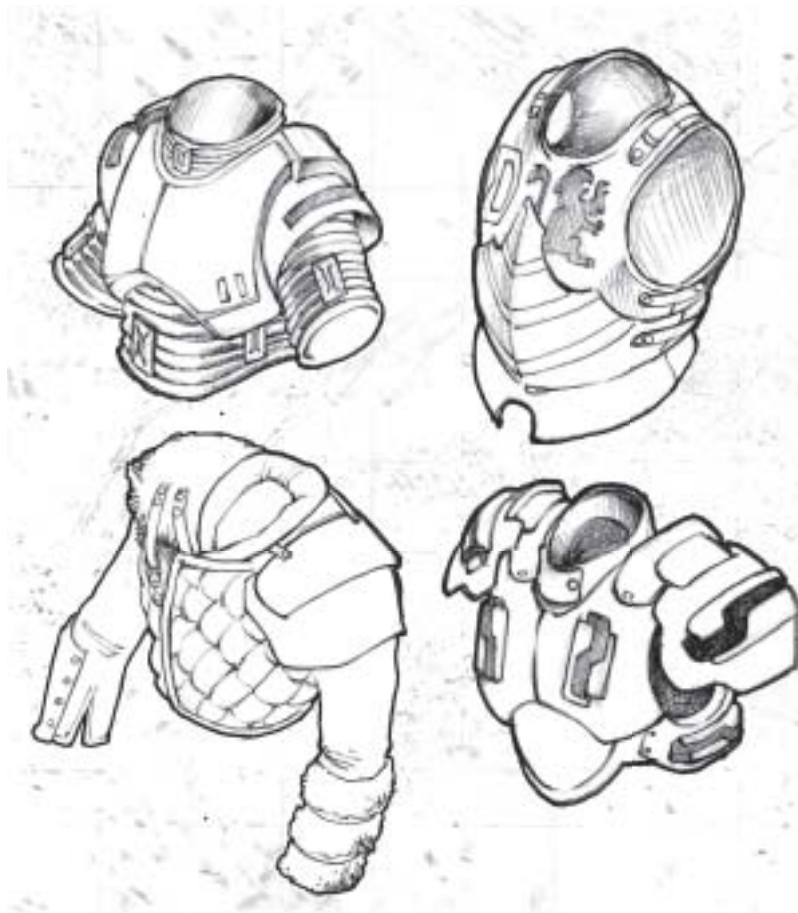
Breastplate (TL 1): A metal breastplate covers the front and back of the torso, offering good protection from hand weapons and archaic projectiles. It is less useful against firearms. Armour value is halved against high-velocity projectiles such as bullets.

Mail Hauberk (TL 2): A knee-length coat of interlocking large or small metal rings in a leather backing, a hauberk offers excellent protection against hand weapons. It is mainly used by heavy infantry and cavalry. Scale mail (constructed with small plates rather than rings) offers similar protection. Armour value is halved against high-velocity projectiles such as bullets.

Half-Plate (TL 2): Favoured by heavy cavalry even after infantry have lost their armour, half-plate consists of articulated plates backed by light mail and padding. It covers only the torso and parts of the limbs. Armour value is halved against high-velocity projectiles such as bullets.

Full Plate (TL 2): A complete suit of armour consisting of shaped and fitted metal plates riveted and interlocked to cover the entire body. It includes gauntlets, heavy leather boots and a helmet. Plate is designed to distribute the weight over the body, so it hampers movement less than might be expected. However, it is heavy and tiring to wear and the sheer mass of metal that has to be moved imposes a -2 DM on all checks dealing with manual dexterity, coordination or balance, other than melee attacks. Armour value is halved against high-velocity projectiles such as bullets.

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Breastplate	1	4 (2 against projectiles)	None	200	5
Mail Hauberk	2	3 (2 against projectiles)	None	500	8
Half-Plate	2	5 (3 against projectiles)	None	800	12
Full Plate	2	6 (3 against projectiles)	None	500	20



Anti-Laser and Anti-Energy Armour

Lasers and energy weapons require a special type of protection not afforded by standard types. Anti-Laser and Anti-Energy armour has little value against conventional weapons such as firearms. It applies full value against fire and energy weapons. These armour types are not doubled against flame weapons – this is already factored into their effects.

Fireproof Suit (TL 7): A fireproof suit is a complete body suit of light flexible material designed to resist heat and shed burning chemicals. It resembles the suits worn by racing drivers under their coveralls. It has no value against any weapons other than those delivering energy – lasers, energy weapons and flame guns.

Ablat (TL 9): Ablat is a cheap alternative to reflect and is fashioned from a material which will ablate (vaporise) when hit by laser fire or other energy weapons. The ablation of the material carries away the energy of the laser and protects the wearer. Continued fire against Ablat degrades its effectiveness but the armour is cheap and easily replaceable. Ablat also has a minimal value against other forms of attack.

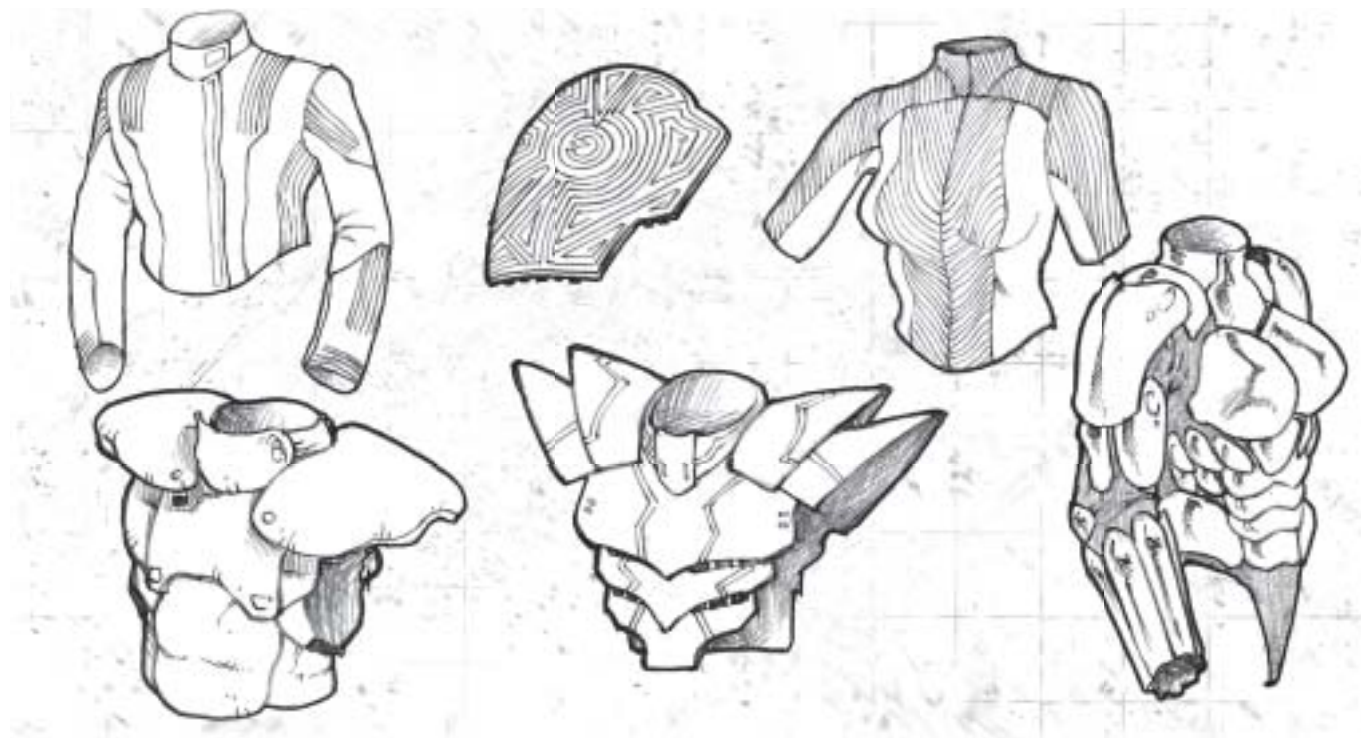
Reflec (TL 10): Reflective material on a plastic base can be tailored into a body suit which is ineffective against most weapons but superior in defence against laser fire. Unlike other forms of armour, Reflec is worn under other clothing. Reflec is expensive and often difficult to obtain.

Dispersion (TL 12): A semi-metallic polymer that wraps the wearer in advanced energy-dispersion materials. This protective suit is not quite as physically protective as anti-ballistic cloth but is built to absorb and eliminate most wavelengths of energy that strikes it.

Conduit-Bleed (TL 14): Designed specifically to supercool plasma energy, this dense suit of polymer-alloy mixtures is perfectly suited to pad the impact of most blows as well. The advances made to these materials means that directed plasma energy is far less likely to harm the wearer.

Neural Sheath (TL 17): Cloth weaved with thin-spun chains of advanced neural crystals, this protective suit is worthless against physical damage but is immensely useful against blocking the energies created and manipulated by psions. The neural sheath is extremely thin and lightweight and can be worn under any other form of armour or clothing. Any form of neural or psi weaponry or attack is reduced by the amount listed in the suit's profile.

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Fireproof Suit	7	0 (4 vs flame and energy weapons)	None	25	1
Ablat	9	1 (6 against lasers and energy weapons)	None	75	2
Reflec	10	0 (10 against lasers)	None	1,500	1
Dispersion	12	2 (10 against energy weapons)	None	2,000	3
Conduit-Bleed	14	4 (15 against plasma)	None	3,500	8
Neural Sheath	17	0 (20 against psionic damage)	None	8,000	5



Head Protection

Characters wearing body armour can normally be assumed to be wearing appropriate headgear and most attacks hit the torso anyway. However, it can be important to know what sort of helmet a character is wearing. Complete suits of armour (battle dress, combat armour and vacc suits) include a helmet matching the rest of the suit. Indeed, without such a helmet, many of the benefits of the armour are lost. Combat environment suits, combat armour and vacc suits will not provide protection against vacuum, gas, smoke, heat and so on without being "buttoned up" with an appropriate helmet in place.

Some kinds of headgear are only really effective against a melee attack. Archaic armour and certain security products fit into this category.

In the event a character is hit in the head, either deliberately or as a result of bad luck, the armour equivalent of his headgear (if any) is used instead of his body armour.

Hat (TL 0): A tough hat offers a little protection from blows to the head. Examples include primitive hunters' headgear, a low-tech soldier's shako, or a paranoid traveller's extra-stout leather hat.

Composite Helm (TL 1): A covering of hardened leather over a metal framework, a composite helm offers reasonable protection against melee attacks. Armour value is halved against high-velocity projectiles such as bullets.

Open Helm (TL 2): A solid metal helmet with little face protection other than a nasal bar and/or cheek pieces, an open helm allows good vision and reasonable protection. Examples include Roman, Norman and the dragoon and cuirassier helms worn by some mid-tech cavalry. Armour value is halved against high-velocity projectiles such as bullets.

Full Helm (TL 2): A full helm with neck and face protection. It is hard for the wearer to breathe or to see out of but protection is good. Examples include the ancient Greek barbut and knightly great helms. Armour value is halved against high-velocity projectiles such as bullets.

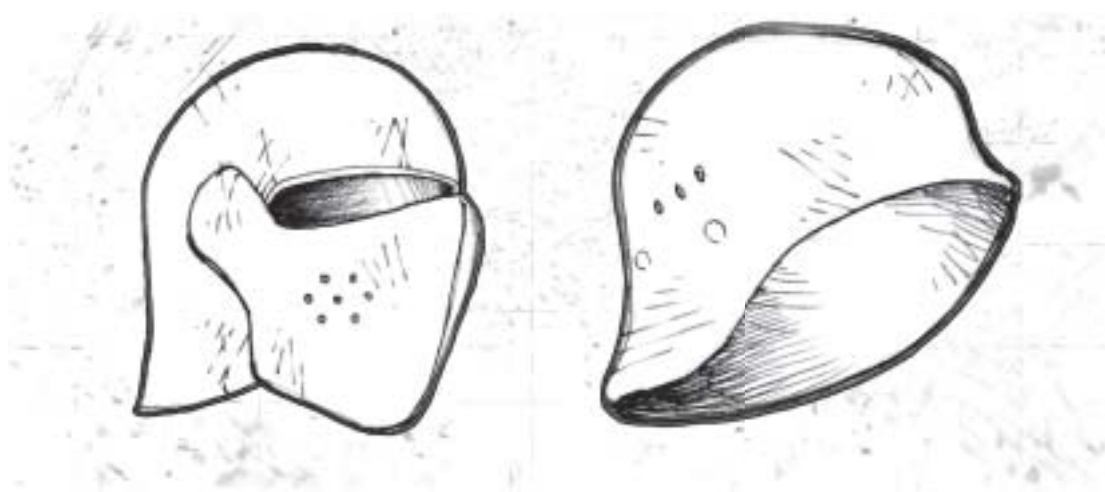
Steel Helmet (TL 5): A simple metal headpiece offers basic protection against shell fragments and projectiles.

Security Helmet (TL 6): An advanced, lightweight helmet, usually with a face guard, used by riot police and security guards to protect against melee attacks. The security helmet gives some but not much, protection against projectiles. Safety helmets used by aircraft and grav-bike (and motorcycle) pilots and industrial hard-hats have similar characteristics. Protection is halved against high-velocity projectiles.

Ballistic Helmet (TL 7): An advanced version of the Steel Helmet using metal and ceramic components, the Ballistic Helmet offers good protection and is a standard item of infantry equipment for mid-tech armies.

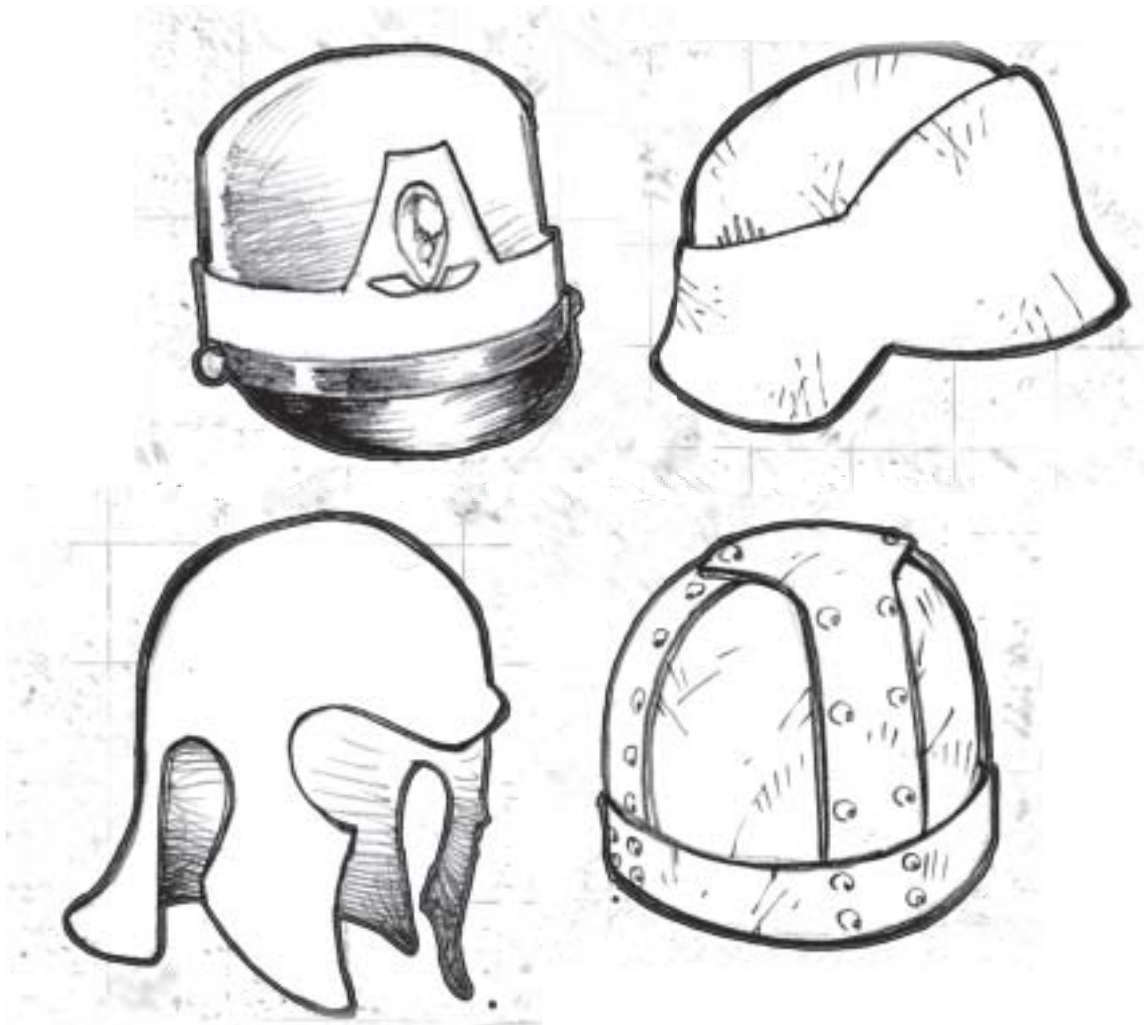
Helmet, Light Infantry (TL 9): A highly advanced infantry helmet constructed of lightweight materials. The LI Helmet is often worn with a cloth suit and (sometimes) a rigid torso protector by troops unable to afford combat armour.

Helmet, Ceramic Alloy (TL 12): An enclosed helmet constructed of advanced ceramic-metal hybrids, this helmet is designed to work with the carapace of the same substance. Ceramic alloys give the helmet a much higher rate of protection against lasers, flamethrowers and other heat/fire-based attacks listed in the profile overleaf.



PERSONAL PROTECTION

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Hat	0	1	None	2	0
Composite Helm	1	2 (1 against firearms)	None	10	1
Security Helmet	6	2 (1 against firearms)	None	15	1
Open Helm	2	3 (1 against firearms)	None	50	2
Full Helm	2	4 (2 against firearms)	None	100	3
Steel helmet	5	3	None	20	1
Ballistic Helmet	7	4	None	45	1.5
Light Infantry Helmet	9	5	None	75	2
Ceramic Alloy Helmet	12	4 (10 against lasers and flame weapons)	None	125	4



Limb Protection

It is usually most important to protect the head and vital organs but in many cases additional limb protection is desirable even when a whole-body armoured suit is not available. If bulky protection (such as greaves, mailed gauntlets, arm protectors or leg protectors but not boots) are worn on both sets of limbs then the wearer suffers a -1 DM to all Dex based skills. This does not apply to complete-suit armour as the limb protection is better integrated.

Greaves (TL 1): A set of metal protectors for the leg. Normally greaves only cover the shins but this armour type represents a range of archaic leg protection. Protection is halved against firearms and other modern weapons.

Gauntlets, Mailed (TL 2): A set of metal arm and hand protectors. Protection is halved against firearms and other modern weapons. A mailed fist can be considered equivalent to a set of brass knuckles.

Boots, Toughened (TL 5): Not really armour as such, a set of toughened boots protect right up to the knee. Various designs are used by horsemen, motorcyclists and people having to work where there is a danger of snakebites on the lower leg. Toughened boots give complete protection against routine hazards such as banging

against rocks or small animal bites but do not protect against weapons. Combat boots as worn by most soldiers are not as tall but are similar in function against hazards directed at the foot.

Boots, Minefield (TL 8): Used by some troops where there is a risk from small anti-personnel mines, 'minefield boots' give complete protection against routine hazards like snakes and count as 4 points of armour against small sharpened stakes (punji stakes) and anti-personnel mines. They offer no protection against combat hazards unless the character is deliberately shot in the foot.

Arm Protector, Light (TL 8): A set of upper and lower arm plates with straps to hold them in place. Usually worn over Cloth armour.

Leg Protector, Light (TL 8): A set of thigh and calf plates of light metal/ceramic material, offering some protection against melee and missile threats. Usually worn over Cloth armour.

Arm Protector, Heavy (TL 9): Heavier arm plates offering better ballistic protection. Usually worn over Cloth armour.

Leg Protector, Heavy (TL 9): Heavier leg plates offering better ballistic protection. Usually worn over Cloth armour.

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Mailed Gauntlet	2	1	None	40	1
Greaves	1	2	None	25	2
Toughened Boots	5	0 (1 against foot hazards)	None	20	1
Minefield Boots	8	0 (4 against foot hazards)	None	50	1
Light Arm Protector	8	1	None	75	1
Heavy Arm Protector	9	2	None	150	2
Light Leg Protector	8	2	None	100	1.5
Heavy Leg Protector	9	3	None	200	2.5



Complete Unpowered Suits

Some armour comes as a complete suit and is rarely worn other than complete with helmet and any additional gear (such as air tanks) attached. Suits, if sealed, offer total protection from gas and airborne biological agents. Unlike normal clothes or armour, a vacc suit's weight does count when calculating the total weight carried by a character.

Vacc Suit (TL 8): A rather bulky suit providing protection from hard vacuum and temperatures encountered in space. The suit also gives some radiation protection. It includes a six-hour air supply.

Emergency Softsuit (TL 8): A disposable emergency vacc suit including gloves and a soft, collapsible "bubble" helmet, the softsuit has no armour value and offers no protection against hostile environments. Starships are required to carry enough emergency suits or rescue balls to allow the crew and all passengers to survive depressurisation. Softsuits are more difficult to use and require the vacc suit skill, so are normally used for crew only. Well-equipped ships include a softsuit at each crew position and a few spares at strategic points, in addition to the crewmember's own vacc suit.

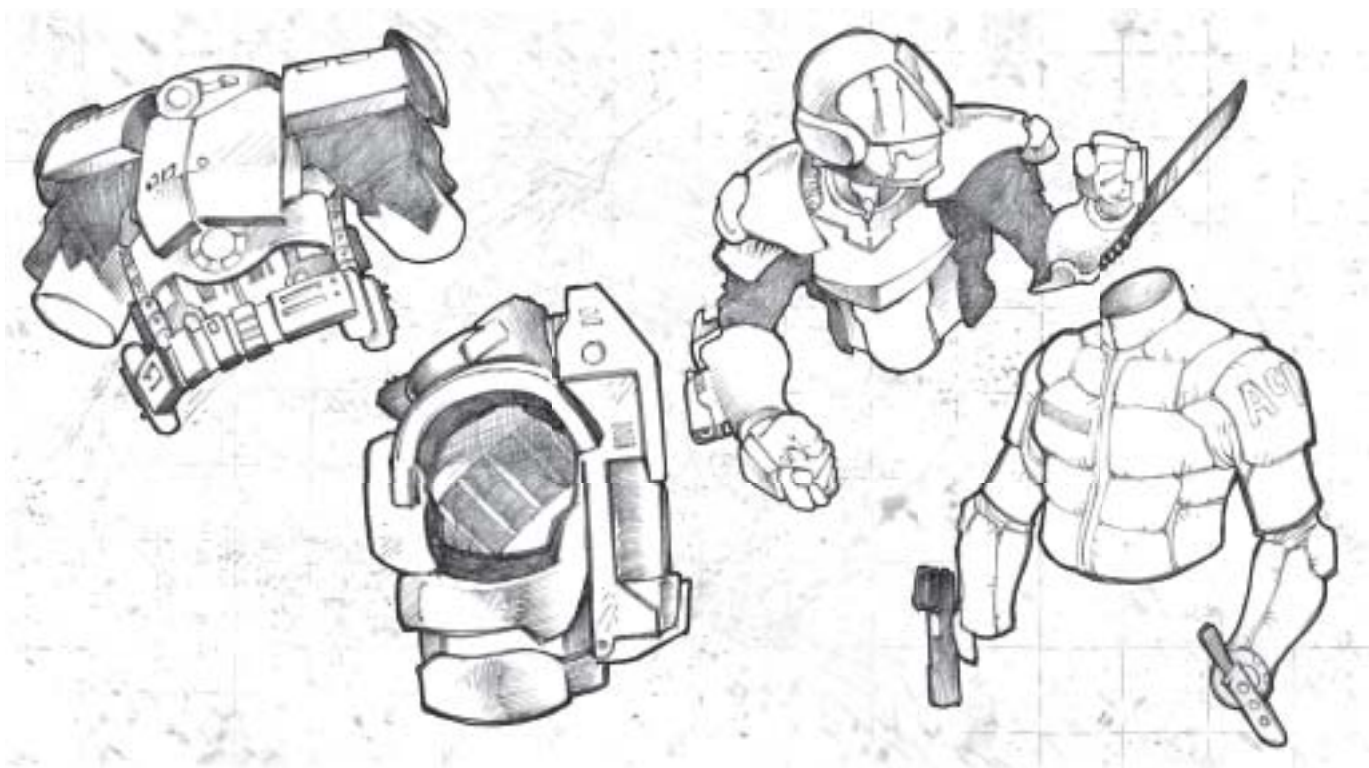
The softsuit includes a small air bottle (4 hours' worth) and can be plugged into shipboard life-support points to prolong this supply. It is rather flimsy and it offers no protection against radiation, making it a poor choice for repair work or routine duty and a desperate last resort for EVA work. It has no armour value.

Hostile Environment Vacc Suit (TL 8): A hardened version of the vacc suit, offering heavier protection from the elements and physical damage in hostile environments such as nearby volcanic activity or within a corrosive atmosphere. HE Suits are heavier and more expensive than Combat Armour but nearly as effective and available to the general public. The hostile environment suit's armour rating can be applied against damage done by hazards such as radiation or pressure.

Emergency Hostile Environment Suit (TL 9): A disposable emergency vacc suit designed to protect the wearer from corrosive, insidious and similarly hazardous atmospheres (and, of course, vacuum). The suit is good for 6-8 hours, after which there is a 1 in 6 (non-cumulative) chance that it will fail every hour. Emergency suits are usually carried by starships to allow engineering crew to make emergency repairs under unusual conditions. The suit can be refurbished for 75% of its initial cost but each refurbishment adds 1 in 6 to the chance of failure after the "safe" time and additionally reduces time to failure by 1 hour. Once the failure chance has reached 4 in 6 the suit is too degraded to be any further use.

Hostile Environment Vacc Suit, Improved (TL 9): A somewhat less bulky version of the hostile environment suit, the improved version is still clumsy and tiring to wear.

Body Pressure Sleeve (TL 10): A form-fitting garment similar to a wetsuit, worn as an under-uniform by some spacegoing services.



The body pressure sleeve is designed to protect the user in low pressure environments (allowing normal function in Very Thin and Trace atmospheres) and to give some protection against vacuum. The ankles seal to boots and a set of gloves are normally carried in a belt pouch. To be any use, the suit's hood must be pulled up and sealed to a Life-Support Mask (not included in the price of the suit). The Body Pressure Sleeve is designed to give personnel a survival margin in an emergency. It is not a substitute for a proper vacc suit, though it can be worn under one. A user with a proper mask can function indefinitely in Very Thin atmosphere, for about 15 minutes in Trace Atmosphere and for about 5 minutes in hard vacuum. After this period, the character begins to take damage from vacuum exposure, though not as quickly as an unprotected character, taking 1d6 damage every other round.

Combat Environment Suit (TL 10): A neck to toe airtight, loose fitting suit constructed of ballistic cloth. Generally worn open at the neck and wrists, the combat environment suit can be sealed by donning gauntlets and a clear flexible plastic head bag, thus giving complete protection against most chemical agents, tainted atmospheres, biological agents and a moderate defence against radiation. It offers light armour protection and can be worn as a base garment for other armour, much as Cloth. A Combat Environment Suit will protect against most atmospheric hazards and support the user in very thin atmospheres. It will fail fairly quickly in a trace atmosphere (1-3 hours typically) and more rapidly (10-30 minutes) in hard vacuum.

Boarding Vacc Suit (TL 11): An armoured suit hardened to the dangers of exposure to vacuum or hostile environments, the boarding vacc suit was originally used to help battle against pirates when life support failed during an attack. As technology improved the suits became thinner and sturdier, revolutionising their use in ship-to-ship combat. A boarding vacc suit will sometimes have a melee weapon/pistol combination grafted to the cuffs of the suit for the wearer's use.

Combat Armour (TL 11): Combat armour is a complete vacc suit-like array of metal and synthetic armour. Combat armour is strictly military and not available on the open market. It contains oxygen tanks for six hours and a recycling unit which can more than double this endurance if the user is not unduly exerting himself.

Boarding Vacc Suit, Improved (TL 12): A lighter and less bulky version of the boarding suit, offering better protection.

Combat Armour, Improved (TL 12): Constructed from more advanced materials, improved combat armour offers better protection than the basic type.

Hostile Environment Vacc Suit, Standard (TL 12): The standard H-Env suit worn by workers in dangerous environments, this suit is much easier to use than earlier versions.

Rescue Suit (TL 12): A Rescue Suit is a heavy vacc suit designed for emergency situations such as damage control or entering a damaged spacecraft. It is very tough and some models are sold as 'boarding suits' to mercenary forces who cannot afford or obtain combat armour. The rescue suit carries oxygen tanks for six hours and a variety of tools for use in an emergency situation. Rescue suits are mainly designed to protect against physical hazards like torn wreckage and debris, plus radiation. They are little better at dealing with corrosive atmospheres and similar hazards than a standard vacc suit.

Vacc Suit, Improved (TL 12): The standard vacuum or space suit is designed to protect the individual from vacuum, tainted or noxious atmospheres and some radiation. It carries its own communicators, oxygen tanks for six hours and other basic survival equipment. Vacc suits are armoured against space debris and similar hazards.

Combat Armour, Ceramic Alloy (TL 13): A heavy suit of advanced materials, overlapping ceramic alloy plates give the armour and integrated helmet extreme durability. Besides the six-hour capacity for complete environmental sealing, ceramic alloy grants a much higher rate of protection against lasers, flamethrowers and other heat/fire-based attacks, listed in the profile overleaf.

Hostile Environment Vacc Suit, Advanced (TL 13): A more advanced suit giving better protection than earlier versions, for less bulk.

Boarding Vacc Suit, Advanced (TL 14): A further improved version of the boarding suit, offering better protection.

Combat Armour, Advanced (TL 14): Like earlier versions of combat armour, advanced combat armour is unpowered, relying on the exertions of the wearer for motive effort. It represents the likely pinnacle of unpowered personal armour.

Hostile Environment Vacc Suit, Lightweight (TL 14): A more advanced suit giving better protection than earlier versions, for less bulk.

Vacc Suit, Tailored (TL 14): An advanced vacc suit which is not much bulkier than heavy clothing. It can be worn as a shipboard uniform, though most users find this aggravating after a while – a vacc suit is simply not as comfortable as clothing. The suit is completed by gauntlets, a chest/back pack containing air and power supplies and a helmet when necessary.

Combat Armour, Psi-Enhanced (TL 16): This suit of advanced combat armour is rigged with a latticework of neural crystals, drawing from the wearer's natural psion strength to create an invisible telekinetic reinforcement upon the armour while worn. Other than having a full 8 hour air supply built into the suit when sealed, the wearer may also add half (round up) his Psi Characteristic to the Protection rating of the armour while worn.

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Vacc Suit	8	4	Vacc Suit 1	7,000	24
Hostile Environment Vacc Suit	8	6	Vacc Suit 2	12,000	36
Improved Hostile Environment Vacc Suit	9	7	Vacc Suit 2	16,000	27
Body Pressure Sleeve	10	0	None	600	1.5
Emergency Softsuit	10	0	Vacc Suit 0	2,000	10
Combat Environment Suit	10	3	None	1,000	2
Emergency Hostile Environment Suit	10	4	Vacc Suit 1	9,000	20
Boarding Vacc Suit	11	8	Vacc Suit 1	12,000	25
Combat Armour	11	12	None	200,000	18
Improved Boarding Vacc Suit	12	12	Vacc Suit 1	20,000	14
Improved Combat Armour	12	14	None	300,000	10
Improved Vacc Suit	12	6	Vacc Suit 0	10,000	12
Rescue Suit	12	12	Vacc Suit 2	35,000	22
Standard Hostile Environment Vacc Suit	12	8	Vacc Suit 1	18,000	18
Ceramic Alloy Combat Armour	13	12 (18 against lasers and flame weapons)	None	300,000	22
Advanced Hostile Environment Vacc Suit	13	9	Vacc Suit 1	20,000	12
Advanced Boarding Vacc Suit	14	15	Vacc Suit 0	40,000	6
Tailored Vacc Suit	14	8	Vacc Suit 0	13,000	4
Lightweight Hostile Environment Vacc Suit	14	10	Vacc Suit 1	150,000	6
Advanced Combat Armour	14	16	None	600,000	6
Psi-Enhanced Combat Armour	16	15 plus Psi	None	500,000	12

Powered Armour Suits

There is a class of armoured suit falling between regular combat suits and the extremely advanced Battle Dress rigs; these are called powered armour suits. Aided by servos, pneumatics and counterweight mechanisms, powered armour suits slightly enhance the wearer's strength at the cost of having limited use between refuelling or charging. Powered suits, if sealed, offer total protection from gas and airborne biological agents as well as ample radiation shielding (halves all incoming rads, round down). While powered and active, the mass of a powered armour suit does not count against the encumbrance of the wearer.

When a powered armour suit is not currently charged or fuelled, the mass of the suit counts against the wearer. Additionally, any Strength bonus the armour provides is lost and any Dexterity penalty the armour imposes is doubled.

Carapace, Mechanical (TL 9): A suit of sealed carapace plates attached to a very simple framework of mechanical ratchets and pneumatics, this armour is durable. Fuelled for up to 10 hours on five litres of fuel (Cr. 2 per litre), the suit adds +1 to the wearer's Strength score and reduces his Dexterity by -1 while worn.

Powered Plate (TL 10): A large and bulky suit of insulated powered armour made up of metallic plates forming a complete body shell, powered plate is tough and inflexible. As long as the suit's 100d-hour power cell (Cr. 250) has energy in it, the suit adds +2 to the wearer's Strength but reduces the wearer's Dexterity by -2.

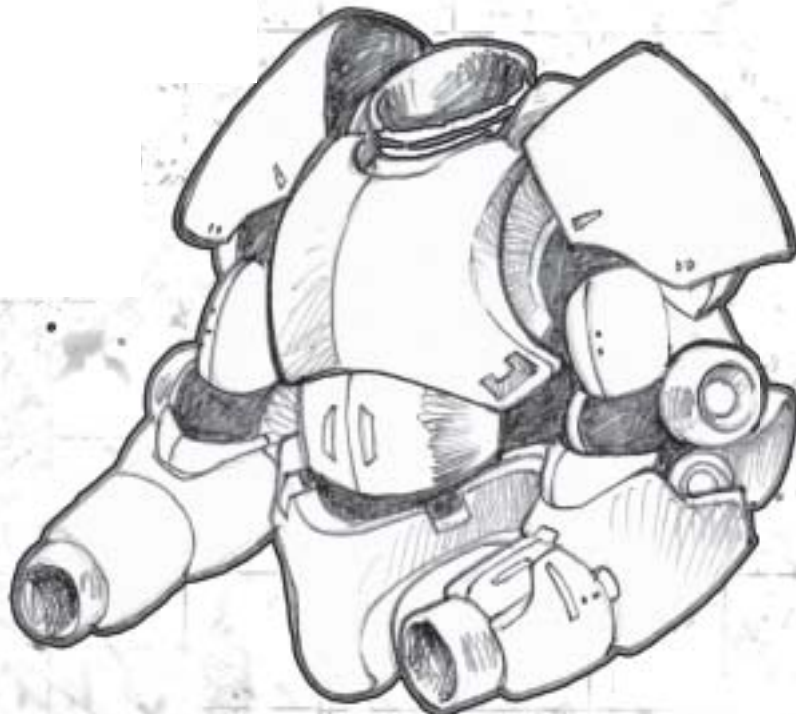
Mechanical Carapace, Improved (TL 12): Using new and improved servos and pneumatics, this is a more efficient update to the original

mechanical frame used to mount the carapace components. Able to operate for 24 hours on a three litre fuel cell, the suit still adds +1 to Strength but does reduce Dexterity by -1 while worn.

Powered Plate, Ceramic Alloy (TL 13): An advanced form of the more common powered plate made of advanced ceramic-metal hybrid alloys, this armoured suit has a greatly higher rate of protection against lasers, flamethrowers and other heat/fire-based attacks, listed in the profile overleaf. Also, while the suit is running efficiently on its eighty-five hour power cell (Cr. 250), the wearer is at +2 Strength and -2 Dexterity.

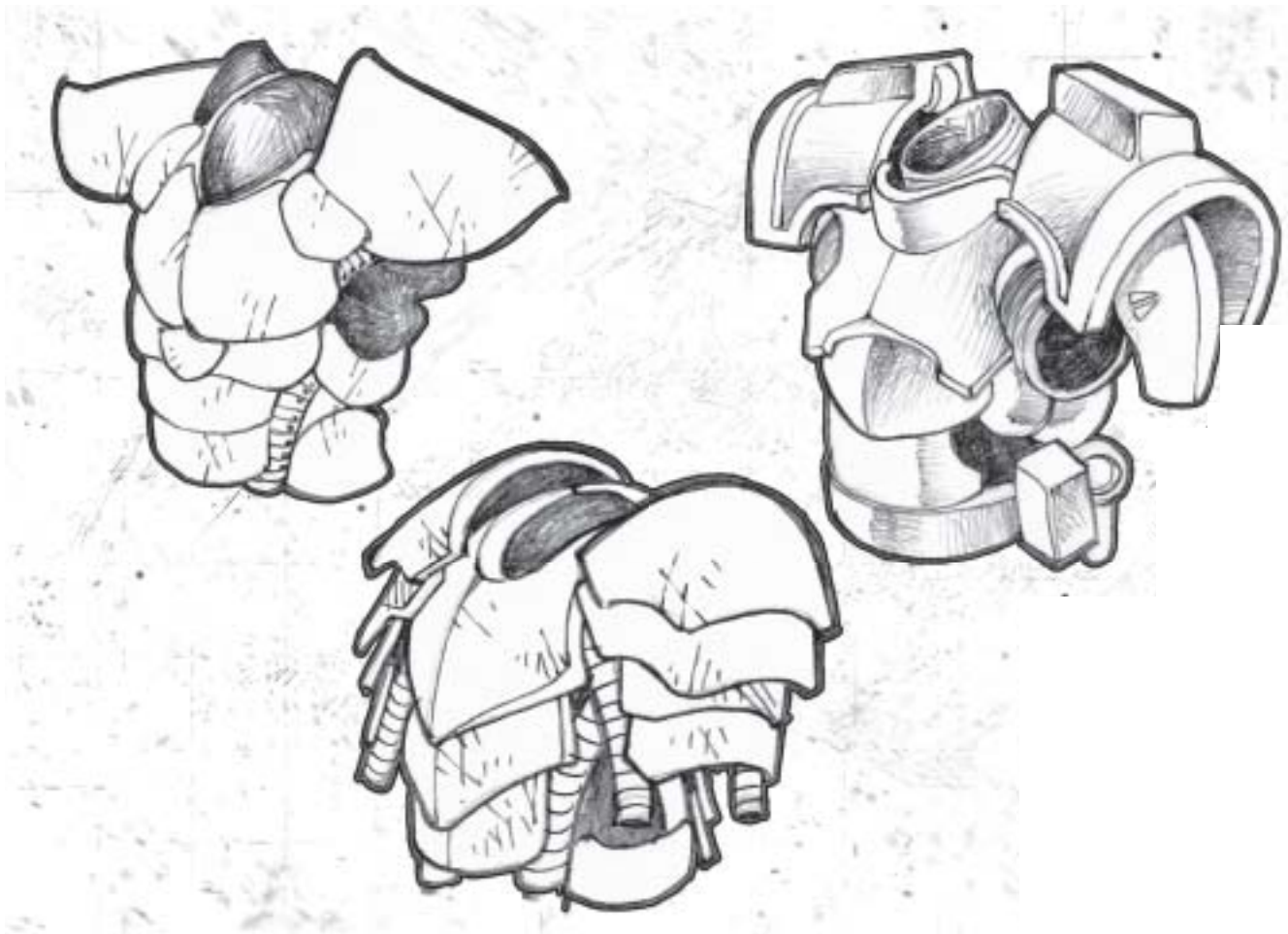
Powered Plate, Advanced (TL 14): Made from the finest materials and using the most advanced mechanical components to move its limbs, advanced powered plate is rarely used due to its high cost, being available to either elite forces or very wealthy governments or mercenary companies. While it is powered by its 200-hour power cell (Cr. 350), the armoured suit adds +3 to the wearer's Strength and reduces their Dexterity by -1. Unlike other powered suits, advanced powered plate is considered to be completely shielded from radiation, eliminating any rads the wearer might otherwise be subjected to.

Powered Plate, Grav-Enhanced (TL 15): A higher tech version of the advanced powered plate suit, this variety of high-tech powered armour comes equipped with small gravitic gyros located in its limbs and torso. These gyros increase the augmentation of the wearer's abilities without drawing too much off its 500-hour power cell (Cr. 750) and increase the wearer's Strength by +3 while only reducing the Dexterity of the wearer when unpowered and only then by -1. Additionally, the grav-enhanced powered plate can use the grav-gyros in its legs, when powered, to move faster with +3 metres per Minor action added to the wearer's speed.



PERSONAL PROTECTION

Armour Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Mechanical Carapace	9	8	Vacc Suit 2	10,000	30
Powered Plate	10	12	Vacc Suit 1	250,000	40
Improved Mechanical Carapace	12	10	Vacc Suit 1	150,000	25
Ceramic Alloy Powered Plate	13	12 (20 against lasers and flame weapons)	Vacc Suit 1	450,000	45
Advanced Powered Plate	14	14	Vacc Suit 0	1,500,000	30
Grav-Enhanced Powered Plate	15	15	Vacc Suit 0	4,000,000	32



Battle Dress

Representing the ultimate in individual protection, Battle Dress can be considered to be an advanced and powered version of combat armour, though it is constructed very differently. Battle Dress enhances the strength and senses of individuals wearing it with variable feedback personal controls, servo-powered limbs and various kinds of electronic assistance.

Characters wearing battle dress are treated as having enhanced characteristics for the purposes of carrying and combat but not for taking damage. The basic model does not come with any weapons built in; troops are usually armed with the best small arms and energy weapons available. It is not uncommon for Battle Dress to be fitted with an integral grav belt and/or decoy launchers but this is not universal.

Battle dress protects against environmental hazards like a Hostile Environment Vacc Suit. A suit of battle dress can carry one or more enhancements; optional systems increasing its capabilities. Some enhancements take up little space and can be mounted on any suit. Others must be fitted into a specific receptor on the suit.

Battle Dress, Improved (TL 14): Improved battle dress costs Cr. 1,500,000 more than the standard TL 13 version. It contains a grav belt as standard and armour protection is increased by 2 points. Strength is increased by an extra 2 points. The internal electronics system is also better, treated as a Computer/3 (though still running tactics 2). TL 14 versions of all TL 13 battle dress variants are available.

Battle Dress, Artillery (TL 13): Artillery battle dress is slightly more heavily armoured than standard and has heavier servos that enable it to carry a powerful weapon. Treat the user's Strength as being increased by +6 rather than +4. Dexterity is still +4. A single battle dress heavy weapon can be carried. The right arm also contains a built-in 4mm gauss pistol with 500 rounds for self-defence. The suit is too clumsy to use hand-held weapons normally. If used, such weapons are subject to a -2 DM to all hit rolls. This does not apply to built-in weapons.

Battle Dress, Assault (TL 13): Assault Battle Dress sacrifices mobility for extra armour and firepower. A short-barrelled laser weapon, equivalent to a stagger laser rifle is fitted in the suit's left arm and a RAM grenade launcher on the right shoulder allows for self-support and the engagement of various special target types. The launcher is fed from three 6-round magazines. The magazine is selected at the time of firing, allowing for different types of ammunition. A hand-held weapon is almost always carried by assault troops.

Battle Dress, Combat Pioneer (TL 13): Combat Pioneer battle dress is slightly heavier than the standard model. It mounts no weapons but has a specialist sensor package designed to detect explosives and other hazards and can utilize a range of backpack-mounted powered tools including drills, shovels and decontamination equipment. The suit can self-decontaminate.

Battle Dress, Command (TL 13): The Command configuration is used by officers. Its defensive capabilities are much the same as those of standard infantry but it carries a more comprehensive communications suite and command-assist computer software. This equipment provides a +1 DM to any Tactics rolls the wearer must make. No weapons are fitted as standard.

Battle Dress, Electronic Warfare (TL 13): Electronic Warfare variant uses a backpack ECM/ECCM unit to jam or monitor enemy signals and provides protection to other members of the unit with a small decoy launcher. The suit contains no weapons; small arms are carried as normal. The EW unit takes up the space normally used for enhancements.

Battle Dress, Logistics (TL 13): Logistics Battle Dress is a little slower than the standard suit and is optimised for load-carrying capability. The user's Strength is treated as enhanced by +6 rather than +4. The Logistics Suit allows personnel to carry small-vehicle loads of ammunition and supplies into places where only infantry can go. Standard packs include field repair kits (with spares), bulk ammunition boxes and fast-load kits for close support grenade launchers. The suit contains no weapons; small arms are carried as normal. Logistics suits are also used by some battlefield medics.

TRAVTECH PRESENTS...

BATTLE DRESS

CLOSE SUPPORT (TL 13)

CLOSE SUPPORT BATTLE DRESS IS DESIGNED TO OPERATE WITH NORMALLY-EQUIPPED INFANTRY. IT IS EQUALLY MOBILE AND WELL PROTECTED. A SUPPORT LASER IS FITTED IN THE LEFT ARM OF THE SUIT AND EACH SHOULDER MOUNTS A FULLY-AUTOMATIC RAM GRENADE LAUNCHER. EACH IS FED FROM A DUAL 24-ROUND MAGAZINE. THIS MEANS EACH WEAPON HAS 48 GRENADES AVAILABLE. MAGAZINES CAN BE SELECTED BETWEEN WHEN FIRING, ALLOWING FOR MULTIPLE AMMUNITION TYPES TO BE USED. THE MAGAZINES ARE DESIGNED FOR FAST RELOADING FROM A FEEDER CLIP. CLOSE SUPPORT TROOPERS USUALLY ALSO CARRY A HAND-HELD FUSION OR PLASMA WEAPON.



PRICE: CR. 4,250,000
WEAPON TYPE: BATTLE DRESS
SHIPPING DATE: AVAILABLE TODAY

REF: 978-1-906508--51-5/// TTAG 1631

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TRAVTECH PRESENTS...

BATTLE DRESS

BASIC (TL 13)

THE STANDARD BATTLE DRESS SUIT, COMBINING MOBILITY WITH PROTECTION AND WEAPONS CAPABILITY. THE SUIT INCREASES THE WEARER'S STRENGTH AND DEXTERITY BY +4 FOR THE PURPOSES OF SKILL CHECKS AND DELIVERING MELEE DAMAGE. THE SUIT HAS A BUILT-IN COMPUTER/2 RUNNING AN EXPERT TACTICS (MILITARY)/2 PROGRAM TO GIVE TACTICAL ADVICE. THE SUIT ALSO INCLUDES A COMPREHENSIVE COMMUNICATIONS SUITE AND SIX HOURS OF AIR.

PRICE: CR. 2,000,000

WEAPON TYPE: BATTLE DRESS

SHIPPING DATE: AVAILABLE TODAY

REF: 978-1-906508-97-3 /// TTAG 2641



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PLEASE NOTE: ALL USED GUNS ARE SOLD AS IS, WITH PERMISSION FROM THEIR PREVIOUS OWNER/S.

TRAVTECH PRESENTS...

BATTLE DRESS

PSI - ENHANCED (TL 16)

ALTHOUGH LESS BULKY THAN NORMAL BATTLE DRESS BY A SMALL AMOUNT, THIS SUIT OF ARMOUR IS INTERWOVEN WITH HIGHLY SPECIALISED CRYSTALLINE FIBRES AND CONDUITS THAT PICK UP ON THE LATENT PSION ABILITIES OF THE WEARER. THE MENTAL ENERGIES CREATED AND MANIPULATED BY THE CONDUITS CREATE AN INVISIBLE TELEKINETIC FIELD INSIDE THE PLATING OF THE SUIT, PROTECTING THEM FROM ATTACK. THE WEARER MAY ADD HALF (ROUND UP) HIS PSI CHARACTERISTIC TO THE PROTECTION RATING OF THE ARMOUR WHILE WORN TO REFLECT THIS FIELD. ADDITIONALLY, THE ARMOUR COMES FITTED STANDARD WITH A RETRACTABLE PSI CUTLASS AND A STANDARD MOUNT FOR ONE OTHER PERSONAL FIREARM RIG, NORMALLY TWIN-ACRS.



PRICE: CR. 10,000,000
WEAPON TYPE: BATTLE DRESS
SHIPPING DATE: 154 - 1106

REF: 978-1-906508-79-0 /// TTAG 1309



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PLEASE NOTE: ALL USED GUNS ARE SOLD AS IS, WITH PERMISSION FROM THEIR PREVIOUS OWNER/S.

PERSONAL PROTECTION

Battle Dress, Missile (TL 13): Missile Battle Dress is a little slower than the standard suit. It uses a backpack mount to carry a battlefield tac missile launcher, which can engage ground or airborne targets with light tac missiles. The suit carries one missile on the rails and three reloads; reloading takes three combat rounds. A short-range gatling laser is also carried for defence against missiles. The suit carries an integral gauss pistol and 500 rounds. Small arms can be used as normal but are subject to a -2 DM to hit due to the suit's bulk.

Battle Dress, Scout (TL 13): Scout Battle Dress is normally used by reconnaissance units, artillery spotters and the like. Some officers

and rapid-assault units also favour it for its superior mobility. A grav belt is fitted as standard and Scout Battle Dress offers less protection than standard versions but is somewhat faster.

Battle Dress, Ceramic Alloy (TL 14): Battle Dress designed and built with a layer of advanced ceramic-metal hybrid materials around its armoured plates, ceramic alloy battle dress is especially useful for soldiers that fight enemies who rely on laser or flame-based weaponry. Already rated highly efficient against normal attacks, this suit of Battle Dress has a greatly increased rate of protection against lasers, flamethrowers and other heat/fire-based attacks, listed in the profile below.

Type	TL	Protection	Required Skill	Cost (Cr.)	Mass (Kg)
Basic	13	16	Battle Dress 1	2,000,000	26 (6.5)
Advanced	14	+2	Unchanged	+1,500,000	-10%
Artillery	13	17	Battle Dress 2	2,750,000	30 (8)
Close Support	13	16	Battle Dress 2	4,250,000	32 (8)
Combat Pioneer	13	19	Battle Dress 2	6,000,000	36 (11)
Command	13	16	Battle Dress 2	3,800,000	26 (6.5)
Electronic Warfare	13	16	Battle Dress 1	2,500,000	27 (7)
Logistics	13	16	Battle Dress 1	1,750,000	28 (7)
Missile	13	15	Battle Dress 1	7,000,000	34 (9)
Scout	13	13	Battle Dress 1	4,000,000	22 (5)
Ceramic Alloy	14	16 (24)*	Battle Dress 1	4,500,000	31 (7)
Psi-Enhanced	16	15 plus Psi Bonus	Battle Dress 1	10,000,000	24 (6)

*The higher value of protection is provided against lasers, flamethrowers and other heat/fire-based attacks.



Battledress Weapons

The following weapons can be mounted on a suit of artillery battledress. They are not useable dismounted, though all have parallels in the conventional small arms and support weapons category.

Mass Driver (TL 10): The mass driver is a clumsy weapon with limited range, though useful for clearing foliage, light structures and people. Much smaller than the artillery version, a battle dress mass driver flings a cluster of heavy projectiles out to a range of 200m, gaining the bonus to hit of a shotgun.

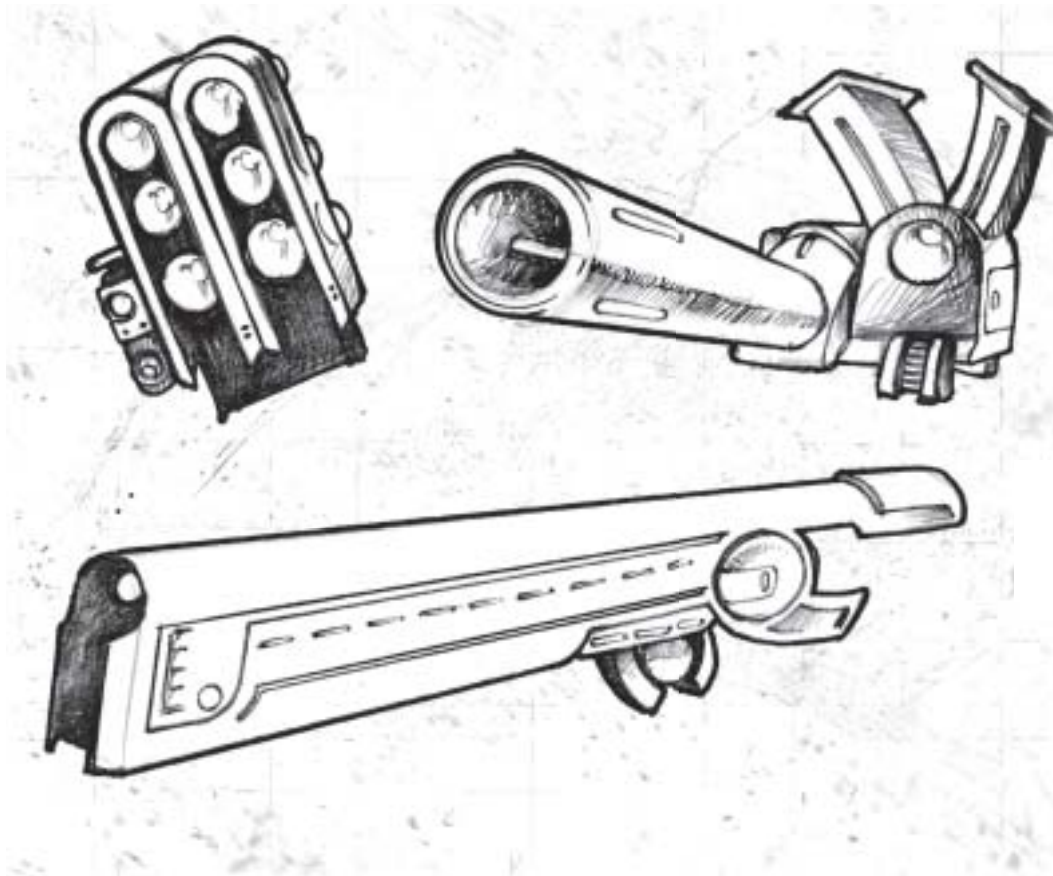
Projection Flamer, Superheavy (TL 10): A built-in weapon system for battle dress rigs replacing one arm of the suit with an array of heavy projection flame units. The weapon erupts with a torrent of atomised fuel in an expanding cone, scouring everything in its path with blistering heat and pressure. Battle dress operators that use projection flamers are used as urban pacifiers and trench warfare pinions, ignoring most cover and return fire. All projection flamers have a very high damage output but do not continue to burn on a normal target like other flamethrowers. Highly flammable targets (soaked in fuel, extremely furry and so on) will still suffer one round of additional burning damage as noted in the Flamethrower section.

Anti-Armour Gun (TL 11): Sometimes referred to as an anti-tank or AT gun, this is a standard weapon for artillery battle dress. It is an upgraded version of the RAMP anti-materiel rifle, firing dense 25mm discarding-sabot rounds. The weapon is fed from two 6-round magazines. Magazines can be selected between when firing, allowing for multiple ammunition types to be used.

SupportMortar(TL11): A light, magazine-fed 45mm mortar designed for indirect fire against targets within 1km. The mortar is fed from four 12-round magazines, which can be removed and replaced (by someone other than the gunner) while the weapon is firing from another magazine. The mortar delivers either single shots, 3-round bursts or all the rounds remaining in a given magazine. Projectiles are equivalent to 40mm grenades. Most types are available, except for stunbag and multiple projectile rounds. Magazines can be selected between when firing, allowing for multiple ammunition types to be used.

Area Denial Mortar (TL 12): A battledress-portable 50mm calibre version of the 'frag cannon', used mainly to cover an assault on lightly armoured troops or break one up. Alternative munitions are available at the same cost as the standard anti-personnel rounds. Mine-Clearance rounds fire a hail of small darts in a high arc, which embed themselves in the ground with the aid of a rocket motor and then detonate, destroying or triggering most mines. A mine dispenser round is also available. Each round sows a dozen tiny anti-personnel mines which will do 1d6 damage to the foot of anyone stepping on one. A standard combat boot has an armour value of 1 against such mines. At TL 13 a version capable of holding 40 rounds is available at a cost of Cr. 10,000.

Multiple-Launch Rocket (MLR) Pack (TL 12): A shoulder-mounted launcher holding six 60mm rockets ready for firing. 18 more are ready within the feed system. Rockets can be fired singly, in pairs, or all rockets remaining in the launcher can be fired in a rapid 'ripple'.



Gauss Flamer (TL 13): A powerful area-effect weapon using electromagnetics to hurl a stream of metal flakes towards the target. The weapon is treated as a standard Gauss Flamer (see the page xx) but has a magazine capacity of 40 shots rather than 8.

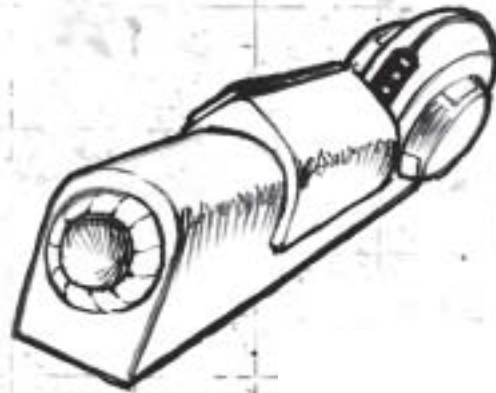
Plasma Support Mortar (TL 13): Similar in many ways to the 45mm mortar, the plasma mortar fires only one type of ammunition. Its shells can be set for airburst or impact detonation, at which point an intense burst of plasma is released. The weapon's internal magazine and power supply are good for 50 shots.

Anti-Armour Gun, Advanced (TL 14): An advanced version of the anti-armour gun, this weapon fires superdense 12mm projectiles at very high velocity, giving excellent performance against armour. Ammunition capacity is much higher than the basic model.

MagRail Support Weapon (TL 15): A three-barrelled version of the standard MagRail support weapon, effective out to about 200m.

Man-Portable Mount (TL 12): Not a weapon as such, this mount allows a conventional handheld weapon (usually a PGMP or FGMP) to be mounted on artillery battle dress. Cost Cr. 500 plus the cost of the weapon.

Weapon	TL	Range	Required Skill	Damage	Magazine	Cost (Cr.)
Mass Driver	10	Shotgun	Heavy Weapons (Launchers)	8d6	12	4,500
Superheavy Projection Flamer	10	Assault Weapon	Heavy Weapons (Flamethrower)	10d6+5	20	15,000
Anti-Armour Gun	11	Rifle	Gun Combat (Slug Rifle)	12d6 Super-AP	2 x 6	50,000
Support Mortar	11	Rifle	Heavy Weapons (Launchers)	As grenade	4 x 12	8,000
Area Denial Mortar/ 'Frag Cannon'	12	Rifle	Heavy Weapons (Launchers)	5d6+3	20	4,000
MRL Pack	12	Rocket	Heavy Weapons (Launchers)	6d6	24	10,000
Gauss Flamer, Battledress Mounted	13	Assault Weapon	Heavy Weapons (Flamethrower)	5d6+6	40	10,000
Plasma Support Mortar	13	Rifle	Heavy Weapons (Launchers)	7d6	50	30,000
Advanced Anti-Armour Gun	14	Rifle	Gun Combat (Slug Rifle)	14d6 Super-AP	50	50,000
MagRail Support Weapon	15	Shotgun	Heavy Weapons (Launchers)	8d6+2	40	400,000



Armour Options and Other Protective Equipment

Various other items exist which can be used for personal defence. Most can be applied to clothing or armour, or to a covering draped over whatever is to be hidden from view.

Additional Padding (TL 1): By layering furs, cotton and hides onto a subject (perhaps for warmth) the subject's movement is somewhat hindered but is a little better protected from physical attacks. A character wearing additional padding must subtract -1 from their Dexterity but adds +1 to their Protection rating on their armour against physical attacks (slug bullets, claws, knives and so on). Cr. 2. 5 kg.

Personalised Image (TL 2): Using a great deal of hardened enamels and pigments, any suit of armour can be artistically altered to reflect something individual about the wearer, part of a group he belongs to, or any other such reason. Whatever the reasoning and pattern behind colouring the armour, the wearer gains a +1 DM bonus on all Social Standing (or Charisma in the case of Vargr) Skill Tests where their reputation could be a factor. (Cr. 10).

Camouflage (TL 3): Using natural or artificial material to break up the distinctive outline of a person or equipment, camouflage makes it more difficult to detect enemy personnel or vehicles. Camouflage imposes a -2 DM to detect and hit at ranges of Long and greater, due to the difficulty of seeing the target. Camouflage can be defeated by infrared and other detection systems operating beyond the visual spectrum. (Cr. 20).

Eye Protection (TL 6): Eye protection, in the form of goggles, to keep small debris out of the eyes and to ward off bright light, can be added to any armour. At TL 9+, all armoured headgear includes eye protection that will prevent blinding by lasers at no extra cost. (Cr. 50).

Tactical Video Suite (TL 7): Attaching several small, out of the way video cameras and microphones to high-visibility areas of the armour or clothing, the suite monitors and records everything which happens to the individual for later viewing. Based on a 10-hour hard drive of information, the basic suite stores all information on a central component. Alternatively, these suites can be rigged to transmit to a central intelligence hub, allowing for real-time monitoring of the wearer and granting a +1 DM bonus to all Tactics rolls made by the viewer. (Cr. 50; 2 kg. Cr. 75 for real-time monitoring version).

Coolant Rig (TL 8): When wearing heavy armour in a hot environment it can become difficult for the wearer. This web of tubing filled with a chemical coolant makes a hot day on a volcanic planet or desert stroll into something far more comfortable and tolerable. (Cr. 100, 2 kg).

Environment Reader (TL 8): Those who spend long hours in their environmentally sealed armour or vacc suit can tire quickly breathing scrubbed, recycled air. This external, colour-changing sensor is adhered somewhere the wearer can see it and it shows in brilliant hue what the status of the atmosphere is around them. Green for oxygen contents, blue for methane, red for radiation and black for any one of the many airborne toxins the reader is built to pick up. (Cr. 100).

Magnetic Grapples (TL 8): Magnetic plates in the boots of armour allow the user to walk, albeit carefully, on a starship hull without artificial gravity.

Submarine Functions (TL 9): The colonisation and exploration of more water worlds brought about this extensive armour modification. Only available on sealed armours (vacc suits, combat armour, powered armour or battle dress), this process adds oxygenators, pressure valves, flow venting fins and small turbines that help propel the limbs and weight of the suit underwater (or a similar fluid). This augmentation allows a suit of armour to completely ignore any penalties for being submerged for as long as it has atmosphere. Cr. 200 times the Protection of the armour.

Computer Weave (TL 10): Computer weave can be added to any armour that does not already have a computer system and gives Computer/0 to that armour. Cr. 500.

At TL 11, improved computer weave gives Computer/1 for Cr. 1,000.

At TL 13, advanced computer weave gives Computer/2 for Cr. 5,000.

Extended Life Support (TL 10): This upgrade can be added to any armour providing life support (vacc suit, combat armour, powered armour or battle dress). By adding high-pressure oxygen tanks and recycling systems the suit can support the user for 18 hours. Cr. 10,000.

Medikit (TL 10): An internal medical scanner and drug injector, the medikit can be installed in combat armour, battle dress or a vacc suit. It automatically applies first aid if the wearer is reduced to Endurance 0. Treat the medikit as having a skill of Medical 3. It can also administer Fast Drug on command, or if life support systems are failing. CR. 5,000. A TL 11 medikit can also inject combat drugs, slow drug and slow drug antidote upon command and costs Cr. 10,000, coming with two doses of all three of these latter drugs.

Smart Fabric (TL 10): Smart Fabric resists stains and dirt, cleaning itself automatically. Smart armour sloughs off dirt, dust and mud automatically unless the feature is suspended for the purposes of camouflage. Cr. 1,000.

Friend or Foe HUD (TL 11): Several tiny scanners and cameras implanted in the armour keep track of registered friendly transponders (the suit comes with its own transponder) and marks targets without transponders as potential enemies. This information shows up on a visor-based HUD, allowing the wearer to know the exact location of allies and enemies with his line of sight or up to a kilometre away, whichever is greater, giving a +1 DM bonus to any Tactics throws. Friend or Foe HUD costs Cr. 4,000. Transponders cost Cr. 100 for 20.

Artificial Psionic Shield Helmet (TL 12): An artificial psionic shield helmet can be built into armour or be worn as a separate unit. It acts as a shield against psionic influences, though not always perfectly. It imposes a 1d6-3 penalty (minimum 0) to anyone attempting a psionic skill check targeting the wearer. Cr. 4,000

Infra-Red (IR) Chameleon (TL 12): This technology can be applied to any vacc suit, combat environment suit, combat armour, powered armour or battle dress. It is designed to reduce the thermal emissions of the armour, mimicking the temperature, of the wearer's current physical environment. This confuses thermal (heat) based detection and tracking systems, imposing a -4 DM on attempts to detect or track the wearer with such sensors. Cr. 5,000.

Grav Assist (TL 12): This upgrade can be added to battle dress, powered armour or combat amour only. It adds the functionality of a grav belt to the armour at the cost of Cr. 110,000. The TL 15 version costs Cr. 120,000 but lasts longer.

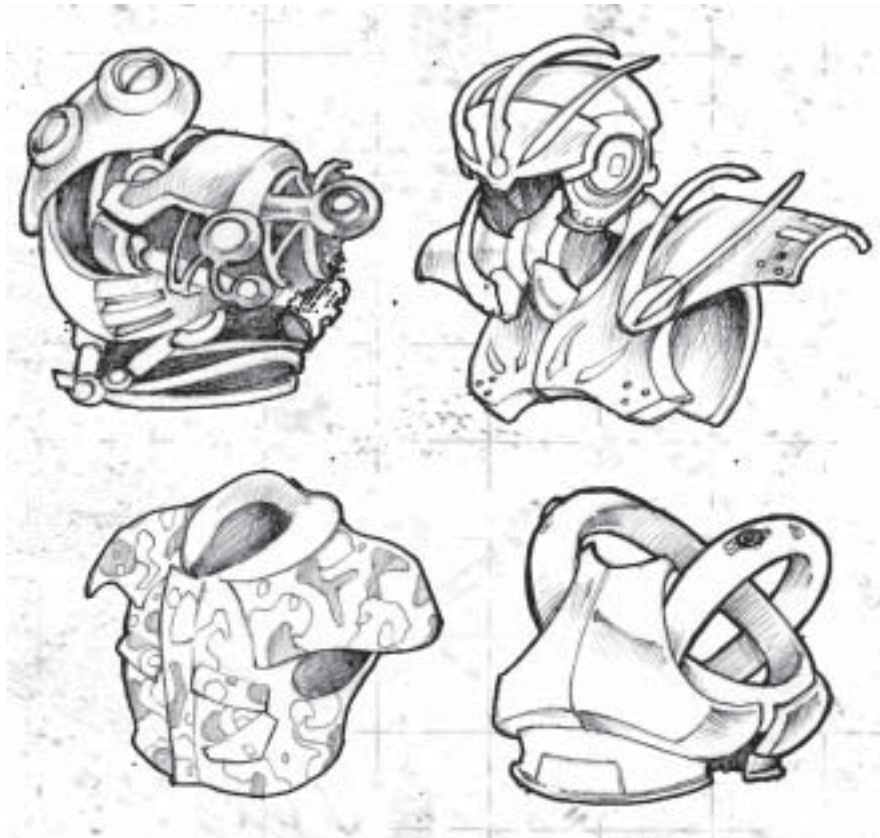
Gyro-Stabilizer Rig (TL 12): This upgrade can be added to Combat Armour or Battle Dress only, adding a localized motion-pivot at the waist which counters the effects of recoil at the cost of Cr. 10,000. By spending 1d6 minutes attaching the rig's arm to a heavy weapon or rifle, it reduces the weapon's recoil number by 2 (to a minimum of 0).

Sealant Sheath (TL 13): A thin body sleeve worn under any form of sealed armour (vacc suit, combat armour, powered armour or battle dress), the sealant sheath contains hundreds of thousands microscopic sensors that pick up on the weaknesses in environmental protection. These sensors know when the armour has suffered a breach and trigger millions of nano-capsules of ruggedised sealant to flood the leak and clog up the area almost instantly. (Cr. 250, 1 kg).

Visilight Chameleon (TL 13): A more advanced version of IR chameleon, which blends the armour into the background and makes it extremely difficult to detect with the naked eye or optical instruments. This gives a +4 DM to stealth rolls. Cr. 50,000.

Gyro-Stabilizer Rig, Advanced (TL 14): The TL 14 version of the Rig is internal, affecting any weapon the wearer is holding. Costs Cr. 50,000.

Null Shield (TL 17): This expensive and rare armour augmentation is extremely advanced, coating it with the same substance found in anti-psion ammunition and chemical psi-sedatives. Armour and clothing properly coated with this substance has complete immunity to any psionic ability targeting them. (Cr. 150,000).



SURVIVAL AND FIELD EQUIPMENT

Travellers need a range of items to help them cope with their environment and often want labour-saving devices or items that increase their comfort.

Space and Hostile Environment Equipment

Vacc Suits are dealt with in the section on armour. Other environmental protection and breathing gear is listed here.

Cold Weather Clothing (TL 0): A set of heavy outer garments designed to protect the wearer from extremely cold temperatures. Natural materials are used at lower techs. Higher-tech clothing is less bulky and protects the wearer better. The clothing reduces the damage from Artic conditions to 1d6/4 hours (see page 74 of the Traveller Core Rulebook), the time between damage rolls increases by 2 hours per TL above 0. The clothing is quite clumsy at low Tech Levels but usability improves with TL. Cr. 200.

Mask, Filter (TL 3): A filter set that allows an individual to breathe tainted atmospheres (types 4, 7 and 9). Also protects against the inhalation of heavy smoke or dust. The mask may or may not include goggles. Cr. 10.

Goggles/Shades (TL 5): Sunglasses or full goggles designed to protect the eyes from damage by bright light. At TL 7, reactive lenses are available allowing the user to keep his shades on while moving from dark to light conditions. At TL 9, shades can (for 10 times the cost) include automatic protection against very bright light such as lasers, nearby flares or nuclear detonations. The shades remain very dark for a full minute after protecting the user in this way and must be removed if the wearer wishes to be able to see anything. Cr. 20.

Mask, Combination (TL 5): A combination of both filter mask and respirator, which allows breathing of very thin, tainted atmospheres (type 2), plus all atmospheres listed under filter and respirator masks. Cr. 150.

Mask, Face (TL 5): A basic face mask and goggles used by aviators and riders of open vehicles. Protects against windblown dust and similar hazards. Cr. 20.

Mask, Environment (TL 5): An environment mask functions as per the TL 5 combination mask. In addition it is designed to fit with NBC or environment suiting, creating a sealed environment for the user and thus protecting against chemical and biological threats. The environment mask is designed to allow communications devices to be used and includes a drinking apparatus. An environment mask will not function in vacuum or underwater. Cr. 50.

Oxygen/Air Tanks (TL 5): A complete set of compressed oxygen tanks, allowing independent breathing in smoke, dust, gas, or exotic

(type A) atmosphere. Two tanks last 6 hours. Cr. 500. Refill of proper atmospheric mixture for any given race costs Cr. 20.

Respirator (TL 5): A small compressor that allows an individual to breathe in very thin atmospheres (type 3). Cr. 100.

Underwater Air Tanks (TL 5): Equivalent to oxygen tanks but designed for use underwater. Two tanks last two hour. Cr. 800. Refill of proper atmospheric mixture for race and expected depth costs Cr. 20.

Dive Suit (TL 6): A basic wet or dry diving suit designed to give a swimmer some protection from cold water. Cr. 60.

Rebreather (TL 6): The rebreather is a bulky backpack containing breathable atmosphere and a face mask that collects exhaled gasses and 'scrubs' them back into breathable gasses again. A rebreather provides six hours of breathable atmosphere and can be used to breathe in any environment that is not otherwise harmful, such as underwater. Wt 10 kg, Cr. 250.

Suit, Protective (TL 6): A sealed, air-conditioned suit designed to allow the user to survive in corrosive atmospheres. The suit's internal air supply is good for five hours. A heavy version is available at TL 7. Mass is the same but the cost is Cr. 1400. The Heavy Protective Suit also protects against insidious atmospheres. This is not a vacc suit; it will protect against low pressure (very thin atmospheres) but will fail after a short time in trace atmosphere or vacuum situations due to internal pressure. Cr. 1,000.

Geiger Counter (TL 6): This is a simple handheld device that picks up the ambient or projected radiation in the area and registers it to the user as a series of clicks and flashing lights. The normal TL 6 counter will detect the presence of any source of rads of 30 or more. A TL 8 version can determine exactly what element is producing the radiation and the direction it is coming from. Cr. 250

Radiation Suit (TL 6): A standard NBC suit will protect a user against contamination from irradiated particles of dust and such like but offers little or no protection against direct radiation such as solar flares or a reactor breach. A vacc suit will offer some protection but for areas of hard radiation a dedicated radiation suit is required, reducing exposure by 100 rads. Cr. 5,000.

Mask, Life-Support (TL 7): The Life-Support, or "space" mask is functionally similar to the TL 5 environment mask but can be used in space or underwater down to a depth of 5m. It gives a full seal with NBC or other emergency suit such as a body pressure sleeve. The mask has integral filters but is normally connected by a hose to a belt-mounted filter/blower unit or 1-hour air tank. Using the belt filter makes breathing easier and reduces fatigue. The air tank is necessary for vacuum or underwater use. Cr. 1,000. A filter unit

and a single air tank are included in the mask price. Additional units cost Cr. 500.

Purification Tabs (TL 7): These small, chalky white tablets are stored in waxed paper envelopes to keep them from being exposed to airborne humidity. When dropped in a container of water (one tablet per 4 litres) there is a powerful effervescent reaction, a foam forms and traps all natural impurities before rising to the top of the water, to be poured or scraped off. While these tablets will not neutralise poison or radiation, they are essential to eliminate natural bacteria and pollutants. Package of 10 is Cr. 5.

Rescue Ball (TL 7): A rescue ball is intended to allow personnel to survive a pressure breach in a space vessel. It consists of a 2m-diameter ball of reflectorised plastic and a small air bottle good for four person-hours. They are usually located at strategic points around the ship and in staterooms. Intended for untrained personnel, they are very easy to use. The character opens a zipped flap, climbs inside and zips the opening shut, then triggers the air bottle to inflate the ball. A clear section allows vision and most rescue balls have a "glove" a character can insert her arm into in order to manipulate outside objects in addition to a towing or securing tether. The ball is reasonably robust and gives a good radar return due to the metallic coating. A person inside one can move around (assuming there is some gravity) by walking on the inside, treadmill fashion. Balls are normally intended for the use of a single person, though an additional individual can get into one at need, halving the time before air supply runs out. Cr. 150.

Thrust Pistol (TL 7): A handheld reaction jet using compressed gas, a thrust pistol allows independent manoeuvre during EVA (Extra-Vehicular Activity, or "Spacewalk") operations. The pistol's internal reserves allow for an hour of moderate manoeuvring or three minutes of continuous thrust. Cr. 1,000.

Artificial Gill (TL 8): An artificial gill extracts oxygen from water to allowing the wearer to breathe for an unlimited time while submerged. Functions only on worlds with thin, standard, or dense (type 4 through 9) atmospheres. Artificial gills are used with a mask of some kind, such as the life-support mask. Wt 4 kg, Cr. 4,000.

Deep-Diving Suit (TL 8): A heavy, armoured suit designed to allow the user to operate in extremely deep water. The deep-diving suit includes an advanced gel-breathing system which is tremendously unpleasant to use but allows six hours of operation. The gel is tiring to breathe and there is a hazard in both donning and removing the suit, in that the character must "drown" in the gel and then get it out of her lungs afterwards. Cr. 20,000.

Dive Suit, Heated (TL 8): An insulating suit fitted with small heater coils powered by a belt battery unit. A heated dive suit allows the user to operate without harm in very cold water for several hours. Cr. 650.

Environment Suit (TL 8): Designed to protect the wearer from extreme cold or heat, the environment suit has a hood, gloves and boots but leaves the face exposed in normal operations. A mask or rebreather can be attached but truly hostile situations call for the heavy-duty hostile environment vacc suit. The suit is not powered or heated; it merely insulates and reflects heat well. Cr. 500.

Heatproof Suit (TL 8): A reflective and insulating suit and helmet, the heatproof suit protects the wearer from all but the most extreme temperature conditions. The suit is rather clumsy and all Dex based skill throws are made with a -1 DM. Treat as a Fireproof Suit against flame weapons and Ablat against lasers. Cr. 100.

Heatsuit (TL 8): A coverall-like garment incorporating battery-powered heater coils. The heatsuit eliminates the ill effects of temperatures down to -60° Celsius. It is not damaged by immersion in water but will not function while the user is immersed. The battery lasts 12 hours and can be recharged or replaced. The suit can also be directly powered from the output socket of a vehicle power plant or a fusion still. Cr. 340.

NBC Suit (TL 8): An advanced protective suit composed of "breathable" fabric preventing heat build-up while protecting the user from airborne contaminants, biological or chemical weapons and radioactive fallout. It offers no protection from direct radiation or vacuum and requires an environment or life support mask to be effective. NBC suiting is designed to be easy to decontaminate and is only slightly more cumbersome than the normal field uniform worn by soldiers. Cr. 250.

Vacc Suit Emergency Kit (TL 8): A belt-carried pack, the emergency kit is designed to allow a vacc suit user to save himself or someone else in the event of an accident and to increase the chances of a search finding him. Yanking a lanyard will release a tethered balloon reflector. This is somewhat similar to a rescue ball but filled at very low pressure. It inflates into a 3m-diameter radar reflector which is tethered to the user's belt. It vastly increases the user's radar cross-section and makes a search more likely to find him. The kit itself contains a radio beacon/repeater, a handheld strobe beacon, tethering cord, suit patches, spray sealant for multiple small holes, a 30-minute replacement air bottle and two hand-held gas thruster units. The latter are designed to allow the stranded spacefarer a last-ditch attempt to reach safety. The kit also contains a metallic reflectorised blanket increasing radar detectability and reduces absorbed radiation in the event the spacefarer is caught outside in a solar flare, decreasing exposure by 100 rads. Cr. 500.

Desert Suit, Advanced (TL 9): An all-in-one suit designed to minimize moisture loss by trapping sweat between the porous inner layer and impermeable outer one. The suit is reflectorised to reduce the heating effect of the sun (though a dulled or camouflage option is also available). It includes a hood, face mask and goggles. Cr. 1,000.

Portable Airlock (TL 9): A flexible pressure tent kept rigid by a collapsible frame, the portable airlock has two openings and thus can be attached to a bulkhead to create an emergency airlock. It is most commonly used when cutting into a starship hull for rescue purposes, to preserve the environment inside but can be also used to seal a building against NBC conditions. The airlock is big enough for two vacc suited persons at once and is reasonably robust. It comes with a small air bottle to initially inflate it but then relies on pressure from the area being cut into to remain inflated. Cr. 1,000.

Rescue Bubble (TL 9): A large (2m diameter) plastic bubble. Piezoelectric layers in the bubble wall translate the user's movements into electricity to recharge the bubble's batteries and power its distress beacon and a small oxygen tank both inflates the bubble and provides two man/hours of life support. Rescue bubbles are found on both space and sea vessels as emergency lifeboats. Cr. 600.

Purification Tabs, Improved (TL 9): These small, gelatine-coated tablets are a standard part of a scout's travelling gear. When broken open and dropped in a container of water (one tablet per 8 litres) there is a fast reaction similar to carbonation which cleans it of many foreign contaminants. These tablets will eliminate the dangers of pollution, natural toxins and chemical additives but have no effect upon radiation, disease or synthetic poisons. Package of 10 is Cr. 15.

Thrust Pack (TL 9): A basic manoeuvring system that can be incorporated into a vacc suit backpack, the thrust pack allows four hours of moderate manoeuvring or about 15 minutes of near-continuous thrust. The unit includes a simple inertial autopilot and stabilizer/spin-correction computer but a Zero-G skill check is still needed to use a thrust pack accurately. Thrust packs (of all kinds) can only be used in microgravity. Cr. 2,000.

Bulkhead Patches (TL 10): A set of variously-sized rigid and flexible bulkhead patches, plus adhesives and sealant to allow pressure breaches in a starship or space vessel to be temporarily repaired. The patches are no substitute for real damage control and tend to fail after 4d6 hours. They are mainly used to allow the crew time to make a more permanent repair. Cr. 150.

Cold Weather Clothing, Advanced (TL 10): Using quick-drying, waterproof and super-insulating materials, advanced cold weather

clothing protects against frigid weather (-20° Celsius or below). The suit is not heated but it is designed to allow temperature to be regulated by openings and partial removal. Cr. 500.

Complete Hydro-Reclamation Suit (CHRS) (TL 11): This complete coverage bodysuit is designed to recycle all of a body's fluids and wastes back into usable materials for the body in order to survive much longer in a desert or other arid environment. Like its predecessors, the suit is reflectorised to reduce the heating effect of the sun. It covers the entire body, covering all orifices and inserting several 'replenishment' tubes into the body. Wearing an empty CHRS can effectively allow the character to go up to thirty days without needing water and fifteen days without food before needing to have its internal scrubbers and injectors cleaned. Cr. 10,000; 6 kg.

Hydro-collector (TL 11): An oval-shaped bowl of sorts sitting atop a wide-footed tripod nearly a metre tall when extended, the hydro-collector uses tiny electromagnetic pulses to draw moisture out of the air and collect it as drinkable water. One eight-hour collection session will provide a certain amount of drinking water depending on the average humidity in the local atmosphere. In arid areas this will produce enough water for one man-day. In temperate areas; three man-days. In moist or humid areas; five man-days. The device is solar powered and recharges while it is collecting, in most cases. Cr. 1,000; 8kg.

Thrust Pack, Long-Range (TL 12): An advanced manoeuvring system that permits up to 48 hours of 2g thrust using standard starship fuel. Cr. 14,000.

Purification Tabs, Advanced (TL 13): These tiny phosphate-based tablets make any source of water (and some soft drinks or liquor!) into clean, fresh drinking water. When added to a container of liquid that is at least 80% water (one tablet per 10 litres) there is an invisible reaction that eliminates all foreign substances save for the H₂O. This means that radiation, poison, additives or the intoxicating alcohol in a liquid will be instantly nullified and sublimated as pops of bubbles on the surface. Package of 10 is Cr. 50.

Thrust Pack, Advanced (TL 14): An smaller version of the long-range thrust pack, using grav plates instead. Performance is similar. Cr. 20,000.

Tools and Field Supplies

While not the most exciting of items, field supplies can be amongst the most essential. A group of travellers having to camp in the open in a downpour, or ascend a cliff without ropes, will quickly come to understand that the key to success is logistics, not tactics.

Boots, Hiking (TL 1): A set of sturdy boots protecting the wearer's feet and ankles from rough ground, thorns and such like. Higher-tech boots are lighter and more comfortable. Hiking boots are not considered to be armour as they give no protection from weapon damage. Cr. 50.

Ice Terrain Kit, Personal (TL 1): A set of accessories making crossing ice or climbing icy surfaces a little less hazardous. Includes crampons for boots, snowshoes, rope and a brightly-coloured "rescue blanket". The ice terrain kit does not include clothing. Cr. 50.

Snowshoes (TL 1): A pair of wide shoes designed to spread the user's weight and make walking on soft surfaces like snow or volcanic dust safer, reducing any penalties to movement, in these conditions, by half. Cr. 30.

Grapnel and Cable (TL 2): A hooked device used to attach a rope for climbing purposes, plus 10m of stout cord. Grapnels can be thrown or propelled by a launcher. Getting one to attach itself can be tricky and requires a DEX-based characteristic check at a difficulty level depending upon the surface. A rugged rockface, wall or tree would require 8+; attaching to smooth surfaces or when trying to get the grapnel to bite into soil may be much higher. Cr. 35.

Tool Set, Carpentry (TL 2): A basic set of woodworking tools including standard tools necessary to cut, shape and build with wood. Wt. 12 kg, Cr. 300.

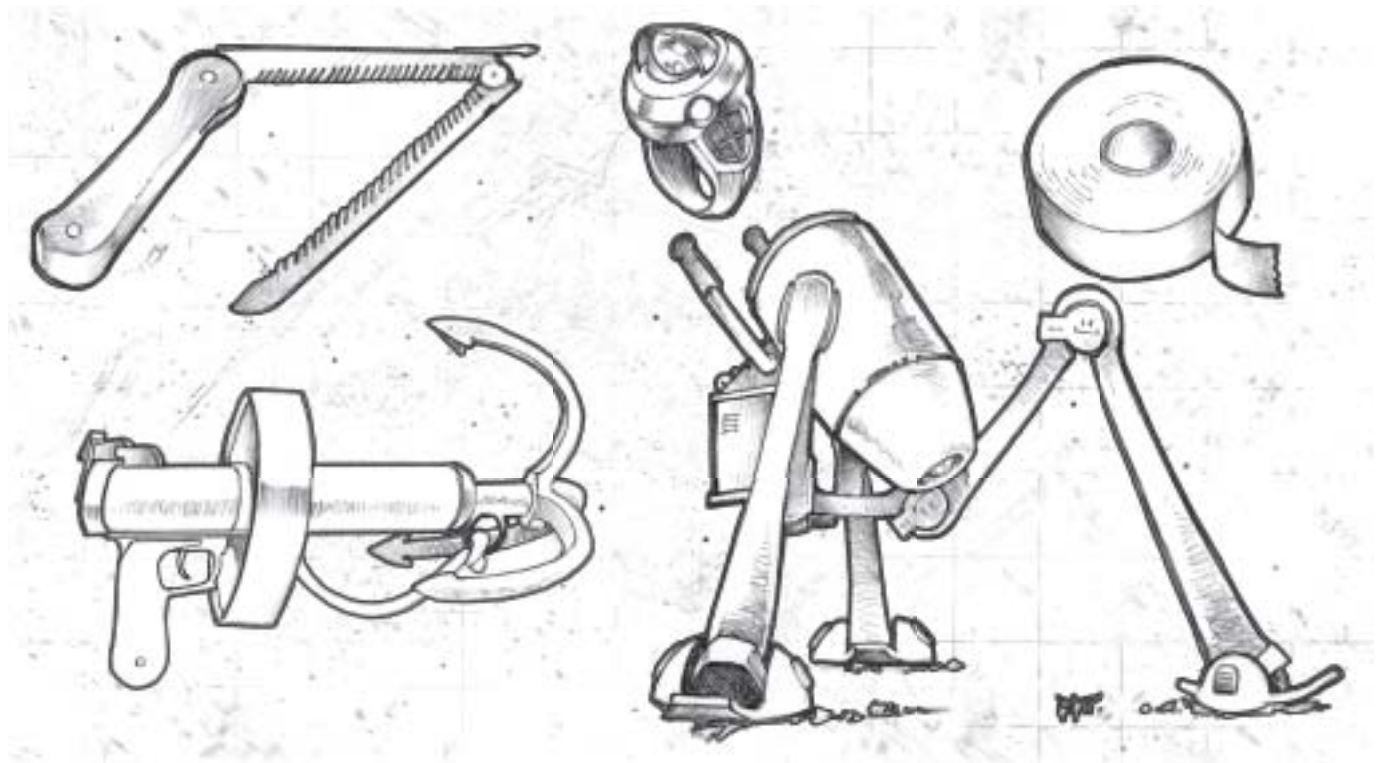
Axe, Ice (TL 3): A small axe optimised for digging into ice when climbing. Treat as a Hatchet in combat. Cr. 50.

Backpack (TL 3): A basic carrying bag with shoulder straps and external pockets. From TL 6, backpacks are more waterproof; enough to keep the contents dry during a brief immersion if properly sealed. At TL 7 and for Cr. 150, a "Bivvy Pack" is available, which includes a waterproof blanket and hood that fold out of the lining, allowing the emptied pack to be used as a sleeping bag or ready-made bivouac. Cr. 45

Canteen (TL 3): A belt-mounted metal or plastic container for water (or other liquids); some versions include a detachable mess-kit as well. Contains 1.5 litres of liquid. Cr. 30.

Compass, Magnetic (TL 3): Indicates direction of magnetic north, if any exists. Cr. 10.

Field Kit, Personal (TL 3): A basic field operations and survival kit containing a bush hat, pants, shirt and a warm jerkin, a waterproof poncho/blanket, water bottle, belt pack with fire-starting equipment and 1 day's (almost inedible) iron rations and a machete (treat as a Blade). Boots must be purchased separately. Above TL 6, the kit also includes half a dozen chemical lightsticks. Cr. 100.



Pocket Magnet (TL 3): a small but very powerful horseshoe magnet capable of lifting 1 kilogram against 1G. Cr. 20.

Skis (TL 3): A set of skis and poles. Skis make travel over snow much faster and less fatiguing, eliminating any speed penalties if on level ground and (at least) doubling speed when moving downhill. Cr. 75.

Spade/Shovel (TL 3): A basic digging tool with many uses. Wt. 1 kg, Cr. 5.

Swimming Equipment (TL 3): Includes swim fins, face mask and a snorkel. Improves speed and manoeuvrability underwater. Cr. 200.

Tool Set, Excavation (TL 3): A set of basic digging tools; shovels, picks and sledgehammers to equip 2-3 people. Working with improvised tools instead of these will increase the time taken for any excavation task by at least four times. Wt. 12 kg, Cr. 30.

Tool Set, Combat Engineering (TL 3+): A slightly more specialized toolkit for the construction of field fortifications and removal of obstacles, along with other military applications. A basic kit contains spades, entrenching tools, wire cutters, probes, marking tape and the like. It does not change significantly until TL 6, at which point a small metal detector is included. From TL 8 onwards, a dozen explosive strips are included. These can be used for cutting, moving/cracking small obstructions or detonating mines. The basic kit costs Cr. 150 and weighs 12 kg; more advanced kits cost Cr. 300 at TL 6 and Cr. 500 at TL 8 with both weighing 15 kg.

Tool Set, Interrogation (TL 3+): A set of interrogation tools. Depending on the user, these may be drugs, devices designed to inflict pain, or just restraints to prevent escape. A basic kit costs Cr. 75; more advanced kits cost Cr. 25 times the Tech Level.

Tool Set, Weapon Engineering (TL 3+): Tools for the repair and maintenance of weapons. As a rule, a tool set of any given Tech Level can be used to work on weapons operating on similar principles for up to 2 Tech Levels higher (a set for a TL 5 rifle will work for a TL 7 autorifle, for example but a tool set designed for a high tech slugthrower will be of no use in maintaining a laser rifle). The kit costs Cr. 100 times its Tech Level and weighs 12 kg.

Chain, Medium (TL 4): 10m of moderately heavy chain, suitable for heavy lifting or towing, or to anchor a light water vessel. Cr. 100.

Climbing Kit, Basic (TL 4): A set of accessories designed to make climbing easier. Includes a safety harness, gloves and rock shoes, belt with secure holders for tools and head protection. The kit provides a +2 DM to attempts to climb rock surfaces. Cr. 100.

Parachute (TL 4): A basic parachute kit including harness and reserve chute. Cr. 250.

Pitons (TL 4): Metal spikes designed to be hammered into rock crevices to secure a rope for climbing. Cr. 5.

Piton Hammer (TL 4): A small hammer used for hammering pitons into rock. Cr. 10.

Return Mirror (TL 4): Used in surveying, a return mirror is used to reflect a light beam directly back along its path from within a 15° arc. It is usually used with a laser rangefinder to give very accurate results. Dimensions: 250 x 300 x 200mm. Cr. 500.

Scientist's Field Kit (TL 4): A basic set of scientific equipment for taking and examining samples. Includes a small microscope, sample containers, gloves and so on. A metallurgist's kit will contain slightly different equipment to the one used by a forensic scientist but the basic cost remains the same. The field kit does not include any electronic sensors or similar complex equipment. Cr. 100, Wt 6kg.

Slaplock (TL 4): A simple mechanical or combination lock that can be "slapped" onto any door or container to secure it. The Slaplock will prevent the portal or lid from opening by accident and will defeat casual attempts at entry but it is not particularly robust and can be easily broken. The primary use of slaplocks is to prevent casual pilfering, to detect intrusion or to secure a broken portal for the time being. Cr. 40.

Wrist Watch (TL 4) (Cr. Varies, TL 4, negligible weight) A simple timepiece. Price determines quality and functionality. A variety of gimmicky 'survival watches' and 'space crew chronometers' are available. Some contain reasonably useful accessories but most are suitable only as gifts to be given by misguided but well-meaning relatives. A basic watch costs Cr. 10. Quality (and, often, the number of gimmicks) increases with price. 'Prestige' watches can cost Cr. 1000 or more but do little more than look good while keeping time.

Water Dye (TL 4): A tube of liquid dye which could be used to highlight a patch of water with a bright, easily spotted colour visible from the air. The primary drawbacks of this form of signalling are the short duration of the coloured patch (which lasts 15 minutes in calm waters and far less in stormy weather) and the fact it cannot be spotted at night. At TL 9 the latter problem is overcome by using a phosphorescent dye which is visible both at day and at night. Cr. 25.

Attaché Case (TL 5): A lightweight metal case used to transport documents, scientific instruments and other items throughout Charted Space. If used as cover, a standard attaché case is worth 2 points of armour. Cr. 75.

Cutting Torch (TL 5): A basic cutting tool using incandescent gas fed by a heavy canister. Cutting torches are effective against most metals and alloys but will not work on starship hulls or armoured vehicles constructed at TL 10 or higher. Cr. 500.

Desert Kit, Individual (TL 5): A basic desert outfit including loose-fitting trousers and shirt, a wide-brimmed hat, sunglasses, large water bottle (2 litres) and mineral tablets. Cr. 75.

Fire Extinguisher (TL 5): A simple handheld firefighting device. More advanced units reduce weight by 0.5kg per TL down to a minimum of 1.5kg and can be tailored to specific fire types. If used to put out a person who has been subject to a flame attack the extinguisher will reduce damage by half during the first combat round it is used before eliminating all damage in subsequent rounds. Cr. 50.

Flare, Illuminating (TL 5): A small parachute flare designed to be fired from a launcher to illuminate an area. The flare casts harsh, bright light for 1 minute before falling to the ground in a standard or dense atmosphere, half a minute in thin atmosphere. It may start fires if it hits the ground before burning out. A free-standing area-illuminating flare costs Cr. 50 and burns for 2 hours. Cr. 25.

Flare Launcher (TL 5): A simple pistol or tube type launcher for use with signalling or illuminating flares. Used as a weapon, a flare gun is highly inaccurate, imposing a -2 DM on all hit rolls and only does 1d6 damage, though it may set flammable objects on fire. Cr. 75.

Flare, Signalling (TL 5): A coloured flare designed to be highly visible but which casts little light, launched from a flare launcher. A signal flare can last for a few seconds to several minutes, depending upon its design. Cr. 5.

Flare, Whistling (TL 5): A brightly coloured flare built to emit a piercing whistle when drifting back to the ground after it has been fired. This sound is not terribly pleasant but it can be heard for 2d6 miles in every direction and lasts for five minutes after being fired. Cr. 6.

Generator, Internal Combustion (TL 5): A portable 10 kw/h generator burning liquid hydrocarbon fuel in an internal combustion motor to generate electricity. Uses 2.5 litres of hydrocarbon fuel per hour. Cr. 50.

Ice Terrain Kit, Vehicular (TL 5): Comprises tire studs or chains, a light snowplough blade and other components to allow a vehicle to cross icy or snow terrain with less chance of mishap. A suitably equipped vehicle provides a +1 DM to all Drive skill checks in these conditions. Cr. 1,000.

Rope (TL 5): 10m of strong but light rope made from natural or artificial fibres, able to hold 150 kilograms before breaking. Cr. 20.

Welding Kit, Electric (TL 5): A basic arc welding kit useful for many light applications. It is self-powered from batteries but requires an external power source for big jobs. Arc welding gear is really only useful on devices built up to TL 10. More advanced welding systems are needed to work on materials of TL 10 or higher, otherwise weld points become a serious area of weakness and in some cases will not 'take' at all. Cr. 1,500.

Water Purification Kit (TL 5): A basic set of filters and chemical purification tabs. Cr. 8.

Tool Set, Mechanical (TL 5): A set of standard mechanical and plumbing tools including everything necessary to repair and alter mechanical devices; wrenches, pliers and a largish hammer, among other things. Wt. 12 kg, Cr. 1,000.

Tool Set, Metalwork (TL 5): A basic set of tools for working, welding and shaping metal. Wt. 12 kg, Cr. 3,000

Chain Saw (TL 6): A motorized saw for cutting and shaping trees. The chain saw could possibly be used as a weapon but it is very awkward and imposes a DM of -2 to hit the target. Damage is 4d6 if it does strike home. Cr. 500.

Duct Tape (TL 6): A strong, fabric-based, multi-purpose adhesive tape. Useful for hasty repair work as well as for restraining and gagging prisoners, among many other things. Cr. 5.

Flare, Distress (TL 6): A free-standing incendiary flare giving off a bright light and large amounts of coloured smoke. The distress flare is designed to float upright in water. It is triggered by a lanyard and is very difficult to extinguish once lit, lasting for five minutes duration. It will burn underwater. Cr. 12.

Janitorial Kit (TL 6): A basic set of cleaning tools. Includes a vacuum cleaner, chemical storage and dispensing systems, along with other basic cleaning tools and supplies. Wt. 6 kg, Cr. 100.

Pocket Saw (TL 6): A slim but sharp collapsible saw which can be folded into a 12 cm x 6 cm x 6 cm box. Cr. 25.

Survival Kit, Personal (TL 6): A small backpack or belt pack containing personal survival equipment. Contents include:

- Small knife
- Fire-starting equipment
- Blanket/poncho
- 4 days' preserved rations
- Water bottle
- Compass
- Light cord or string
- Mirror
- Water purification tablets
- Survival manual

Higher-tech versions include more advanced equipment but basic functionality is the same. Cr. 50.

Disguise Kit (TL 7): Allows change of personal appearance on a temporary basis. Very limited results can be achieved unless the character possesses the Deception skill. Cr. 1,000.

Grapnel Launcher (TL 7): A grenade launcher-like device used to propel a grapnel to its target. It has a maximum range of 25 metres. If used as a weapon, damage is 2d6. Cr. 100.

Parawing (TL 7): An advanced parachute that allows much more control over where the user lands. The parawing kit includes a reserve chute and harness. Cr. 400.

Reflectorised Tarpaulin (TL 7): A thin and flexible metallic sheet whose shiny surface reduces incoming radiation by reflection. Decreases exposure by 40 rads. The standard version measures 5 by 10 metres. Cr. 400.

Squirrel Suit (TL 7): A nylon suit that gives the wearer a man-made version of patagia (flaps that allow gliding and limited 'flight'), the squirrel suit slows down a falling person's descent by half and can be used with Athletics (Coordination) to fly horizontally while gliding to the ground. Cr. 500.

Survival Kit, Vehicle (TL 7): A standard survival kit carried aboard ATVs, lifeboats and small craft throughout Charted Space. Contents include:

- 1 Survival Rifle, plus 50 rounds shot and 50 ball
- 1 Hatchet
- 1 Field Medical Kit
- 4 Personal Survival Kits
- 4 Personal Field Kits
- 4 Sets Emergency Cold Weather Clothing
- 4 Combination Masks plus extra filters
- 4 Canned Field Rations for 60 person-days (15 days for four people)
- 4 Bulk water storage containers (5 litres each) with filters
- 2 Water Purification Kits
- 2 Pressure Tent

Each kit is designed to equip 4 people. Cr. 8,000.

Tool Set, Electronic (TL 7): Necessary tools for basic electronic assembly and repair including instruments, soldering gear and so on. Wt. 12 kg, Cr. 2,000

Water Purification/Distillation Kit, Group (TL 7): Designed to provide safe drinking water for four persons, the kit contains chemical tablets and filters, plus a collapsible still (which requires a heat source; normally this is heat tablets provided with the kit) to distil liquids. Cr. 75. The tablets and filters are sufficient to last a month, replacements cost Cr. 25.

Tool Set, Rescue (TL 7): A comprehensive set of supports, cutting gear and other tools used to reach and rescue trapped persons. The kit does not include any sensors. Wt. 15 kg, Cr. 2,000.

Breaching Charge (TL 8): A pre-packed, shaped charge in a small canister fitted with adhesive pads for easy deployment. A breaching charge has very little area effect but is effective at blasting holes in walls, doors and so on, or in light armoured vehicles. Charges have many legitimate uses but require a suitable license to purchase in most areas. Typically characters with Explosives skill will possess such a license. Cr. 100.

Climbing Hoist (TL 8): The hoist is a battery-powered motor which drives a reel with 25 metres of cable. It has a hook on one side for attachment to a belt or harness and another hook on the opposite side of the cable. A rocker switch in the handle controls directions and an adjustable clutch controls speed; the reel could also freewheel. The battery lasts for one hour. A hand brake can lock the cable in position and a centrifugal brake keeps the cable from unwinding too rapidly. Cr. 175.

Climbing Kit, Advanced (TL 8): Includes a lightweight harness suitable for abseiling or rappelling, expanding mini-pitons for small rock crevices and more advanced versions of the accessories in the basic kit. Cr. 500.

Generator, Microturbine (TL 8): A portable 10 kw/h generator burning liquid or gaseous in a turbine to generate electricity. Uses 2 litres of liquid hydrocarbon fuel per hour. Cr. 170.

Personal Re-Entry Kit (TL 8): A personal re-entry kit is designed to permit a character to survive insertion into a planetary atmosphere without a vehicle. Normally used as a last-ditch survival measure, the technique of meteoric assault has been developed by the military into a standard combat tactic. It is also an extreme sport in some areas.

A re-entry kit consists of an alignment thruster, altimeter and a parawing, plus an ablative heat shield. The latter is deployed in the form of a frame and a foam covering that sets hard in seconds. If the user gets it just right, she can make a controlled re-entry to any world with at least a Thin atmosphere, protected from heat by the shield and finally making a descent by parawing. The procedure is complex and dangerous when inserting into a Standard atmosphere. Thin and Dense atmospheres represent an even greater challenge, for different reasons.

Some individuals make a sport of personal re-entry. It is banned on many worlds, for safety reasons. Re-entry computers are available, which can function as an autopilot for emergency re-entry. The computer costs Cr. 2,500 and allows an untrained user to attempt re-entry with a reasonable chance of success. Cr. 15,000

Rad-Blanket (TL 9): This heavy plasticised sheet of lead fibres blocks most radiation that strikes it, saving whatever (or whoever)

is taking shelter beneath it. All sources of rads being applied to objects beneath the blanket are reduced instantly by $2d6 \times 5$ rads. A rad-blanket folds into a roughly cubic package that is about 50 centimetres in height, width and depth. Cr. 150; 2kg.

Rope, Improved (TL 9): Completely synthetic and chemically adjusted to bear much heavier loads, 10m of this corded material can hold up to 250 kilograms before breaking. Cr. 50.

Cable, Cargo (TL 9): 10 metres of strong fibre or metal cable suitable for climbing or light towing applications. The lightweight cargo tethers used aboard merchant starships are typical of this type of cable, though it has many other uses. Cr. 100.

Cutting Gear, Laser (TL 9): A backpack power supply and laser or plasma cutting unit, this cutting gear is standard for use aboard starships. It can cut through most materials, though cutting through hull armour requires a very long time to create a breach. Cr. 4,000.

Inertial Locator (TL 9): Indicates the direction and distance travelled from a starting location. Cr. 1,200.

Laser Drill (TL 9): A heavy-duty, semi-portable laser used for mining, the laser drill is a tripod-mounted projector much more powerful than the laser rifle. It is also more cumbersome and far less accurate, being intended for work at short ranges. A power pack (not interchangeable with those used for lighter laser weapons) can be hooked to the drill, providing about 1 hour of intermittent use (or the equivalent of 200 shots in combat); a cable can also be run to the power source of a ship, vehicle, or prospector's buggy which provides unlimited power at the cost of mobility. Cr. 7,500. Extra powerpacks cost Cr. 3,000 and extra tripods cost Cr. 250.

Protein Tap (TL 9): A crank-operated auger and press is fed plant or animal matter and pulps it into an unrecognisable paste. Although the basic pastes produced by the tap tastes like the source of the material, most tap-users carry syrupy flavours to add to the substance. The device adds a +1 DM to all Survival skill checks made to 'find' food in the wild. Cost Cr. 1,000.

Generator, Fusion (TL 10): This is a heavy-duty portable fusion generator, capable of recharging weapons and other equipment. Cr. 500,000.

Iris Valve Opener (TL 10): A crank device designed to allow Iris valves to be slowly opened or closed when no power is available. This task is slow and strenuous, taking 3-5 minutes. Cr. 2,000.

Laser Scalpel (TL 10): A low-power but high-precision handheld laser "knife" the size of a pen, used for medical and other delicate cutting purposes. It carries an internal battery which could support

up to 30 minutes of continued operation and it can be hooked up (by a flexible power cord) to an external power source for longer-duration work or for recharging. Cr. 2,000.

Parachute, Grav (TL 10): A personal harness incorporating a smaller version of the Grav Belt. The chute can be manually controlled or set to activate at a given altitude. Instead of relying upon atmospheric resistance, a grav chute uses a localized contragrav field to slow the user's descent. It does not allow much more lateral movement than a standard parachute but functions even on worlds with no atmosphere. It can be cut in and out, or used for slight braking rather than the all-or-nothing descent available with a conventional chute. The internal batteries are good for one descent. A grav parachute cannot be used to give "lift" for upward movement. It will slow the user's fall whichever way up he or she may be. Internal safety devices will ensure the user makes a soft landing, often at very low speed, even if unconscious. Cr. 2,500.

Solar Vaporator (TL 10): A device using solar panels to generate power during the day (and storing it in an internal battery) and collect moisture from the air, especially at night. Yields 2 litres of water per 24 hours in standard or dense atmospheres, 1 litre per 24 hours in thin atmospheres and half a litre per 24 hours in very thin atmospheres. The Vaporator is stored in a compact (50 cm x 20 cm x 20 cm) package and is unfolded for use. Cr. 1,250.

Welding Kit, Advanced (TL 10): A composite plasma/electric arc welding kit useful for many light and medium applications. Repairs to higher tech materials require an advanced welding unit. Cr. 5,000.

Tool Laser (TL 12): A handheld laser welder/cutting-torch powered by a small internal powerpack (providing power for up to 20 minutes of continual use). The Tool Laser's energy output is variable and thus it could be used from anything from gentle electronic welding to small-scale metalwork or cutting through several centimetres of steel; anything beyond that would require a heavier welding torch. At TL 12 the Tool Laser is about the size of a large flashlight; at TL 13 or above it can be as small as a pen. Cr. 500.

Tool Set, Starship Engineer (TL 12): A full tool kit for shipboard engineering personnel, including PRIS goggles, Iris valve opener, electronic and gravitic test and repair equipment, wrenches, sockets and a large hammer. Wt. 12 kg, Cr. 4,000.

Fusion Stile (TL 13): A fusion stile is built around a small fusion unit which will run continuously for 5 years. The stile has a hopper which can take fluids or organic matter. Collection areas within the stile allow potable water to be extracted, or a just-about-edible nutrient product normally known as "glop". The exact composition of glop varies depending upon what is put into the stile and in some cases vital nutrients will be missing. The stile's readout advises the user

as to how good (nutritionally speaking) his or her glop will be today but even the best technology cannot make glop taste any better. Glop can be output as dry, jaw-busting bars or a damp and fairly disgusting porridge. The stile can also be set to simply produce pure water, or water with a high mineral content.

The stile has a power output socket and a cable for recharging items like powered tools and includes two rechargeable hand lamps which can be connected by cable or taken elsewhere. They will run for six hours if unplugged. It also has a built-in light unit and a heater that can be used to warm a shelter or to provide localized heat for cooking.

Marooned starfarers with a fusion stile will usually find their food and water needs are taken care of. However, many users cite the stile's food output as the single greatest drain on their will to live. Fortunately, the stile can also be used to distil alcoholic beverages into spirits for medicinal or recreational use. Cr. 4,500.

Rope, Advanced (TL 13): Based on the rapidly-restructuring protein coats of viruses, this rope is a bio-engineered colony of proteins and is incredibly strong. 10m of this rope-like material can hold up to 500 kilograms before breaking. Cr. 100.

Ring Laser (TL 16): A miniaturized tool laser built into a finger ring. While the laser is too weak to serve as a weapon in most situations, it is useful for small cutting or welding jobs. The ring includes a battery with enough power for up to 10 minutes of continued operation. It can however, be used as a painful intimidation device, gaining +1 DM to an intimidation or torture-based Persuade skill check. Cr. 1,000.

Rope, Infinite (TL 16): Stored in liquid form in a device looking like a caulk gun, infinite rope is an alien bacterium binding to itself with amazing strength and flexibility. When it is needed, the trigger on the 'gun' is pulled and a length of the 'rope' will be produced, toughening against the rigours of the atmosphere. The dispenser has a shutter that allows for the rope to then be cut and used like normal. When finished with the rope however, it can be balled up and reloaded into the gun to be digested by the bacterium colony and later re-used. A single infinite rope dispenser can produce up to 26 metres of rope before running out and must have at least one metre's worth of colony left inside of it to reclaim old rope (a read out provides details on how much of the colony is left). The rope is extremely strong, carrying up to 750 kilograms without showing stress or tearing. Cr. 1,000.

Battery, Antimatter (TL 18): A matter/antimatter reactor built into a small cylindrical package 15 cm thick and 30 cm long. The battery operates completely automatically with no need of external maintenance, includes sufficient fuel to operate for over a decade and produces enough power to recharge most weapons or other man-portable devices. Wt. 5 kg, Cr. 1,000,000.

Shelter and Accommodation

Characters venturing out into the field will need some kind of shelter from the elements. Advanced versions of the basic tent or tarpaulin may be easier to set up and give better protection from wind and rain but they are functionally the same.

Tarpaulin (TL 1): A canvas or waterproof cloth sheet used to create a temporary shelter 2 by 4 metres. Protects against precipitation and can withstand light winds. Cr. 10.

Tent (TL 3): Basic shelter for two persons offering protection from precipitation, storms and temperatures down to 0° Celsius and is able to withstand light to moderate winds. Larger, more elaborate tents capable of sheltering more people, resisting higher winds or colder temperatures weigh and cost more. Cr. 2000.

Sleeping Bag (TL 5): A warm, lightweight and somewhat waterproof personal sleeping bag. Two or more can be fastened together to make a larger enclosure. Cr. 50.

Pre-Fabricated Cabin (TL 6): A basic 6m x 4m x 3m hut with windows and a door but with no heating, lighting or sanitary facilities fitted. The cabin is capable of withstanding light to severe winds, offering shelter from precipitation, storms and temperatures down to -10° Celsius. It requires 8 man-hours to erect or dismantle. A 'heat and light' pack is normally purchased with the cabin. This costs Cr. 1,000 and slots into ready holders but requires an external power source. There is no plumbing.

The prefab cabin is often used as an adjunct to an Advanced Base as a work unit or additional storage space but can be used as living quarters for up to four people. Dismantled and ready for shipment, the cabin displaces 1 ton of cargo space. Cr. 2,000.

Pressure Tent (TL 7): Basic pressurized shelter for two persons, providing standard atmosphere and conditions, along with protection from precipitation, storms and fairly strong winds. There is no airlock: the tent must be depressurized to enter or leave it. Cr. 2,000.

Advanced Base, Unpressurised (TL 8): A modular, pressurized shelter capable of withstanding anything less than hurricane force winds. The shelter offers excellent protection from precipitation and all but the most extreme of temperature conditions. The base consists of a small power unit equivalent to the Fusion Still (available separately) and a main cabin to house it plus associated support equipment – water tanks, food storage and freshers. This central unit supports up to four cabin modules which connect to it in a variety of ways. All modules are 6m long by 4m wide by 3m high and can be placed end to end, side to side or even stacked, though this can result in stability problems.

The main power/galley/storage area takes about 16 man-hours to set up. It powers the other modules and handles recycling of water and similar tasks for them. Additional modules beyond the

basic four can be added but extra units can strain the fusion plant. However, empty modules used for storage need not be heated, lit nor use water most of the time so the extra load is only significant if power is needed.

The unpowered modules are the same size as the main unit and take about 4 man-hours each to assemble. A set of accommodation furnishings is fitted, though these can be removed. The usual setup is for three modules each to house two people with the fourth used as a common area, with freshers and other facilities shared by all personnel. The base is easily able to support six residents, though there is little room for work. If more than living quarters are required then additional modules must be purchased.

The main (powered) cabin unit plus four additional unpowered modules costs Cr. 20,000. A 'blank' unpowered module costs Cr. 2,500 separately. Basic equipment such as seats, work surfaces and shelves are included in the price, if desired but instruments and computers must be purchased separately. A 'blank' powered unit, containing only a power plant able to support four other modules, costs Cr. 7,500. The blank powered unit can be configured like any other module.

Dismantled and ready for shipment, the advanced base displaces six ship tons with each additional cabin taking up 0.5 tons of cargo space when properly crated.

Habitat Module (TL 8): A modular unpressurised quarters for six people, capable of withstanding anything less than hurricane-force winds. Includes survival rations & battery power. Requires 12 man-

hours to assemble and can be attached to other modules to form a base. Cr. 10,000.

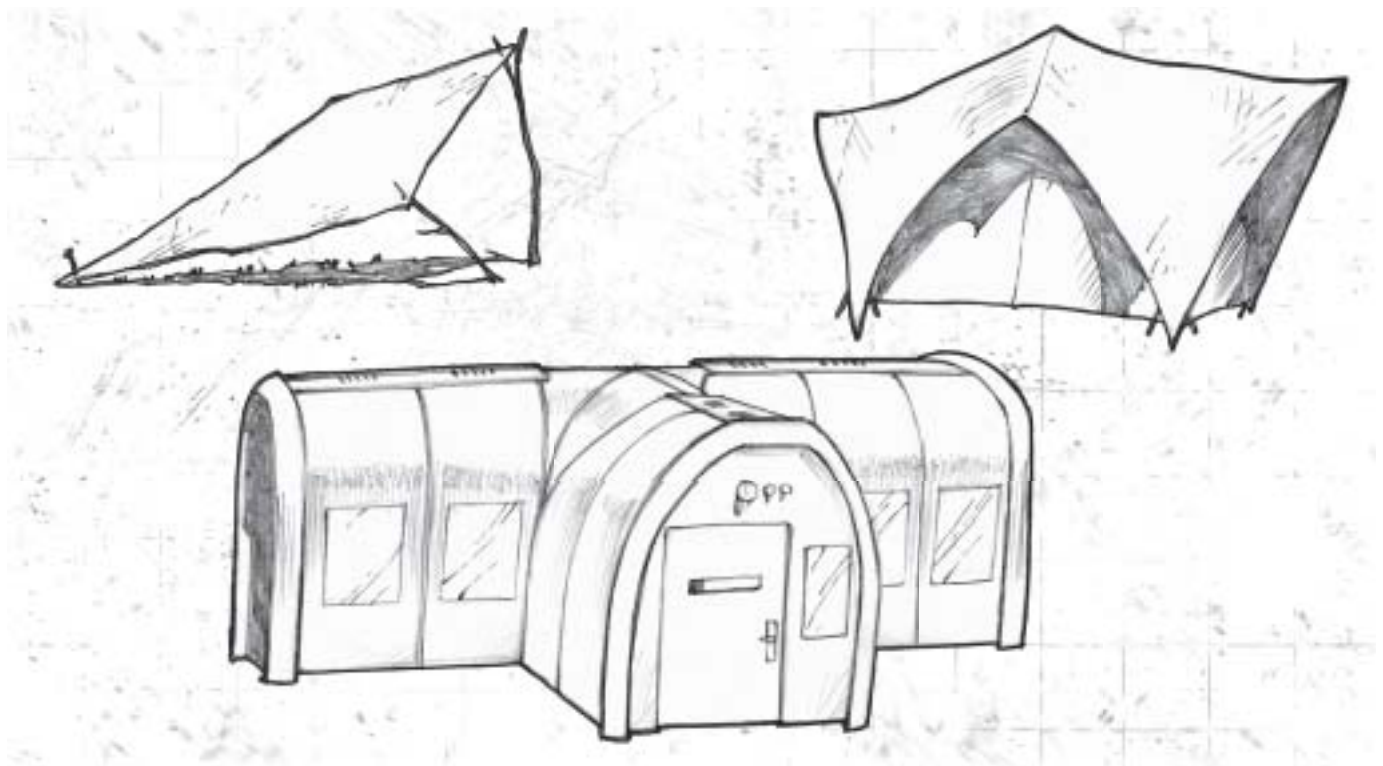
Tent-barracks (TL 8): A large tent providing shelter for eight people against the weather and environment. The pole structure requires one to six man hours to set up properly. Weight 10kg. Cost Cr. 500.

Advanced Base, Pressurised (TL 10): A pressurized version of the Advanced Base, this unit has the same modular construction but comes with two airlock units and is of much more sturdy construction. The standard core module plus four unpowered units costs Cr. 75,000. Additional modules cost Cr. 5,000 (unpowered) and Cr. 10,000 (powered).

Some purchasers pay an additional Cr. 5,000 for the 'foam dome' option. This is a framework over which a light covering is stretched and then sprayed with a fast-setting foam similar to that used in personal re-entry kits. The foam dome hardens in moments and provides improved protection against micrometeorites and inclement weather.

Habitat Module, Pressurized (TL 10): The TL 10 version of the habitat module is pressurised and includes life-support for six occupants for one week (1,000 man hours). Cr. 20,000.

Tent-barracks , Pressurized (TL 10): The TL 10 version of the tent-barracks can be effectively pressurised using a chemical seal from the inside. There is no airlock – the tent depressurises when it is opened. Cr. 5,000.



Options

Armoured (TL 9): Survival structures (tents, habitats and so on) can be layered with the armoured option, granting Armour 5 to those inside from attacks originating outside of the structure (and vice versa). This triples the weight of the structure. Cr. 2,500.

Rad Shielding (TL 10): Adding neutralised elements of lead and polymer plastics designed to block radiation to the outer layers of any structure, reflecting most of the radiation striking it. When a source of radiation tries to cross the structure's shielded layers, it is instantly reduced by 3d6 x 10 rads. The shielding works both ways, reducing rads for outside sources coming in as well as inside sources emanating outward. Cr. 3,000 per 100 cubic metres of structure to be protected.

Self-Assembling (TL 11): The self-assembling upgrade can be given to tents, habitat modules and other basic structures. The structure is capable of expanding and assembling itself with only minimal aid, reducing the time needed to set up the shelter to a single man-hour. Cr. 5,000.

Chameleon Fibres (TL 12+): The chameleon fibres upgrade can be given to tents, habitat modules and other basic structures. The structure gains the benefits of advanced camouflage. The TL 12 version bleeds heat excesses to match the background infrared levels and effectively renders those inside invisible to IR sensors (Hard (-4) to detect with sensors). Cr. 8,000.

TL 13: The advanced TL 13 version uses both the IR and Visilight camouflage technologies, adding light-bending technology to the structure, making everyone inside nearly invisible to the naked eye (Hard (-4) to spot). Cr. 60,000.

Self-Sealing (TL 13): Structures can be made self-repairing and self-sealing at TL 13 for Cr. 2,000. Small breaches and rips are automatically fixed in seconds.

Null-Shielding (TL 16): Adding certain psion-dulling chemicals and elements to the outer layers of the structure can effectively block the passage of psionic influence and manipulation. Whenever a psionic ability tries to cross the structure's shielded layers, the psion making the check has a temporary 1d6+2 penalty to their Psi Characteristic. The shielding works both ways, reducing the potency of psions outside affecting things inside as well as psions inside trying to affect something outside. Due to the nature of the shielding, any attempt at using the Teleportation psionic ability to cross a null-shielded layer will fail catastrophically, the individual trying to teleport suffering 2d6 points of damage to their Endurance Characteristic from the body shock. Cr. 25,000 per 100 cubic metres of structure to be protected. This modification is can not be used on any building with a Psi-Amplifier.

Psi-Amplifier (TL 16): The opposite of null-shielding, this structure modification sews several psi-conduit crystal wires through the

outer layers of the building, focussing them all to a central hub point. The presence of so many psi-crystals in the area add a +1 DM to all psionic Skill Test while in the structure but any psion touching the central hub with their bare flesh while using a psionic ability can do so with a +4 DM bonus. Cr. 100,000 per 100 cubic metres of structure to be covered. This modification can not be used on any building with Null-Shielding.

Holosimulacrum (TL 17): The epitome in internal structure alterations, the holosimulacrum is a network of thousands of tiny holographic and gravitic emitters that can be commanded (verbally or by remote) to access a computer file and recreate a specific location both visually and physically. The holographic terrain will move and react as if the structure was the proper size, manipulating gravitic fields to 'fool' the minds, eyes and bodies of those inside into believing they are interacting with the imaged area.

The holosimulacrum is not perfect however and some instances will cause it to malfunction. For instance, if someone orders the holosimulacrum to change into a huge symphonic hall so they might listen to an orchestra, it will easily do so. The people inside will have the distinct feeling of sitting on auditorium bench-seats, the blow of the air conditioning and so forth. However, when one of those people tries to run down and get onto the stage the holosimulacrum cannot compute such an action quickly – meaning that the person will run into the wall of the real structure and shut down the holosession. Cr. 5,000,000.

Light Sources and Vision Aids

Light is mainly appreciated when it is absent. Well-prepared adventurers carry some kind of light source with them.

Torch (TL 0): A bundle of flammable material on a handle or stick of some kind. A torch will last about one hour and illuminate a 6-metre radius, producing a thick, heavy smoke. Wt. 0.25 kg, Cr. 1.

Gas or Oil Lamp (TL 2): A lamp lasts about six hours on a half-litre of oil or gas and will illuminate a 5-metre radius to the equivalent of normal daylight. The fuel poses a fire hazard if spilled. Cr. 10. Fuel refills cost Cr. 1.

Binoculars, Optical (TL 3): Binoculars magnify the appearance of objects being viewed through them, effectively increasing the visual range of the user, with up to 10 times magnification. The effective field of view is reduced, however, as the magnification increases. Price stays the same across Tech Levels, though the weight may be reduced through the use of lighter components. Wt. 1 kg, Cr. 75.

Electric Torch (TL 5): The common flashlight. It is battery powered and will last for about six hours of continuous use. A torch produces a wide cone of light up to 18 metres long with a radius of six metres at the end of the beam. TL 7+ models have adjustable beams allowing them to also produce a tight beam of light up to 36 metres long, with a one metre radius, or be used to illuminate a circle of 10 metres radius. Wt. 0.5 kg, Cr. 10.

Cold Light Lantern (TL 6): A fuel cell powered version of the electric torch which will last three days with continuous use. Produces a wide cone of light up to 18 metres away with a radius of 6 metres at the end of the beam. Also capable of producing a tight beam of light up to 36 metres away with a 1 metre radius or be used to illuminate a 10 metre radius. Wt. 0.25 kg, Cr. 20.

Goggles, Infrared (TL 6): A headset with goggles or an adaptation to the visor of armour allowing the user to see by visible light or thermal imaging. Thermal imaging allows temperature differences to be detected. This makes warm objects like animals, people and vehicles very obvious unless there is a lot of "heat clutter" in the area but does not allow the user to find his way around in a cave or similar environment where everything is much the same temperature. Cr. 500.

Goggles, Light Intensifier (TL 7): These goggles allow clear, monochrome vision up to 18 metres in anything less than total dark. While some light is required to produce this effect, anything approaching normal daylight conditions severely degrades the clarity of the view and the range. Cr. 500.

Binoculars, Electronic (TL 8): Similar to optical binoculars, electronic binoculars also include a laser rangefinder and a light intensification function that allows vision in all conditions of poor lighting except for total darkness. Electronic Binoculars do not allow the user to see where there is an obstruction such as fog, smoke or thick foliage. From TL 10 they incorporate an image-processing unit helping to identify partially seen objects. Wt. 1 kg, Cr. 750.

Combination Viewer (TL 9): A set of goggles or a suit visor incorporating IR and light intensification functions, along with brightness-linked safety cut-outs. The viewer can be used in optical, IR or thermal mode, or any combination of the three, though this can be disorientating to new users. Cr. 1,250.

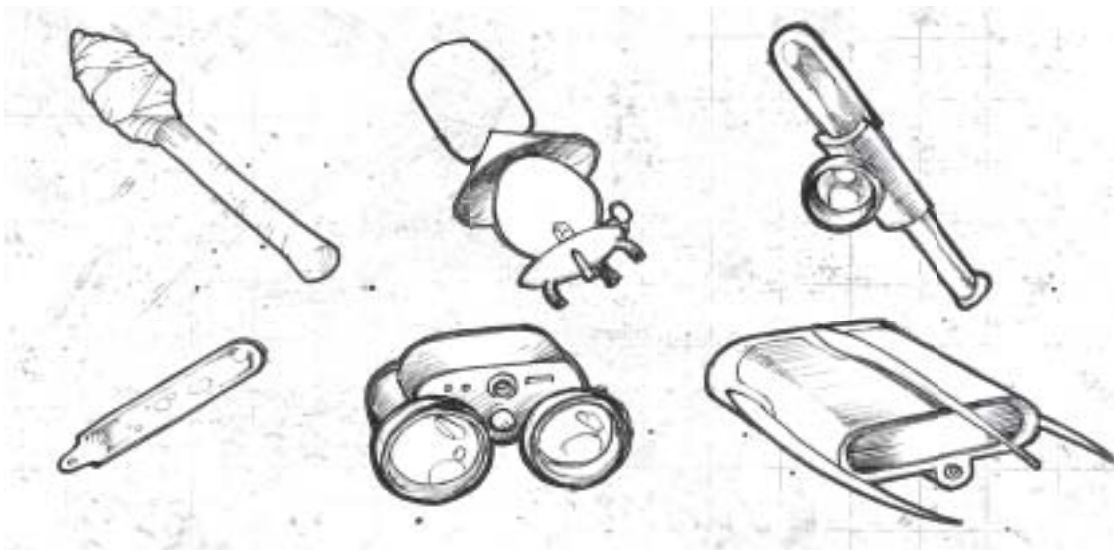
Personal HUD (TL 9): A personal HUD (heads-up display) can be fitted to a set of goggles or shades, a monocle, or the inside of a

helmet faceplate. The HUD displays information from a variety of sources. Incoming messages and video from a character's personal comm, data pulled up from a handcomp or an aiming reticule for weapon can all be displayed. Tying any given device or weapon into the HUD and calibrating it properly takes an hour and costs Cr. 100. Information exchange can be by cable or wireless means. The latter creates a certain amount of radio "noise" which can be detected or jammed, so military HUDs normally use fibre-optic cable. Cr. 1,500.

Binoculars, PRIS (TL 12): PRIS (Portable Radiation Imaging System) binoculars or goggles have no lenses but instead project an image for the user as if she were using optical binoculars. The image can be gathered using a variety of wavelengths: optical, infrared, ultraviolet, radio and x-ray to name a few. The binoculars do not emit these, they read emissions and reflections of naturally-occurring wavelengths, then convert the data into an optical display using false colour. Composite images using different spectra are possible and can highlight things missed when viewing in just one mode but can be very confusing to a new user.

PRIS goggles, which are essentially the same but have close-range magnification capability instead of distance magnification, are used by engineers for a variety of applications. One of their most important features is the ability to see stresses and cracks in materials long before they become visible to the unaided eye. Cost is the same for both types. Wt. 1 kg, Cr. 3,500.

Goggles, Chemi-view (TL 13): An advanced set of goggles which attach to a wrist-linked 'sniffer', chemi-view technology allows the wearer to set their vision to a specific chemical compound, protein strand or even elemental presence. The sniffer takes a sample of the substance the goggles are to be set to find and locked down into vision mode; immediately causing the goggles to brightly illuminate any traces of that exact chemical compound it sees. This is very useful for finding drugs, bombs, or alien species. The sniffer is powerful enough to be set for specific strands of DNA materials if a tissue sample is made available. Cr. 5,000.



ELECTRONIC AND MEDICAL EQUIPMENT

As technology advances, all manner of new labour and life-saving devices become available.

Medical Supplies

Adventuring is a dangerous business. Smart and lucky characters can usually avoid getting hurt but when you do, some kind of medical assistance is vital.

First Aid Kit, Basic (TL 0): At TL 0, a first aid kit consists of little more than material for a splint and a few herbs and plants that are reputed to have medicinal qualities but it is better than nothing. A basic kit can be thrown together by a resourceful individual from local materials. First Aid performed using these tools will have a -1 DM penalty to the Medic skill check. If the components are bought, cost will be about Cr. 10.

Field Surgical Kit (TL 5): Tools for performing surgery including scalpels, saws and forceps. At low Tech Levels, the kit is rather basic but fulfils the same functions as its more advanced cousins. It is possible to perform surgery using improvised tools but the results (and patient survival rates) are rather better with the correct equipment. The kit does not include anaesthetics or other drugs. The cost indicated is for a very basic set of workmanlike tools, surgery performed using these tools will have a -1 DM penalty to the Medic skill check. The price is much higher for a more complete or higher-quality set. Cr. 1,000.

First Aid Kit, Improved (TL 5): A basic belt-carried kit containing clean bandages, safety pins and a small blade as well as a quantity of basic pharmaceuticals (antibiotics, painkillers and possibly alcohol to sterilize a wound). Cr. 125.

Adhesive Bandages (TL 6+): Originally used in small tubes to seal up bullet holes in flesh in a hurry, this chemical glue is very strong stuff which turns the moisture in skin to plastic instantly. The applicators change as technology gets better but the substance remains effectively the same. The use of adhesive bandages while using the Medic skill subtracts 1 from the Timing die (minimum of 1) but suffers a -1 DM to the Medic skill roll. The cost is Cr. 10 for a three-dose tube.

TL 8: Cr. 50 for a five use spray.

TL 10: Cr. 75 for a ten use roll-on.

TL 12: Cr. 100 for 20 use applicator wand.

TL 14: Cr. 500 for a 100 use gelling gun.

Field Medical Kit (TL 6): A backpack-sized medical kit for use by a doctor or paramedic. The kit contains drugs, surgical supplies and diagnostic materials as well as very basic tools for surgery. Higher Tech Level kits cost more but offer a better range of treatment options and quality of care, increasing the odds of successful treatment. A field surgery kit is necessary for all but the most basic or desperate operations. Cr. 500.

Medikit (TL 8+): There are different types of medikit available at different Technology Levels. All medikits contain diagnostic devices and scanners, surgical tools and a panoply of drugs and antibiotics, allowing a medic to practise his art in the field. Higher-technology medikits do not give a bonus to basic treatment but can help with more exotic problems or when treating augmented individuals. For example, a TL 8 medikit can test blood pressure and temperature; a TL 14 kit has a medical densitometer to create a three-dimensional view of the patient's body and can scan brain activity on the quantum level. All medikits weigh 8 kg.

TL 8: Cr. 1,000.

TL 10: Cr. 1,500.

TL 12: Cr. 5,000.

TL 14: Cr. 10,000.

Trauma Pack (TL 8): The trauma pack is one of the most useful devices carried by battlefield medics. It is a small satchel of chemicals and drugs used to pump life back in a wounded body. Unsubtle and deadly in multiple doses, the chemicals can make a soldier ignore wounds for a few hours – hopefully enough time to get him to a proper medical facility. The use of a trauma pack requires a Medic throw 8+ but will give a wounded character back a temporary 1d6 Endurance. This Endurance can be used to bring a technically 'dead' character back from 0 or less Endurance (so long as the new total is above 0), so long as they suffered their last wound within 30 seconds. This regained Endurance lasts for 1d6 hours – at which point it vanishes, potentially killing them. A character can only benefit from one administration of a trauma pack per day. Higher technological versions of the trauma pack are not any more efficient, merely lighter. The TL 8 trauma pack weighs 2 kg and costs Cr. 750.

TL 10: Weight: 1 kg; Cr. 1,500.

TL 12: Weight: 0.5 kg; Cr. 3,500.

TL 14: Negligible Weight; Cr. 7,500.

Cryoberth (TL 10): A cryoberth, or 'icebox' is a coffin-shaped machine similar to the low or frozen berths used on some spacecraft. The main

difference is that a cryoberth works much faster than a low berth, freezing and preserving its occupant almost instantly. A cryoberth can be used to place a severely injured individual into stasis until medical treatment can be provided. A cryoberth's internal power system can function for up to one week on its own but a berth is usually connected to a vehicle's power supply. Wt. 200 Kg, Cr. 50,000.

Automedic, Personal (TL 11): A personal automedic is an automated drug dispenser tailored to a specific user's body chemistry. It monitors the wearer's bio-signs for any changes. The automedic will dispense anti-toxins, antibiotics, stimulants, sedatives and other pharmaceuticals required to keep the user at peak efficiency or prevent collapse.

Under normal (adventuring) conditions a personal automedic will need to be restocked and the batteries recharged every 4 weeks. Of course heavier demands on the automedic may considerably reduce the available drug supply much sooner.

In the event of poisoning or infection, a personal automedic will administer a specific antidote if it possesses the right one and recognizes the threat. If not, it will react to general symptoms and use general or broad-spectrum remedies as its database thinks best.

Most automedics are also equipped to store and dispense a single dose of Medical Slow Drug should it ever be needed. If the wearer is seriously injured or dying (two or three physical attributes at zero) the automedic will automatically use the Medical Slow drug if it is available and there is no risk of an overdose. The user can manually

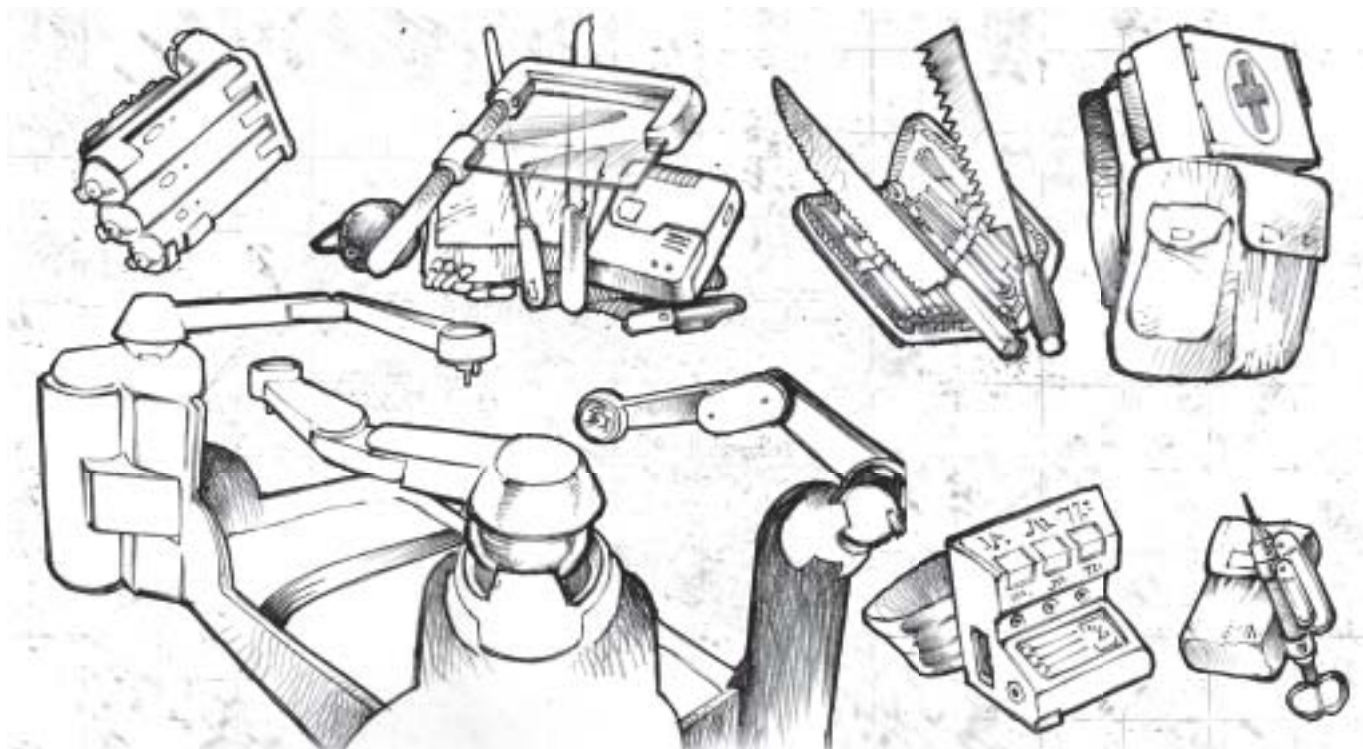
activate the Medical Slow at any time if needed. If desired, this can be replaced with a dose of Slow, Combat, or other drugs instead.

It is very dangerous to attempt to use an Automedic that has been calibrated for another person's body chemistry. If such an attempt is made, a Difficult Endurance check is necessary. If it is failed, the character suffers a Traumatic Shock injury. He takes 2d6 damage and the unit will not work for him. It is possible to recalibrate the automedic but this takes 1-6 hours.

A Personal Automedic costs Cr. 15,000, plus Cr. 500 for basic supplies. Specialized drugs must be purchased separately.

Mediscanner, Personal (TL 12): A small monitoring unit normally worn on the belt or upper arm. A personal mediscanner monitors a character's life signs and data such as blood composition, blood sugar and body temperature. It warns when exhaustion or dehydration are becoming dangerous, gives information to the user or medical personnel about poisoning and other hazardous conditions and allows a quick diagnosis of many ailments. Using the information from a personal mediscanner provides a +2 DM on Medic skill rolls. Cr. 1,000.

Mediscanner, Portable (TL 12): A general version of the personal mediscanner for use by field medics. The device is not optimised for a single user, so takes up to 2 minutes to calibrate itself to each new subject. It gives the same data as the personal version (though slightly less detailed), providing a +1 DM on Medic skill rolls once it is calibrated. Most mediscanners are able to deal with all common species and add-on chips for other species are available at Cr. 500 each. Cr. 2,000.



AutoDoc (TL 13): An autodoc is a small self-contained diagnostic, pharmaceutical and surgical system about the size of a Low Berth chamber or large coffin. Often found on starships, it is capable of diagnosing and treating disease, infection, injuries and other medical conditions as if a qualified doctor (treat as Medical 3 skill) was attending the patient. A restock of basic supplies for an autodoc costs Cr. 100,000.

At TL 14, an Autodoc is capable of reanimation, provided no more than 15 minutes have passed since the subject's death. This period can be extended by extremely cold conditions or placing the corpse in a low berth. Cr. 1,000,000.

Drugs and Pharmaceuticals

Drugs can come from a variety of sources and two very different compounds may have identical effects on the user. For this reason it is possible to find low-tech drugs which are plant parts eaten straight from the branch and are every bit as effective as high-technology synthesized drugs. Availability is a factor too. Obviously, in places where a drug can be picked while growing wild on everyone's doorstep it will be cheaper than the list price given here.

Recreational Drugs (Cost and TL vary). Recreational drugs are sometimes known colloquially as 'Drug Drug' for reasons now lost in history. They vary widely in terms of cost and effect. Many cultures have a legal recreational drug, such as alcohol. Most legal drugs are relatively mild in effect but can be harmful in large doses. More potent drugs are usually illegal, especially those affecting the user in such a way as to make him or her dangerous to others. Manufacturers and suppliers will charge whatever the market will stand.

Truth Serum (TL 5): Truth serum is intended to force the subject to answer questions truthfully. It must be tailored to the species being questioned and carries some risks. One dose usually forces the subject to be truthful for 2 minutes. The character can try to resist the drug by making a Difficult Endurance roll. At the end of the 2 minute period, the subject takes 2d6 damage and becomes unconscious for 1 hour. Truth serum tends to make the recipient vague and confused, so his answers may be nonsensical even though he is not deliberately lying. Obtaining useful information from a subject is one use of Interrogation skill. Cr. 500 per dose.

Medicinal Drugs (TL 5+): Medicinal drugs include vaccines, antitoxins and antibiotics. They range in cost from five credits to several thousand credits, depending on the rarity and complexity of the drug. Medicinal drugs require the Medic skill to use properly – using the wrong drug can be worse than doing nothing.

Anti-Radiation Drugs (TL 8): Anti-rad drugs must be administered immediately before, during, or within 10 minutes after radiation exposure. They absorb up to 100 rads per dose. A character may only safely use anti-rad drugs once per day, taking more causes 1d6 permanent Endurance damage per dose. Cr. 1,000 per dose.

Stim Drugs (TL 8): Stims remove fatigue, at a cost. A stim removes one point of fatigue but causes one point of damage. If another stim is used without an intervening period of at least six hours of sleep, the character suffers two points of damage with the second dose, three with the third and so forth. Multiple uses of stims without sleep require six hours of sleep for each stim taken (this sleep may be over several days). Cr. 50 per dose.

Panaceas (TL 8+) are wide-spectrum medicinal drugs that are specifically designed not to interact harmfully. They can therefore be used on any wound or illness and are guaranteed not to make things worse. A character using panaceas may make a Medic check as if he had Medic 0 when treating an infection or disease. Panaceas cost 200 credits per dose.

Clotting Aid (TL 9): This daily preventative thickens the user's blood through enhanced platelet levels, causing wounds to clot and knit much faster. Someone who has previously taken a daily dose of clotting aid for at least the previous week will give a +1 DM to other people's Medic throws to treat them. Cr. 200 per 30 day bottle.

Nervous Response Dampeners (TL 9): This 'battlefield vitamin' is a mild anti-anxiety drug, helping combatants cope with some of the horrors they are subjected to in war. Taken a few hours before battle, the dampeners last for a day or so, granting the user a +1 DM bonus to any tests related to avoid fear or shock for 2d6 x 3 hours. Cr. 100 per dose.

Radiation Emergency Applicator (TL 10): A form of emergency anti-rad drug cocktail, these one-use pneumatic syringes can be triggered to punch through up to 2 points of armour protection, pumping seven different thin vials of chemicals into the recipient. As long as the applicator is used within one hour of receiving a dose of rads, the recipient's rads are reduced by 1d6 x 10. No matter how much or quickly the applicator is used, intense and steady vomiting will occur for 1d6 minutes after use. Cr. 250.

Adrenaliser (TL 10): An injected cocktail of alien adrenalines, this drug is used to keep the user awake and active for several hours at a time. Although it is known to have a detrimental 'crash' when it wears off, soldiers on patrol duty will sometimes use adrenaliser to stay alert. One dose of the drug is the equivalent of 10 hours of sleep and enables a user to function for the next 36 hours without penalties, after which he will have 2d6 x 5 minutes to find someplace to lay down – because the lost amount of sleep will hit him without fail at the end of that time. Cr. 150 per dose.

Combat Drug (TL 10): Combat drug improves the user's reactions and ability to cope with trauma. It adds +4 to the user's initiative total at the start of combat (or whenever the drug takes effect). The user may dodge once per round without affecting his initiative and reduces damage taken from each attack by 2 points. The drug takes effect 24 seconds (four rounds) after it is taken and lasts around 10

minutes. When the drug wears off the user is fatigued (see page 74 of the Traveller Core Rulebook). Cr. 1,000 per dose.

Fast Drug (TL 10): Fast drug, or 'Hibernation' puts the user into a state akin to suspended animation, slowing his metabolic rate down to a ratio of 60 to 1 – a subjective day for the user is actually two months. Fast Drug is normally used to prolong life support reserves or as a cheap substitute for a cryoberth. Fast drug costs 200 credits per dose.

Fast Drug Antidote is available at TL 12 and costs Cr. 900 per dose.

Metabolic Accelerator ('Slow Drug', TL 10): Metabolic Accelerator boosts the user's reaction time to superhuman levels. To the user, everyone else appears to be moving much slower. A character using Slow in combat gains four ticks instead of two every round. The drug kicks in 45 seconds after ingestion or injection and lasts for around 10 minutes. When the drug wears off, the user's system crashes. He suffers 1d6 points of damage and is fatigued (see page 74 of the Traveller Core Rulebook). Metabolic Accelerator costs Cr. 500 per dose.

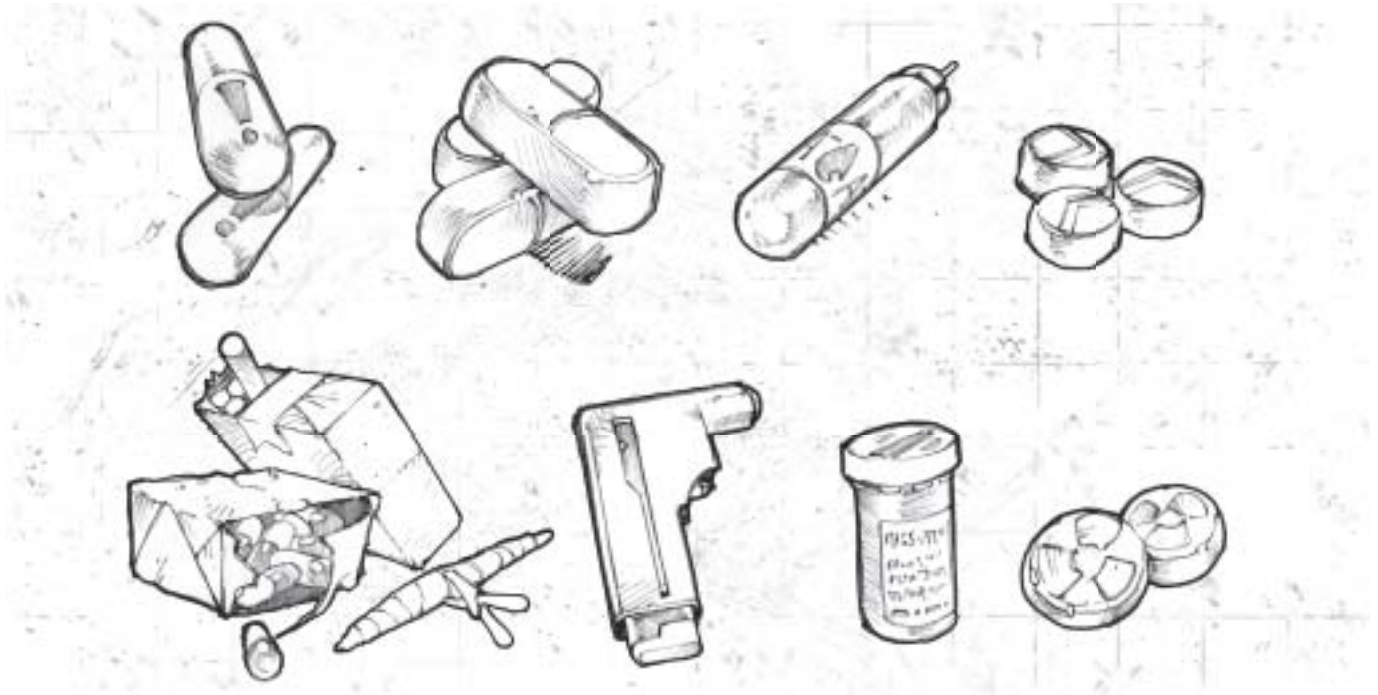
Meta-Performance Enhancer ('Titan Drug', TL 10) boosts the user's physical strength by 1d6+1 points. Reacting similarly in the body to how some narcotics can enhance the user's strength; the titan drug does the same thing without all of the dangerous side effects. The drug kicks in 60 seconds after injection and lasts for around fifteen minutes. When the drug wears off, the user's muscles cramp painfully under the stress and fatigue. He suffers 1d6 points of damage and is instantly enfeebled (Str of 5 for 1d6 hours). Meta-Performance Enhancer costs Cr. 600 per dose and has an Availability of 9+.

Medicinal Slow Drug (TL 11): Medicinal Slow is a variant of the Slow Drug. It can only be applied safely in a medical facility where life-support technology is available, as it increases the metabolism to around 30 times normal, allowing a patient to undergo a month of healing in a single day. (Using Medicinal Slow outside of a hospital or sickbay is a messy and painful way to commit suicide, as the user will rapidly cook his internal organs and cause massive brain damage). Medicinal slow costs Cr. 500 per dose.

Starlight Drops (TL 12) enhance the user's vision dramatically. By adding a few stinging drops of this liquid into each eye and waiting for the burning sensation to pass, the user effectively gains night vision equal to that of a nocturnal predator. In darkness or near-dark environments, the user gains a +1 DM on all ranged combat and perception-based throws. The effects of the drug last for 1d6 hours, during which time the user's eyes look silvery and cloudy. A dropper of starlight drops carries 6 doses (12 eyes) and costs Cr. 500.

Anagathics (TL 15): Anagathics slow the user's ageing process. Synthetic anagathics become possible at TL 15 but there are natural spices and other rare compounds that have comparable effects. Anagathics are illegal or heavily controlled on many worlds. They cost 2,000 Credits per dose. One dose must be taken each month to maintain the anti-aging effect, otherwise an individual must make an immediate roll on the aging table (see page 36 of the Traveller Core Rulebook) as their body reacts badly to the interrupted supply.

Null (TL 16): Used to dampen the psionic abilities of others, null is a general classification of anti-psionic chemicals injected into the target. Once injected the drug takes 2d6 minutes to reach the recipient's brain. Once there it completely shuts off psionic ability for the following 2d6 hours. Cr. 500.



Security Equipment

Travellers may at times have to secure a place or person by various means. Something can usually be improvised but it helps to have the right tools for the job.

Handcuffs (TL 2): Handcuffs are simple mechanical restraints designed to deny the subject free use of his hands. Higher Tech Levels produce stronger and lighter designs. Variations on the theme include leg shackles and similar items. Cr. 25.

LockPickSet (TL 4): A set of small tools allowing ordinary mechanical locks to be picked if the user has suitable skills (Mechanical or Intrusion). Lockpicks are illegal on worlds of law level 8+; on such worlds the cost rises by 10 times or more. Cr. 10.

Intrusion Kit, Basic (TL 5): A small kit containing lock picks, wire, small screwdrivers and a saw designed to make illicit entry into mid-tech secured areas easier. It contains far more than the items found in a set of lock picks and is thus bulky and hard to conceal. Cr. 300.

LockPickSet, Electronic (TL 7): A set of small electronic tools allowing electronic locks to be bypassed by someone with the relevant skills. Electronic lockpicks are illegal on worlds of law level 8+; on such worlds the cost rises by 10 times or more. An electronic toolkit could do this job as well but an electronic lock pick set includes only the few tools necessary for dealing with electronic locks and thus is far smaller, lighter and cheaper than a full electronic toolkit. Cr. 200.

Security Kit (TL 7): A small case containing basic security equipment for two guards, including 2 batons, 2 autopistols, 6 autopistol magazines, 200 rounds of ammunition, 2 combination masks, 2 short-range communicators, 1 metal detector, 4 sets of handcuffs, 1

IR binoculars and 2 electric torches plus belts and webbing to hold all the gear. Cr. 1,700.

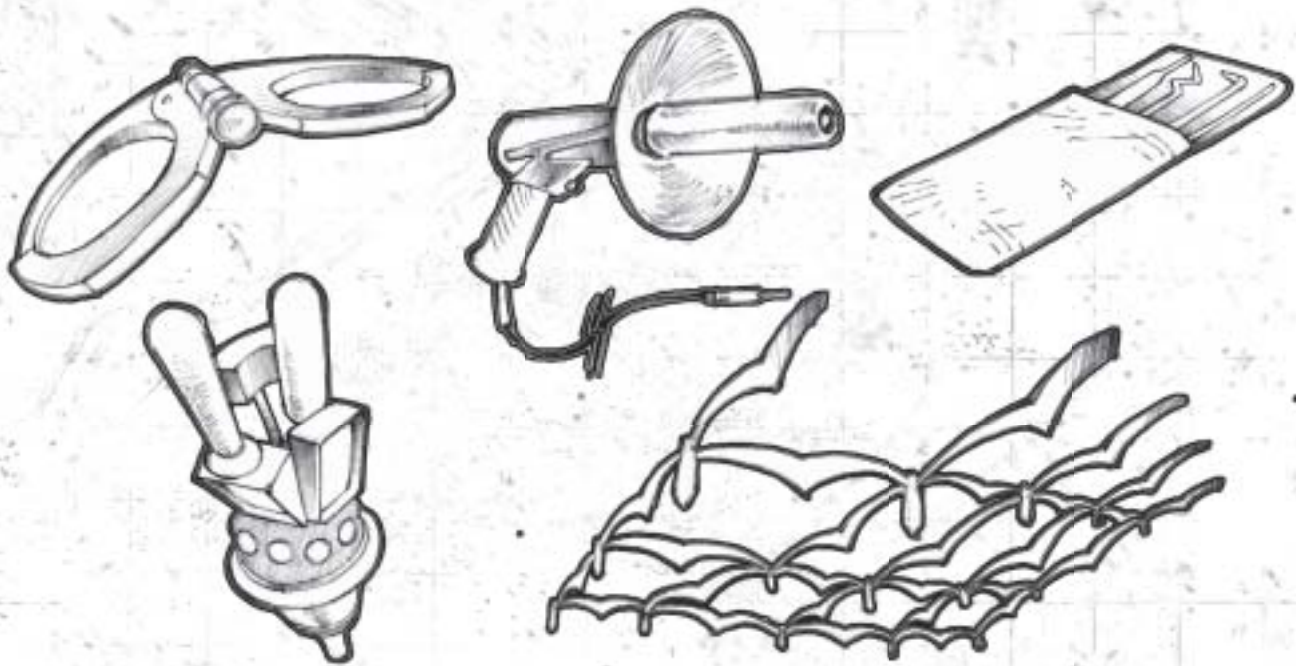
Intrusion Kit, Improved (TL 8): A similar kit to the basic version, the improved intrusion kit is constructed of more advanced materials and includes test probes for investigating electronic locks. Cr. 500.

Laser Microphone (TL 8): This device bounces a beam of laser light off rigid objects and detects any sounds made near that object by analysing the changes in the reflected beam. A Laser Microphone is about the size of an autopistol, has a range of 500 metres and comes with a pair of headphones for direct monitoring of the conversations being eavesdropped on, though it could be connected by a cable to a hand computer or to other information-gathering devices. Cr. 475.

Perimeter Alarm (TL 9): A simple automated unit that detects motion and thermal traces, sounding an alarm either on itself or at a central command unit. Can be programmed to ignore individuals carrying code emitters keyed to the alarm's security system. Cr. 1,000.

IntrusionKit,Advanced(TL 11): Although containing basic mechanical tools, the advanced intrusion kit is mainly intended for dealing with advanced electronic security systems and the automated systems usually found monitoring them. It contains specialist diagnostic and electronic tools.

Psi-Alarms (TL 16): Thin crystalline weblines that can be strung above head-level in a perimeter, they send an electronic alarm to the computerised claxon whenever something with a Psi Characteristic of 3 or higher crosses under or over them. Cr. 15,000 for 5 metres of weblines.



Communications and Electronic Equipment

It has been said that warriors with money to spend will buy bigger guns; professional soldiers will upgrade their communications technology. Whatever the truth of this adage, comms gear can be vital to a group of travellers.

Signal Mirror (TL 2): A simple hand-held mirror which can reflect sunlight and thus catch the attention of a distant observer. Includes a small sighting hole that enables the signaller to direct the flashes of light at a particular target. Cr. 10.

Bug (TL 5): Surveillance devices such as hidden microphones and tiny cameras, bugs are available from TL 5 onwards. They rapidly miniaturise and become more intelligent. A TL14 bug can be no bigger than a dust mote. The smaller a bug, though, the shorter its range – a bug that transmits data needs a much larger power supply than one that just records until it is collected.

TL 5	Audio	Cr. 50
TL 7	Audio or Visual	Cr. 100
TL 9	Audio or Visual or Data	Cr. 200
TL 11	Audio/Visual/Data	Cr. 300
TL 13	Audio/Visual/Data/Bioscan	Cr. 400
TL 15	Audio/Visual/Data/Bioscan/Computer 1	Cr. 500

Audio: The bug records anything it hears.

Visual: The bug records anything it sees.

Data: If attached to a computer system, the bug can search and copy data from the computer. The bug cannot breach computer

security on its own but if a user accesses the computer in the bug's presence, the bug can read his data.

Bioscan: The bug has a basic biological scanner, allowing it to sample the area for DNA traces, chemical taint and so forth.

Computer 1: The bug has an onboard computer system with Computer/1.

A bug can be active or passive. An active bug transmits data (either constantly, or when triggered). Passive bugs just record until activated.

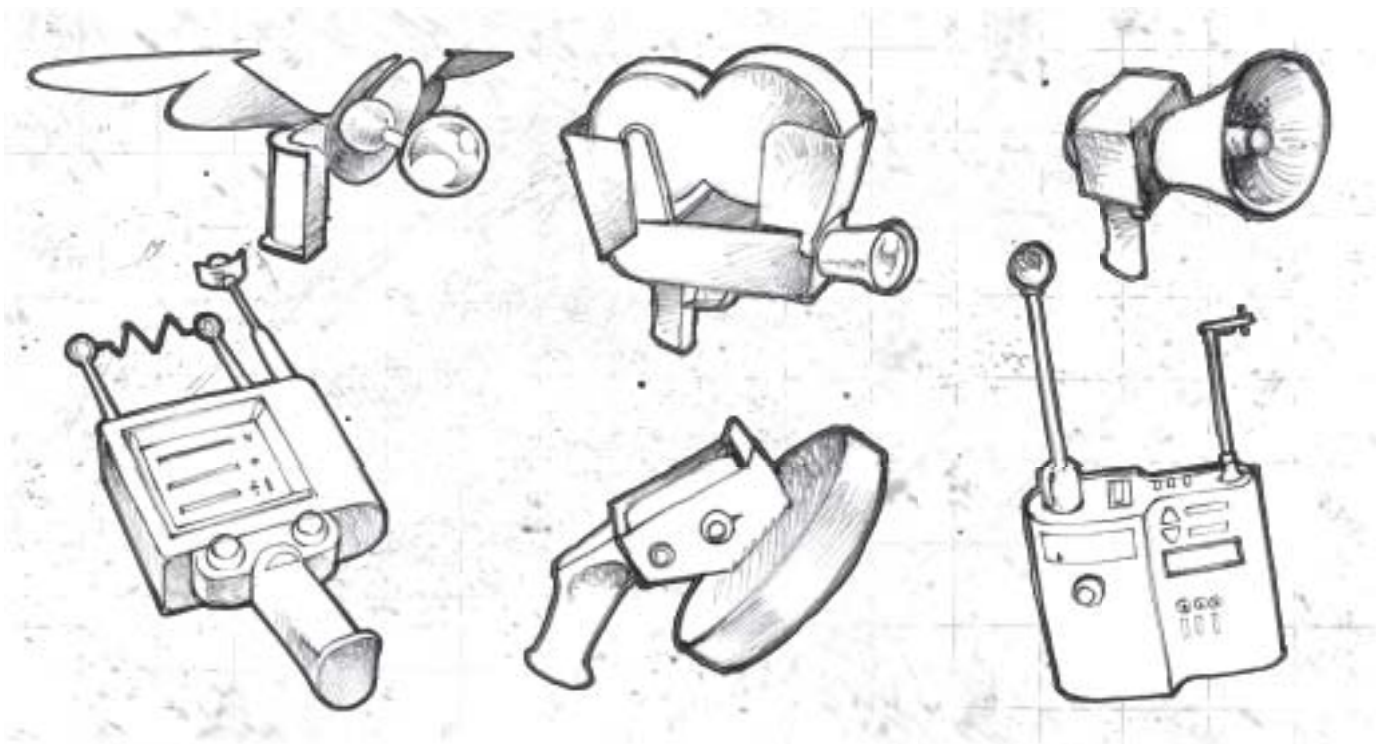
Bull-Horn (TL 5): A mechanical device whose shape amplifies a voice, allowing it to carry up to half a kilometre away. A bullhorn is very bulky and awkward to carry. Cr. 120.

Camera, Film (TL 5): A basic photographic device using chemical film to record images. Cr. 30.

Radiation Counter (TL 5): Indicates presence and intensity of radioactivity within a 30-metre radius. The signal will grow stronger as the detector is brought closer to the source. Cr. 250.

Transceiver (TL 5+): A transceiver is a stand-alone communications device. Unlike a comm, which relies on the presence of an established communications network, a transceiver can send and receive directly under its own power. Most transceivers are radio or laser-based. Meson communicators are possible but are generally not easily portable or available.

To reach orbit reliably, a transceiver needs a range of 500 kilometres.



Radio Transceivers	Weight	Range	Cost
TL 5	20 kg	Distant (5km)	Cr. 225
TL 5	70 kg	Very Distant (50km)	Cr. 750
TL 5	150 kg	Regional (500km)	Cr. 1,500
TL 5	300 kg	Continental (5,000km)	Cr. 15,000
TL 8	-	Distant (5km)	Cr. 75
TL 9	-	Regional (500km)	Cr. 500
TL 9 (Computer/0)	-	Continental (5,000km)	Cr. 5,000
TL 10	-	Very Distant (50km)	Cr. 250
TL12 (Computer/0)	1 kg	Continental (5,000km)	Cr. 1,000
TL13 (Computer/1)	-	Very Distant (50km)	Cr. 250
TL14	-	Regional (500km)	Cr. 500
Laser Transceivers			
TL 9	1.5 kg	Regional (500km)	Cr. 2,500
TL 11 (Computer/0)	0.5 kg	Regional (500km)	Cr. 1,500
TL 13 (Computer/1)	-	Regional (500km)	Cr. 500

Communicator, Personal ("Comm") (TL 6): A hand-held, single channel communication device. On worlds with a Tech Level of 8 or higher a personal communicator is able to tap into the world's satellite communication network and with the proper address, contact any other communicator in the world (for a small fee). The channel is private but not secure and may be monitored on some worlds. Usually network access can be arranged at the local starport for a few credits per week. On worlds without a comm network and satellites or ground relays to make long-distance communication possible, personal communicators will not work except for direct comm-to-comm contact over distances of not more than a few hundred metres.

Many individuals purchase accessories for their comm. The most useful is a specialized computer device called an Aide, available from TL 9 onward. The Aide stores a considerable amount of information which the character feels he may find useful, downloads news or market information when available and reminds the character about his schedule at appropriate times. Many travellers conduct their business by comm while on the move. An Aide costs Cr. 250.

Comms get smaller and more capable at technology advances but do not change greatly in function.

TL 6	Audio only	Cr. 50
TL 8	Audio and visual, Computer/0	Cr. 150
TL 10	Multiple forms of data, Computer/1	Cr. 500

Depth Gauge (TL 6): The depth gauge allows a character to know how far underwater he or she is. It is a simple device at TL 6. More advanced versions have more functions including air-remaining calculations and decompression-halt warnings. Cr. 25.

Metal Detector (TL 6): A handheld device able to detect the presence of metal within a 3 metre radius (including underground), with the indicating signal growing stronger as it gets closer to the source. Cr. 300.

Radio Jammers (TL 6+): First available in base-camp versions and then made portable by Tech Level 8, the radio jammer suite is a static generator that fills the wavelengths with incomprehensible noise. The basic models make radio-wave communications difficult up to 2km of its location. Most jammers are not effective against tight beam laser communication, however. Cr. 500.

TL 8: This version is more efficient, raising the range to 5km and the cost to Cr. 2,000.

TL 10 (personal): This version is as small as a cufflink and has a 10km range. It costs Cr. 5,000.

TL 10 (stationary): This is a huge version of a jammer attached to a power plant or starship, jamming radio communications up to 100km away from its location. It costs Cr. 20,000.

Tactical Relay Network (TL 6+): An essential piece of kit for any large mercenary unit, the tactical relay network is a fully integrated system of recorders and transmitters allowing individual active members to transmit important tactical information to one another and a central hub of monitors. The main hub then keeps track of everyone on the network. Early versions are simple radio headsets but at higher Technology Levels information such as medical readings and ammunition counters can be kept track of. Through the monitoring of this information, an officer can use his entire command efficiently. Every participating member on a tactical relay network can use the Tactics skill of the character monitoring the central hub, to a limit depending on the TL of the network.

TL	Information Relayed	Maximum Tactics Level Used	Availability	Cost ¹
6	Audio only	Tactics 1	–	Cr. 50
8	Audio and visual	Tactics 2	7+	Cr. 100
10	A/V, Transponder location, Computer/0	Tactics 3	9+	Cr. 200
12	A/V, medical readings, equipment status, Computer/1	Tactics 5	10+	Cr. 350

¹ This cost is per member unit; the central hub costs ten times this amount.

Atmosphere Tester (TL 7): A hand-held device that monitors air breathability and quality. A simple readout indicates pressure (“Thin”, “Dense” and so on) and whether the air is within breathable parameters. An audible alarm and flashing warning indicates unbreathable or toxic gas mixes but the unit does not indicate what the hazard composition is. Cr. 150.

Chemical Alarm (TL 7): A handheld device, which can also be mounted on clothing or a pack strap, or positioned upwind of a camp. The alarm gives audible and visible warning when dangerous chemicals (examples include industrial chemicals, sulphurous emissions from a volcanic vent or chemical weapons) are detected. It does not detect radioactive fallout or biological hazards such as spores or bio-weapons. Cr. 250.

Chemical Analysis Unit (TL 7): A small portable lab unit able to analyse gases or liquids, or even small samples of solids such as rock and metal. The unit gives a readout of composition and can monitor for certain compounds automatically, functioning as a chemical-threat alarm system. Cr. 10,000.

Motion Sensor (TL 7): A motion sensor detects any and all movement within the area assigned to it. It cannot differentiate between different kinds of movement, it just reports whether there is movement or not in an area of roughly six metres diameter. Cr. 500. At TL 9 the motion detector can report the general qualities of motion – size, speed and duration – but no more. Cr. 1,000. The Sensors skill is not required to use a motion detector to detect motion. When trying to interpret data from a TL 9 motion sensor, the Sensors skill may need to be checked.

NBC Alarm (TL 7): A personal alarm unit which automatically monitors for radiation, chemical and biological threats and gives both alarm and an indication of severity (Mild-Moderate-High-Severe-

Extreme). It does not indicate the specific threat but will inform the user whether the hazard is radiation, biological or chemical. For Cr. 1000, a more detailed output is available which will indicate the specific threat if known to the unit’s database. Cr. 250.

Commsat, Standard (TL 7): A simple communications-relay device designed to be placed in orbit from a starship or ground launcher. It will last about six months to a year in orbit and is not reusable. Cr. 150,000.

Sonar Rangefinder (TL 6): A simple sonar unit used primarily to determine the depth of water under a diver or the keel of a boat. Simple sonar units are not very accurate and are fooled by seabed clutter, fish and similar false returns. This personal unit is of little use in combat. Cr. 1,000.

Beacon, Navigational (TL 8): A simple radio beacon that can be set to respond to a specific signal or to transmit constantly. Cr. 500.

Bio-Analysis Unit (TL 8): A bulky biological mini-lab able to analyse most biological compounds and give an indication of their nature within a few minutes. More detailed analysis takes much longer. Using the unit to its best effect requires Biology skill but an individual can be taught how to run basic tests and interpret the results in a few minutes, allowing an untrained person to determine if a fruit is edible or if a strange dust is actually a harmful bio-warfare agent. Cr. 70,000.

Camera, Digital (TL 7): A basic digital visual recording device capable of interfacing with a computer or personal comm. Cr. 25.

Gun Cam (TL 8): A small rapid-recording camera placed on the barrel of a firearm, the gun cam is a useful tool for post-combat evaluation and training. The camera takes several seconds of recording around the pulling of the weapon’s trigger, allowing for slow-motion playback to see what the shooter was doing right or wrong – or the verification of kills. The gun cam costs Cr. 150, Availability 7+.

Rescue Transponder (TL 8): This device is a high-powered homing beacon worn on the wrist or ankle of the user. Activated with a quick snap of a safety tag, normally when wounded or captured, the tracker sends out a nearly constant emergency signal across several bandwidths to let allies locate the wearer. It has a 10km range, lasts 12 hours and costs Cr. 50.

TL 10: This version is more efficient, raising the range to 200km and the cost to Cr. 200.

TL 13: This version is not worn; it is swallowed and has a 1,000km range. It costs Cr. 750.

Satellite Ground Station (TL 8): A portable ground control and communications station allowing satellites to be controlled or manoeuvred in orbit. The ground station does not include launch capability. Cr. 5,000.

Scanner, Comms (TL 8): A handheld communications detector that allows the user to intercept and listen to (but not jam) radio traffic. Scanners cannot decrypt or record transmissions, nor can the device detect bugs and similar low-power transmitters. Cr. 250.

Scrambler Unit (TL 8): A small comms-scrambler and encryption unit that can be used with a personal comm or other communications devices. Cr. 200.

Translator (TL 8): A handheld device capable of translating audible language into Galanglic (or any other language it is programmed for). The basic translator is set for the common languages and several dialects of a region. Additional language chips are available for Cr. 500 per language. The translator cannot translate an unknown tongue. It is not "smart" but merely recognizes sounds and converts them. A unit capable of translating nonverbal communication (pheromones, sign language and so on) costs five times as much as the basic version. One example is the Voder used by Hivers to communicate with non-Hivers. Cr. 100.

Battle Computer (TL 9): The battle computer is a man-portable system (backpack weighing 18 kilograms) capable of capturing and collating intelligence and providing approximations of enemy forces. It can be linked to untended ground sensors via communication links to increase its potential and can provide visual displays overlaid on maps when interfaced with a map box. When attached to a communicator it can direct a powerful laser communication beam at one of several pre-programmed targets (such as relay satellites or tactical communication hubs) and automatically switch to back-up relays if primaries are jammed or rendered inaccessible. A battle computer system grants the commander of any battle a +2 DM to all Tactics throws when dealing with a monitored area. Cr. 100,000, Availability 10+.

Beacon, Emergency (TL 9): A multi-frequency beacon/repeater designed to assist rescuers. The beacon transmits an emergency signal and can record a simple message (no more than a minute in length) to be played if the beacon receives a coded signal (usually this is the direction or location of the beacon's users, if they have had to move). The beacon can also signal with a siren and flashing strobe light if manually triggered or if it receives an activation signal on the civilian or military emergency channels. Cr. 750.

Biohazard Alarm (TL 9): A handheld device capable of being emplaced to give early warning of biological threats. The biohazard alarm detects airborne proteins and can be used to give early warning of biological hazards such as airborne bacteria, spores or bioweapons. At TL 10 or higher the alarm will provide details as to the type of biohazard being detected. Cr. 1,000.

Chemical Sniffer (TL 9): Using a sophisticated air/liquid-intake device, the sniffer computes which chemicals are found in the air of an area. The process takes only a few minutes and can detail

specific elements in the sample taken. It is designed with large buttons and switches for the thick gloves of a vacc or environmental suit. Cr. 2,500.

Communicator, Personal, Advanced (TL 9): A more capable version of the basic hand-held comm, normally worn as a wristband. The advanced comm incorporates all the functions of an Aide and has more memory available for specialist functions (such as advanced encryption/decryption software). Cr. 300.

Commsat, Short-Term (TL 9): A simple communications-relay device designed to be placed in orbit from a starship or ground launcher. It will last about 4-8 weeks in orbit and is not reusable. Cr. 25,000.

Field Surveillance Radar (TL 9): The field surveillance radar is designed to provide surveillance of open areas in conditions of limited visibility. It has a range of 500 metres and comes with a tripod mount. It detects moving objects of 0.1 litres of volume or more within range and requires external power (a generator or a vehicle's power plant) to operate. Cr. 5,000.

Map Box (TL 9): Originally designed for wilderness exploration, the map box is a compact storage system for computer generated maps of a world. Scale may be adjusted by pressing a few buttons or (at TL 11 or higher) via voice commands. Most inhabited planets have insert wafers available, for Cr. 150 each, which will update the box appropriately. When not available, two orbital sweeps of the world are required to obtain the necessary information to construct a map wafer. Blank map box wafers are available for Cr. 30. The use of a map box grants the user a +2 DM bonus to all skill checks involving direction and navigation of the mapped planet. The cost of a map box (with one planet pre-programmed) is Cr. 3,000.

Navsat (TL 9): A simple orbital beacon to assist navigation in space or on the ground. It can be deployed by a starship with missile launchers (in which case its orbital duration is indefinite, though systems will normally fail within two years) or from a ground launcher, in which case orbital life is a few weeks. Cr. 35,000.

Satellite Launcher, Field (TL 9): A semi-mobile ground launch unit for small satellites. The package includes a gantry and control unit, plus a single booster but no satellites. Additional boosters cost Cr. 50,000 and weigh 200 kg. The launcher can only put temporary satellites into low orbit. Cr. 100,000.

Anti-personnel Equipment Scanner (TL 10): This bulky set of goggles is used to search a person's body for metallic, plastic or ceramic devices – such as guns, knives, or explosives. By looking at a target with great scrutiny (1–6 minutes) within five metres, the character may make an Investigate skill check. If successful, the goggles penetrated the target's clothing/armour and found all inorganic devices in or on them. Weighs 1 kg, Cr. 10,000.

Combination Analysis Unit (TL 10): A Biological/Chemical lab unit in a portable housing, capable of all the functions of the bio and chemical analysis units but faster and with greater accuracy. The unit's database contains many common and uncommon compounds and can advise on the properties of (and hazards posed by) most known substances. Cr. 25,000.

Commdot (TL 10): A commdot is a tiny microphone/speaker and transmitter, ranging in size between a few centimetres and a few millimetres across. A commdot is capable of interfacing with another communications device and relaying messages back and forth. Commdots have a range of only a few metres. They are usually used as hands-free communicators but can also be used as improvised bugs or throat microphones. Cr. 10 each.

Electromagnetic Probe (TL 10): This handy device detects the electromagnetic emissions of technological devices and can be used as a diagnostic tool when examining equipment (+1 DM to work out what is wrong with it) or when searching for hidden bugs or devices. Cr. 1,000. The Sensors or Investigation skills can be used to sweep a room for bugs.

Holographic Projector (TL 11): A holographic projector is a toaster-sized box which, when activated, creates a three-dimensional image within three metres of it. The image can be given pre-programmed animations within a limited range and the projector includes speakers for making sound. The projected holograms are obviously not real so this device is mostly used for communication. The TL 12 version can produce holograms real enough to fool anyone who fails an Intelligence check (made upon first seeing the hologram) and the TL 13 version can produce holograms that are true-to-life images.

TL 11	Cr. 1,000
TL 12	Cr. 2,000
TL 13	Cr. 10,000

Survey Satellite (TL 11): A Sursat can be launched from a shipboard missile system or a ground launcher. It is capable of undertaking basic communications and beacon functions and quite sophisticated mapping and survey operations. Sursat can report on weather and atmospheric conditions constantly. Life is 3-5 years if placed in a stable orbit. Cr. 100,000.

Biosniffer (TL 12): A portable biological detection and analysis unit, the biosniffer can be used to detect traces of organic processes (life) or to analyse the composition of matter. Its internal database allows rapid indications to be made as to the nature of biological matter and whether it poses a threat to travellers. Results are obtained automatically and faster (a sample will typically take 10-60 seconds to analyse) than with lower-tech devices.

Biosniffers can be emplaced and used for remote analysis and monitoring and can be programmed to indicate the presence of specific types of creature. They can thus be used to indicate, for

example, whether a given game trail is used by humans, Vargr or the local predators, or to give warning of the approach of any large carnivore. Biosniffers are most commonly used by field scientists surveying planets or by botanists searching for new species. Cr. 20,000.

Bug Detector (TL 12): A handheld scanning device designed to detect electronic listening devices. The basic bug detector can only be used to scan for bugs but for Cr. 2,500 (and an additional kilogram) a detector/jammer is available. This unit has two more settings: it can overload and destroy bugs within range (a few metres) or simply jam their output for a time, leaving them functional after the jammer is switched off. The detector can only detect, jam or destroy bugs up to TL 12. Cr. 1,000.

Bugging Kit (TL 12): A set of small electronic listening/transmitting devices and a receiver unit. More advanced kits are available at TL 13, TL 14 and TL 15. Each TL adds Cr. 2000 to the price of the kit but makes detection a little harder (-1 DM penalty for each TL above 12). Cr. 750.

Camera, Advanced Digital (TL 13): An advanced version of the digital camera. Capable of recording and displaying moving holographic images. Cr. 100.

Forensic Sweeper (TL 13): This complicated handheld device is a multi-medium scanner which looks for radiation residue, ballistic particles, chemical traces and bio-organic remains all at once. Within an hour of sweeping a 20 square metre area with the handheld wand and succeeding in an Investigate skill check, the device will know all of the following pieces of information. Weighs 2 kg, Cr. 7,500.

- The types of weapons fired in past 36 hours.
- The known species of any beings passing through the area in the past 12 hours.
- The known species of anyone injured in the area during the past 48 hours.
- If any chemicals (drugs, poisons and so on) were in use during the past 12 hours.

Nuclear Dampers (TL 13+): A common term used to describe safety devices built against nuclear weaponry, dampers units are actually used to decrease the stability of atomic nuclei. By projecting a localised field from two separate stations (one master and one slaved), a wide area of altered isotopic energy is produced – seeking out the unstable nuclei of weapons-grade materials. In the area of the fields, the strong nuclear force is depressed, making the nucleus much less stable. The fields are primarily designed to be focused on incoming nuclear warheads, causing them to rapidly shed neutrons at low energy levels, rendering the warhead inoperable as its core material disintegrates on an atomic level.

Any nuclear devices that are not currently already in a state of fusion (fusion cells, starship cores and so on) will have a penalty of the Effect

of the damper operator's Computer skill check to any attacks made. The range of the damper field is proportional to the distance separating the two stations. At Tech Level 13, the ratio is 100:1 (a separation of 50 metres between stations would give a field range of 5 kilometres). Each damper station weighs 75 kg and the maximum distance the stations can be apart before the field disperses is 200 metres. MCr. 5.

TL 14: As above and the ratio is now 500:1 (a separation of 50 metres between stations would give a field range of 25 kilometres). MCr. 10.

TL 16: As above and the ratio is now 1,000:1 (a separation of 50 metres between stations would give a field range of 50 kilometres). MCr. 20.

Densitometer (TL 14): A bulky device that can use an object's natural gravity to measure its density, building up a three-dimensional image of the inside and outside of an object. Densitometers are used by field scientists and engineers to determine the thickness and density of materials. They can give an indication of the likely composition of a material and can be used to map underground areas or buildings without entering them. Wt 5 kg, Cr. 20,000.

Neural Activity Detector (TL 14): A large and bulky unit which detects brainwave activity within 500m. The NAS can indicate the order of the creature emitting it (Human-equivalent might be Vargr, Aslan or Droyne; Dog-equivalent might be a horse or a kian) and the number of emissions (individuals) within an area. The unit is not very reliable or precise and can be fooled by large numbers of low-order brainwave emissions. Wt 10 kg, Cr. 35,000.

Bioscanner (TL 15): The bioscanner is a small handheld unit which 'sniffs' for organic molecules and tests chemical samples, rapidly analysing the make-up of whatever it is focussed on. It can be used to detect poisons or bacteria, analyse organic matter, search for life signs and classify unfamiliar organisms. Analysing a sample will normally take 1-6 minutes. Wt 3.5 kg, Cr. 350,000.

Bug Detector, Advanced (TL 15): A handheld scanning device designed to detect electronic listening devices. The standard bug detector can only be used to scan for bugs but for Cr. 7,500 a detector/jammer is available. This unit has two more settings: it can overload and destroy bugs within range (a fewmetres) or simply jam their output for a time, leaving them functional after the jammer is switched off. The advanced detector only detect, jam or destroy bugs up to TL 15. Cr. 1,000.

Densitometer, Compact (TL 15): A handheld version of the standard densitometer, giving slightly better resolution. Wt 1.5 kg, Cr. 28,000.

Neural Activity Detector, Improved (TL 15): A hand-held version of the Standard Neural Activity Detector. TL 15 units are more reliable than earlier models. Wt 1 kg, Cr. 65,000.

Psi-Scanner (TL 16): An extremely advanced version of the sorts of tools used in psionic testing facilities, the psi-scanner is a short ranged, handheld device that looks like an improved neural activity detector. Anything with a Psi Characteristic rating higher than 3 will register on the scanner within 20 metres; something with a Psi of 10 or higher will register as 'high potency' upon the device. Cr. 50,000.

Options

Helmet Reader (TL 9): A single type of sensor feed can be wirelessly fed into the eyepiece HUD of a basic combat helmet with this option. Cost Cr. 250.

TL 10: Can receive up to three feeds at once. Cost Cr. 500.

TL 11: Can receive up to five feeds at once. Cost Cr. 750.

TL 12: Can receive up to eight feeds at once. Cost Cr. 1,000.

TL 15: Can receive information from unlimited feeds at once. Cost Cr. 5,000.

Implant (TL 13): Any small sensor can be turned into a cybernetic implant. It costs 20 times as much as normal.

Computers and Software

The power of a computer is given by its rating (Computer/1, Computer/2 and so forth), which measures the complexity of the programs it can run. Storage space is effectively unlimited past TL 11. Programs are rated by the computer rating they require. A system can run a number of programs up to its rating – for example, a Computer/2 could run two programs requiring Program/1 at a time, or one Program/2, or a Program/2 and any number of Program/0s.

The one exception is that a Computer/0 can only run one Program/0 at a time.

Hand Calculator (TL 5): Provides basic mathematical calculations. Most engineering and scientific calculations can be done with this device – eventually. Plotting a Jump by hand, even with a calculator, is a very long process requiring days of intense effort. Cr. 10.

Hand Computer (TL 7+): A hand computer is a portable computer system with considerable processing power. It is more powerful than a computer terminal and can be used without access to a network. A hand computer can serve as a terminal for a more powerful system when linked up by its integral radio, network interface jack, or by other circuits. A hand computer is also capable of audio recording and playback and includes an integral digital camera. A hand computer costs twice as much as a normal computer of the same TL. Wt 1 kg. At TL 13+ wt drops to 0.5 kg.

Computer Terminal: (TL 6): This is a 'dumb terminal', with only limited processing power. It serves as an interface to a more advanced computer such as a ship's computer or planetary network. Terminals range in size depending on their control method – a holographic display terminal can be much smaller than one with a physical keyboard and screen. A computer terminal has Computer/0 and costs Cr. 200.

Options

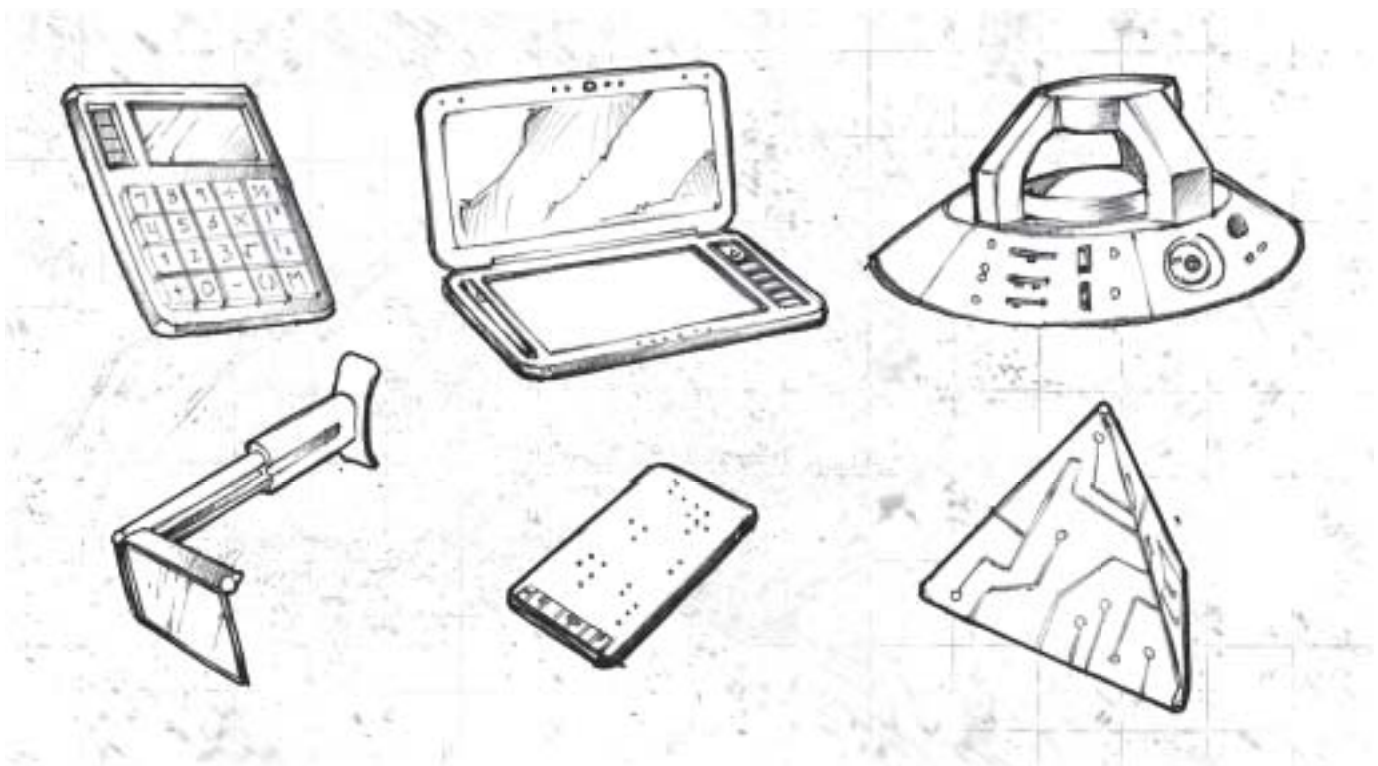
Data Display/Recorder: (TL 13): This headpiece consists of a small rectangle of polylucent cuprothallium that provides a continuous heads-up display for the user, allowing him to view computer data from any linked system. DR/R headsets are commonly used by starship crews, to access information without changing their primary console displays. DR/Rs can display data from any system, not just computers – they can display vacc suit oxygen reserves, grav belt status, neural activity scanner results and so forth. Cr. 5,000.

Data Wafer: (TL 10): The standard medium of information storage in the Imperium is the standard data wafer, a rectangle of hardened plastic about the size of a credit card. The interface for a data wafer is standardised but the internal workings vary. A TL 10 data wafer is solid-state memory; TL 14 wafers are memory diamond, with information encoded in structures of carbon atoms. Cr. 5.

Psi-Linkage Receiver (TL 16): Advanced psionic studies allow a character with the right telepathic passwords (something which can

only be shared telepathically) to 'log on' and work with the computer using their Telepathy skill instead of their Computers skill. This can be done in the same manner that the psion would interact with a living mind, except they are communicating with a crystal-matrix energetic translator program. Although this makes computing fast and easy for the psion in the short term, longer sessions are very disorienting and numb the psion's other senses. A psion using this component will suffer a -1 DM on all other Skill Tests for a length of time after they disconnect with the receiver equal to twice the length of time they were connected. Cr. 150,000.

Specialised Computer: A computer can be designed for a specific purpose, which gives it a Computer of 1 or 2 higher for that program only. The navigation computer on a starship might be only a Computer/1 but it could run the Navigation/3 program because it is specially designed for that task. A specialised computer costs 25% more per added rating – so, a Computer/1 Navigation/3 machine costs 150% of the cost of a basic Computer/1.



Software

A character can use any high-rating software at a lower rating, to a minimum of the lowest rating shown. For example, you can run Intrusion/3 on a Computer/1 but it functions only as Intrusion/1.

Software	Rating	TL	Cost	Effect
Interface	0	9	Included	Displays data. A character trying to use an Expert program over a standard interface suffers a -4 DM.
Intelligent Interface	1	11	Cr. 100	Artificial intelligence allows voice control and displays data intelligently.
Kinetic Interface	1	13	Cr. 5,000	Allows expert programs to interact with Neural Link.
Security	0	9	Included	Security programs defend against intrusion. Rating 0 is Routine (-2) difficulty.
	1	10	Cr. 200	Average (+0) difficulty
	2	11	Cr. 1,000	Hard (-4) difficulty
	3	12	Cr. 20,000	Formidable (-6) difficulty
Intrusion Counter measures ('ICE')	1	11	Cr. 75,000	ICE programs act as a Security program of the same rating. In addition they actively trace an intruder and can initiate an automated response, such as directing security teams to the location or trying to burn out circuits used to connect the hacker to the system.
	2	12	Cr. 150,000	
	3	14	Cr. 300,000	
Intrusion	1	10	Cr. 1,000	Intrusion programs aid hacking attempts, giving a bonus equal to their rating. Intrusion software is often illegal.
	2	11	Cr. 10,000	
	3	13	Cr. 100,000	
Automated Intrusion (Autohack)	1	11	Cr. 5,000	Autohack programs can be preset to attempt a specific goal (turn the alarms off, find certain information and so on) and will attempt to hack the system as if they were a person with a Skill level equal to the program's rating.
	2	13	Cr. 25,000	
	3	15	Cr. 250,000	
Expert	1	11	Cr. 1,000	Expert programs mimic skills. A character using an expert system may make a skill check as if he had the skill at the program's rating -1. Only Intelligence and Education-based checks can be attempted (unless the computer also runs a Kinetic Interface and the user has a Neural Link).
	2	12	Cr. 10,000	
	3	13	Cr. 100,000	
Translator	0	9	Cr. 50	Translators are specialised Expert systems that only have Language skills. The TL 9 version just provides a near-real-time translation. The TL 10 works in real-time and has a much better understanding of the nuances of language.
	1	10	Cr. 500	
Database	-	7	Cr. 10 to Cr. 10,000	A database is a large store of information on a topic which can be searched with a Computer check or using an Agent.
Agent	0	11	Cr. 500	Agent programs have a Computer skill equal to their rating and can carry out tasks assigned to them with a modicum of intelligence. For example, an agent program might be commanded to hack into an enemy computer system and steal a particular data file.
	1	12	Cr. 2,000	
	2	13	Cr. 100,000	
	3	14	Cr. 250,000	
Intellect	1	12	Cr. 2,000	Intellects are improved agents, who can use Expert systems. For example, a robot doctor might be running Intellect/1 and Expert Medic/4, giving it a Medic skill of 3. A Intellect program can use a number of skills simultaneously equal to its Rating.
	2	13	Cr. 50,000	
	3+	14	-	

Programs above Rating/1 cannot be copied easily, as they require a non-trivial amount of bandwidth to transfer.

Pets, Livestock and Heavy Equipment

It is not possible to detail every possible purchase here but a few of the most common and useful ones are listed, along with labour-saving equipment. The legal status of robots varies from place to place. Some worlds embrace automation and machine intelligence, giving even comparatively simple artificial minds legal protection or even citizenship. Others are so restrictive that cyborgs can find themselves being classified as property instead of people.

The only real difference between a robot and a drone is that the robot has an Intellect program running, allowing it to make decisions independently, while drones are remote-controlled by a character with the Remote Operations skills.

Companion Animal, Medium (TL 0): A dog or similar animal kept as a pet or working animal. Fighting or guard dogs and similar animals start at five times the listed price. Cr. 10 to Cr. 1,000.

Companion Animal, Small (TL 0): A cat, parrot or similar animal kept as a pet. Animals of this type are unlikely to be much use for anything except being lovable and annoying in equal measure. Cr. 1 to Cr. 100.

Food Animal, Large (TL 0): A live cow or similarly sized food animal. Good breeding stock animals may cost upwards of 20 times the price of a beast intended for slaughter. Cr. 100 to Cr. 1,000

Food Animal, Medium (TL 0): A live sheep or similarly sized food animal. Good breeding stock animals may cost upwards of 20 times the price of a beast intended for slaughter. Cr. 20 to Cr. 200

Food Animal, Small (TL 0): A live chicken or similarly sized food animal. Good breeding stock animals may cost upwards of 20 times the price of a beast intended for slaughter. Cr. 1 to Cr. 10.

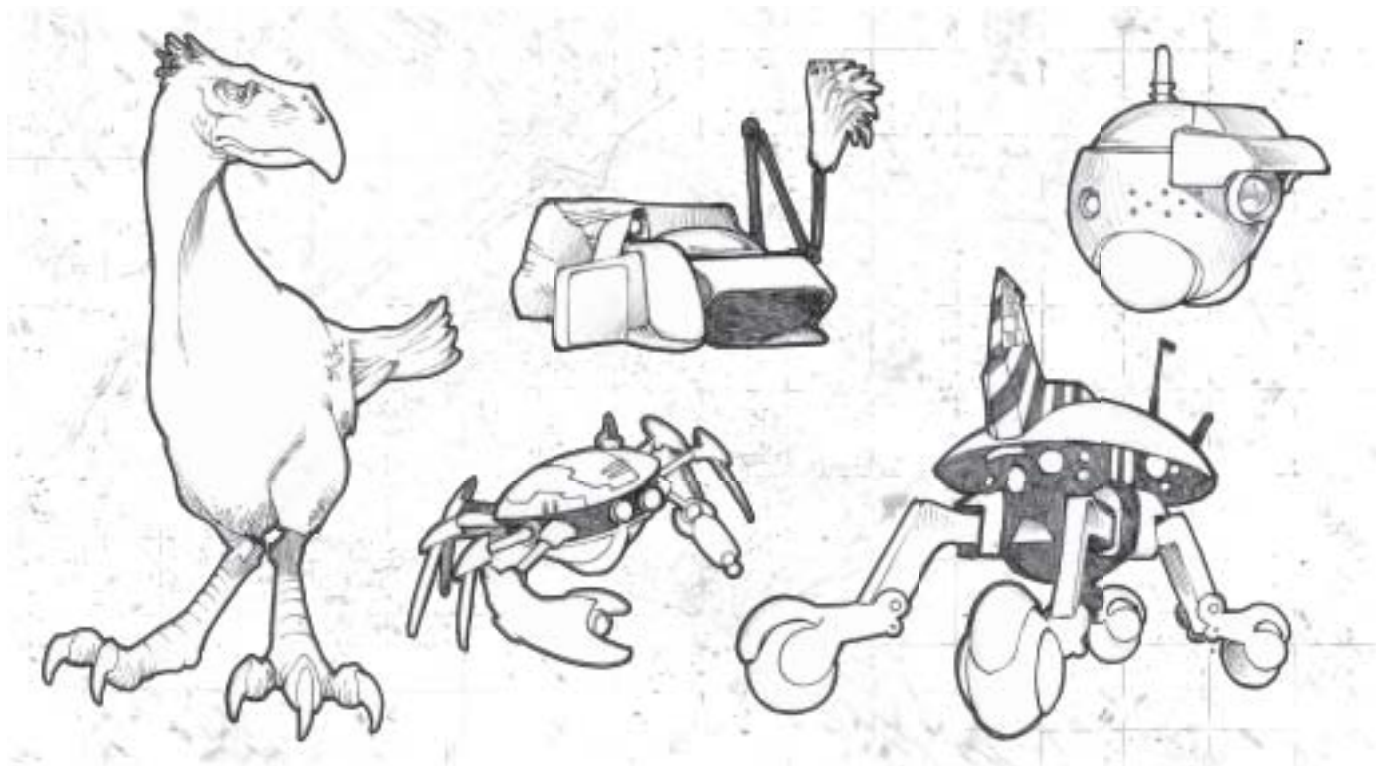
Kian (TL 0): An alternative riding animal to the horse, Kian are large flightless birds encountered throughout Charted Space. Like horses, they take a considerable amount of feeding and general looking-after but can provide mobility in areas where vehicles are inappropriate. Cr. 1,000.

Riding Horse (TL 0): A horse of reasonable quality for riding. Horses take a considerable amount of feeding and general looking-after but can provide mobility in areas where vehicles are inappropriate. Specialist animals such as cavalry mounts or racehorses start at five times the price, high-quality animals can cost 1,000 times as much again (or more!). Cr. 1,200.

Cargo Hoist (TL 8): A portable powered hoist used to manoeuvre heavy objects (such as cargo containers) outside a starship or in a frontier port with no facilities available. Cr. 5,000.

Cargo Robot, Basic (TL 9): Cargobots are simple, heavy-duty robots found in starport docks and on board cargo ships. They have enough intelligence to unload crates but are easily confused by unexpected situations. When confused, they shut down unless given direct commands, to ensure they do not accidentally damage anything with their massive strength. Armour 8. Costs 75,000 Credits.

Handler Drone (TL 9): An alternative to the cargobot, a handler drone is a powerful lifting/carrying unit operated from close by. It



uses a “waldo” system, whereby the user directly controls the drone with his or her own body motions. Cr. 30,000.

Dozer Drone (TL 9): The dozer drone is an earthmoving unit operated from close by. It is fitted with a dozer blade and a small backhoe. A properly used dozer drone is capable of doing the work of 8 men. Cr. 50,000.

Loader Robot (TL 9): These standard battlefield robots are programmed to replace artillery crewmen, loading the weapon. It requires verbal commands from the other members of the artillery crew, keeping units from running completely automated artillery teams. The robot effectively has Heavy Weapons (Field Artillery) 1. Armour 8, Hull 3. Costs Cr. 80,000.

Recon Drone (TL 9): About the size of a ground car, recon drones are equipped with a wide array of radar and visual sensors to map out a given area. Most recon drones are built as grav units and thus are highly manoeuvrable. They can be fitted with up to three additional types of sensor packages for the appropriate cost and can be remotely-linked to a battle computer or other monitors. Remote drones also come with two hardpoints where pistols or rifles could be mounted and fired by remote control. Base cost is Cr. 200,000.

Cargo Walker (TL 10): A variation on the cargobot theme, a Cargo Walker is a powered exo-skeleton superficially similar to Battle Dress. It is much more bulky and a lot clumsier but permits an individual to act like a walking forklift truck, which can be useful in tight spaces. The Cargo Walker has the capacity to lift and carry up to 4,000 kilograms. Cr. 45,000.

Janitorial Robot (TL 10): A small, automated robot capable of being ‘taught’ which areas to look after. It will run a pre-programmed cleaning routine or can operate semi-autonomously, vacuuming, dusting and sweeping at intervals and also responding to cues like the sound of breaking crockery. The basic model is rather stupid and tends to bang into things, trip people up and get kicked across the room. A more advanced version (at three times the price) has better software and is generally better-behaved. Janitorbots have been observed following pets around or trying to ‘tidy up’ people who have stood still too long in the wrong place. Cr. 5,000

Minesweeper Drone (TL 10): Hovering disks equipped with ground-scanning sensors and concussion generators, minesweeper drones are perfect for scouring terrain for landmines and detonating them. The drone has Combat Engineering 2 for the purposes of finding landmines and it can set off a pressure or trip-based mine safely on a basic check of 8+. Armour 4, Hull 2. Cr. 95,000.

Prowlerbot (TL 10): The prowlerbot is an automated security unit. It trundles about at walking speed on four inflatable tires and can be programmed with a route or ‘taught’ to patrol a given area in a

semi-random manner. The Prowlerbot has thermal and movement detectors and sounds a shrill alarm if it discovers something untoward. Alternatively, it can be instructed to quietly alert a supervisor and act as if it has not detected anything. Prowlerbots are not usually armed as special licensing is often needed for security robots but are capable of being equipped with a single firearm or laser weapon. Cr. 10,000.

Spotter Drone (TL 10): Tiny drones which are little more than a lift unit and a laser target designator, the spotter is an artillery team’s best friend. The small unit flies out to where the artillery needs to fire, spends 1 – 6 minor actions holding the laser designator on the target and waits for the attack. This requires the drone’s operator to pass a Difficult Remote Operations or Recon skill check but will add a +4 DM to the designated artillery team’s next attack roll when shooting at the target. Hull 1. Cr. 12,000.

Animal, Psionic (TL 11): Available at the Technology Level where they can be reliably scanned and domesticated, these are special animals that have latent psionic abilities used in their natural environment to find and catch prey, or elude predators, or for one of many other reasons why they evolved psionics. The cost of a psionic animal varies but it can be calculated by multiplying the total level of psionic skills the animal has by its Psi Characteristic times 100. So, a psi-wolf that uses Clairvoyance 2 to find prey hiding from it has a Psi Characteristic of 6; it would cost 1,200 Credits (2 x 6 x 100).

Cargo Robot, Improved (TL 11): A more advanced version of the TL 9 cargobot, identical in most ways. An improved cargobot is capable of more delicate operations and better decision-making. It is programmed with handling requirements for various special cargo types and can cross-reference these with the stated needs of the user to formulate the most efficient unloading system. Armour 8. Costs 75,000 Credits.

Personal Drone (TL 11): This is a small floating globe about 30 centimetres in diameter. It is equipped with holographic projectors which can display the image of a person, allowing a character to have a virtual presence over a great distance. At TL 13+ the image is largely indistinguishable from a real person, although the cost will be doubled. Cr. 2,000.

Medi-shell (TL 11): An armoured, walking medical evacuation system, the medi-shell looks like a metal sarcophagus with four legs. It opens by the key commands of its user(s) and can have an injured or unconscious humanoid of up to 2.5 metres in height inserted inside. A living being inserted into the sarcophagus is placed in a chemical stasis and stabilised with Medic/1 until another keycode is punched in. The medi-shell can be given basic navigational coordinates and set in motion, otherwise it will simply walk behind its operator. The medi-shell has an Armour of 12. Cr. 110,000.

Probe Drone (TL 11): A probe drone is a hardened version of a personal drone, armoured and carrying more sensor packages. They have an operating range of 500 kilometres and can fly at a speed of 100 kph. Probe drones have armour 5. Cr. 15,000.

Repair Robot (TL 11): Shipboard repair robots are small crab-like machines that carry a variety of welding and cutting tools. They scuttle around tiny access tunnels but also crawl over the exterior hull to conduct repairs and maintenance. Cr. 10,000.

Autodoc (T L12): An autodoc is a specialised, immobile medical robot, which is often installed inside vehicles or spacecraft. It runs Intellect/1 and Medic/3 and has access to all the resources of a TL 12 medikit. Cr. 40,000.

Combat Drone (TL 12): Combat drones are little more than flying guns mated to a grav floater and a computer system. The most common combat drone mounts a PGMP-12 or assault rifle and has an Armour of 9. The drone must be piloted by a character with the Remote Operations skill and the appropriate weapon skill. Cr. 90,000 plus the cost of the mounted weaponry. Combat drones loaded with Intellect and other combat Expert programs (making them autonomous combat robots) are illegal on many worlds.

Repair Walker, Improved (TL 12): A sealed version of the standard repair walker, with the user encased in a life-support bubble for work in space or underwater. The improved Repair Walker costs Cr. 150,000 and is treated to resist corrosive and insidious atmospheres, enabling work in almost any environment. Cr. 120,000.

Servitor (TL 13): Servitor robots are expensive humanoid robots who are programmed to act as butlers or servants to the nobility. Servitor drones have Intellect/1 and Steward/2. Many servitors are ostentatiously or whimsically decorated, others are equipped with hidden weapons and combat programs. Costs 120,000 Credits.

Synthetic, Animal Design (TL 14): Extremely advanced animatronics mixed with synthetic flesh and muscle tissues, this synthetic class of robot is a fabricated animal of a specific species. Instead of instincts and behaviours they are programmed to behave a particular way. Instead of organic tissues they have inorganic substitutes. Instead of life, they have a matter-to-energy conversion system mimicking eating and digestion. It is very hard to physically tell a synthetic animal from the real thing unless it is damaged.

A successful Animals skill check will reveal the synthetic does not act as it should but it is only when the first five centimetres of synth-flesh is removed in some way to reveal the animatronics that anyone will be able to confirm its artificial nature. Synthetic animals can be given many verbal commands by the one it recognises as its owner but rarely anything more complex than what a normal animal might be able to perform. Cost depends on the size of the animal: Small: Cr. 500,000. Medium: Cr. 1,000,000. Large: Cr. 5,000,000.

Synthetic, Humanoid Design (TL 16): The next leap in synthetic creature design, this is a programmable humanoid physically looking like a perfect example of the species. Built in the same fashion as the animal-design types, all of the same physical issues are the same. However, someone must pass a Social Sciences skill check to know something is not right with the synthetic's mannerisms. Additionally, a synthetic humanoid can only be programmed with 100 audio responses based on trigger phrases. 'How are you today?' could trigger the synthetic's response of 'Fine and you?' A phrase like 'Frak you!' could trigger the response 'Back at you, scumbag!' and so on. Humanoid synthetics are not any more 'intelligent' than those of the animal design, receiving and responding to simple commands easily enough but nothing terribly obtuse or complex. Humanoid synthetics cost 50,000,000 Credits to be created on a basic template of 'person' but specific models used to match someone's visage and voice are possible. These mimics are illegal in most of Charted Space and can run upward of 200,000,000 Credits.

Options

Optional extras can be added to most robots and drones.

Additional Manipulation: Robots (not Drones) can be given additional 'arms' to be able to better interact with the world around them. Each additional limb adds an effective +1 to the robot's Dexterity, as they can each better affect the actions that the robot is taking. Increases the robot's cost by 15% per limb, calculated one at a time.

Armour: Drone and robot armour can be increased by 5, which increases the drone's cost by 25%. This extra can be installed two times.

Armour, Specialised: Robots can be fitted with the equivalent of any Combat Armour or Powered Armour Suit for a cost equal to 125% of the armour being fitted to the robot.

Artificial Intelligence (AI): Outlawed and illegal in most advanced societies, Artificial Intelligence programs are only available at Technology Level 15 or higher. True A.I. – the ability to think, grow and evolve on a mental basis – is something that baffles all those before TL 18. All others are nothing more than extremely advanced logarithms and programs. For those who find access to the science able to create it, false A.I. costs 3,000,000 Credits per point of simulated Intelligence and Education. True A.I. is a priceless science that would cost billions of Credits to obtain.

Integral System: Certain devices can be built into drones or robots by increasing the cost of the device by +50%. Popular choices include toolkits of different kinds, various sensors, or mobility upgrades like thrusters packs or grav floaters.

Self-Destruct: Explodes as per a frag grenade with a 5metre radius when directed to do so with a successful Remote Operations skill roll but increases the drone's cost by 25%. The high cost is to protect the drone from accidental or enemy self-destruct activation.

SUBSISTENCE AND LIVING EXPENSES

Daily life for adventurers can get expensive. Temporary lodgings, food, drink and local travel can all be quite costly. This section deals with these staples of daily life. It should be noted prices vary from one locality to another and there are some places you just can not get a decent lobster omelette for any amount of credits.

Characters need to feed themselves and have a place to live while not involved in adventures. It is not desirable to live forever off ration bars and glop from a fusion still. Farmers and low-tech barbarians in their home environment can be considered to live "for free" from farming, gathering, hunting and trapping what they need but everyone else needs to pay for long-term subsistence.

Meals

A standard meal costs from a few credits to 50 credits or more per person, depending on the level of quality and service. A burger of unidentifiable meat-like substances and eaten standing up in a fast-food joint costs 2-3 credits, a fine meal at the Traveller's Aid Hostel costs 20 credits, while a sybaritic feast of a dozen courses, with additional entertainment, costs 500 credits or more.

Accommodation

Accommodation for a night in a cheap hotel costs 10 credits; a good hotel can be found for 50 to 100 credits. Luxury hotels cost 100 credits or more. The Traveller's Aid Hostel is available to members and their guests for 20 credits per night.

A character living on board a ship is assumed to have his food and lodging taken care of. A character living on a planet or orbital for a long period must spend money on their living costs – the amount depends on the quality of life desired. A character who does not live at the standard listed for his Social Standing risks being embarrassed and even losing his standing.

Standard of Living	Cost/Month	Suitable For
Very Poor	Cr. 120	Social Standing 2
Poor	Cr. 200	Social Standing 4
Low	Cr. 300	Social Standing 6
Average	Cr. 400	Social Standing 7
Good	Cr. 600	Social Standing 7
High	Cr. 800	Social Standing 8
Very High	Cr. 1,000	Social Standing 10
Rich	Cr. 5,000	Social Standing 12
Very Rich	Cr. 10,000	Social Standing 14
Ludicrously Rich	Cr. 20,000	Social Standing 16

Medical Care

Healing: An injured character who needs hospital care for a prolonged period will pay approximately 100 credits per month per Technology Level (at TL 11+, the doctors will just use Medicinal Slow in most cases). Surgery costs 1d6 x 50 x Technology Level.

Mental Therapy: Individuals who face a great deal of stress, especially combat, can have their nerves frayed from their experiences. They could eventually crack under the pressure and some need outlets for their internal worries. A patient undergoing regular therapy (at least one session per month) can add +1 DM to any test against fear or shock and will pay approximately 50 credits per week per Technology Level.

Quarantine: Characters who pick up diseases or poisons may need to be segregated and quarantined from other living beings, requiring a complex isolation room, cell or lab. Or perhaps the characters need to quarantine someone – or something – they find in their travels. Quarantine protocols cost 1d6 x 15 x Technology Level per day.

Replacements: A character whose injuries require cloning limbs or cybernetic replacement must pay 5,000 credits per Characteristic point or 10,000 credits per limb.

PERSONAL AUGMENTS

Devices or modifications built into a living body to improve its capabilities are termed 'augments'. The practice is illegal on some planets and frowned upon in others. In some cultures, even simple replacement of body parts and organs is unacceptable, while there are worlds where body alteration is a fashion trend and considered quite normal.

Augments are often used to help colonists survive on hostile worlds. Denizens of a waterworld might be given gills and finger-webbing, for example, while those living on a world with dangerous native micro-organisms might have their immune and digestive systems altered to compensate.

Even where augments are legal, they may be controlled. This is usually considered a good thing, since messing around with genetics and adding cybernetic parts to a person can have unpredictable effects.

Some augments are created by long-term genetic programmes, some by surgery, some by biological manipulation and some by a combination of methods. The augments given below are listed by their effect in terms of game mechanics. In one locality a given augment may be set up by grafting on cybernetic parts, in another an alien symbiote might be the source.

There are some augments that are specifically cybernetic, genetic or bionic; which will be noted in their descriptions. As a general rule, cybernetic augments are mechanical and electronic in design and can be affected by EMP weapons. Genetic augments alter the living DNA structure of the recipient. Bionic augments are organic implants which would not occur naturally.

Augments can interfere with medical treatment. All long-term care or surgery Medic rolls treating a character suffer a negative DM equal to the difference in Technology Level between the medical facility and the highest relevant implant. For example, a character with TL15 Endurance implants being treated in a TL10 hospital would give a -5 DM to the surgeon's Medic skill checks.

Prosthetic, Crude (TL 3): Oftentimes a length of wood to make up for a lost leg, or a bent hook of metal to serve as a makeshift hand, crude prosthetics are awkwardly inefficient as the lost body part's replacement. The addition of a crude prosthetic requires a Medic skill check at -2 DM, with several more in the following weeks to stave off infection. Although these prosthetics allow for the user to have a limb where he did not previously, they are not utilitarian and have a -3 DM on all Dexterity tests using that limb. Cr. 100.

Prosthetic, Functional (TL 7): Built with better grade alloys and plastics, these prosthetic limbs and hands are the next best thing to having the real body part. It still requires a -2 DM Medic Skill Test to attach but only imposes a -1 DM penalty on all Dexterity tests made with the prosthetic. Cr. 250.

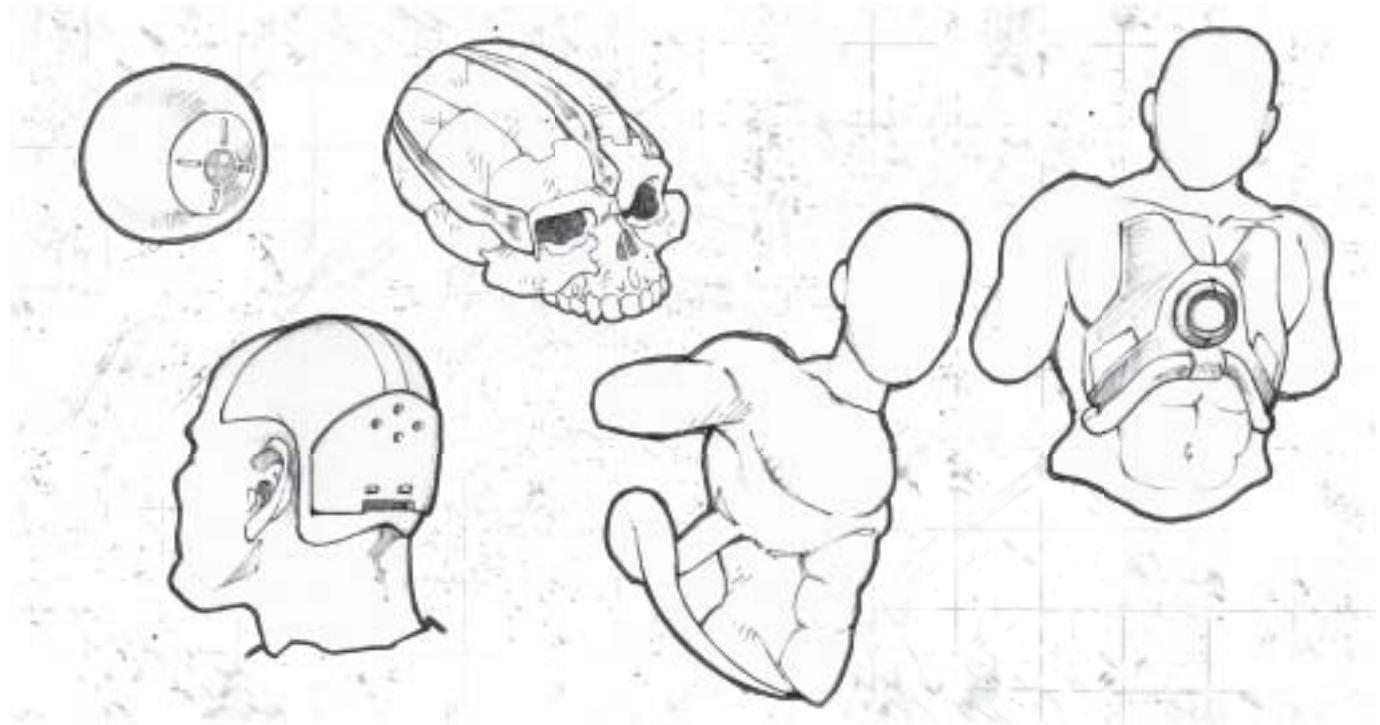
Cardiotrigger Detonator (TL 7+): The cardiotrigger detonator, or 'dead man bomb' as it is frequently called, is not normally an augmentation a person will willingly choose to have. Used

by terrorist organisations, rogue governments and (rarely) an occasional sociopath, this augment ties a single explosive device to the heart rate of the recipient. If the recipient's heart ever stops the bomb detonates 2d6 seconds afterwards. The Technology Level and cost of the cardiotrigger detonator is reliant on the type of explosive used, adding +1 to the Technology Level and multiplying the cost of the explosive by 10. Thus, a simple plastique cardiotrigger detonator would require TL 7 and cost Cr. 2,000 where a pocket nuke cardiotrigger detonator would require TL 13 and a massive Cr. 200,000!

Combat Arm (TL 8): One of the first combat implants to be designed, the basic cybernetic combat arm is an armoured metallic limb designed for combat. Oversized compared to a human arm, this augment grafts to the existing bone structure of the user and is powered by small power cells (1 kg; Cr. 25), keeping the arm active for 300 standard hours. The arm is considered to have an Armour rating of 8, a Strength of 12 and can be fitted with any melee weapon at 10% higher than the weapon's normal cost. Cr. 25,000.

Enhanced Mobility (TL 8): The recipient has their legs modified to move faster and carry more with greater stability. This augment adds 1.5 metres to the distance the recipient moves with a Minor action. Additionally, all Skill Tests based on balance or ambulatory reflexes are made with a +1 DM. The basic cost assumes two legs are being enhanced, where there are more than two legs modify the amount accordingly. Cr. 10,000.

Autonomous Locomotion Rig (ALR) (TL 9): A strange but useful augment, the ALR is a series of hardwired connections from the spine to the legs of the recipient. When necessary the character can 'program' his legs to carry him to a specific location set by remote,



despite his state of consciousness. Tired, wounded, drunk or even asleep; the ALR will cause the legs to walk the character to the specified location. The ALR follows a set path but will stop to avoid collisions with dangerous objects (like moving wheel cars or cliffs). Cr. 15,000.

Cockpit Sensory Suite (TL 9): An augment given to high-G fighter pilots and other fast-vehicle drivers, this genetic alteration thickens the membranes of the eye, speeds up hand-eye coordination and enhances blood flow to the brain in times of high pressure or stress. This augment adds +2 DM to all Pilot, Drive, Flyer and Seafarer skill checks taken at high speeds. Cr. 5,000.

Smuggling Container (TL 8): A portion of the character's body is surgically modified to house a polymer pocket made to look like normal skin. Using a trigger looking like a blemish or scar to open, the pocket can hold roughly 10 pounds of weight and nothing larger than eight inches in diameter. Costs Cr. 15,000 but can be difficult to obtain due to the obvious potential for illegal use (Availability 11+). It would take a Life Sciences or Investigate throw 10+ to discover the container when closed.

Additional Manipulator (TL 10): The addition of a segmented tentacle-like appendage can be useful in situations where the user requires a third hand. Made from polymer plastics and non-ferrous alloys, the appendage is rooted between two of the recipient's ribs, along the lateral side of their body. The appendage can collapse or extend from 20 centimetres to a full metre in length and has an effective Strength of 6 and Dexterity of 10. It is only a few centimetres in circumference but ends in a tiny collapsible claw with remarkable manual control. Cr. 7,500.

Aslan Cyber-claw (TL 10): The jointed metacarpal of the character has been replaced by a cybernetic mechanism and polymer sheath holding a retractable claw similar to the natural weapon of an Aslan. With a subtle flick of the wrist the mechanism locks or unlocks the three-inch long steel claw, allowing it to be used as a deadly weapon. Some Aslan have taken to getting their natural dew-claws replaced with these augmentations as a sign of their militant mentality.

Weapon	Skill	Damage	Availability	Cost
Aslan	Natural	1d6+1	9+	Cr. 20,000
Cyber-claw	Attack (Claw)			

Neural Comm (TL 10): A neural comm has identical capacities to a standard comm but the cost is much higher and the TL is increased by 4. For example, an audio-only comm costs 250 Credits and is TL 10. A character can access the capabilities of a neural comm by thought alone but it still takes a skill check to use.

TL 10	Audio only	Cr. 1,000
TL 12	Audio and visual, Computer/0	Cr. 5,000
TL 14	Multiple forms of data, Computer/1	Cr. 20,000

Shriekerbox (TL 10): A replacement to the recipient's own vocal chords, the shriekerbox is an electronic magnifier and modulator. Usually incapable of mimicking anything but the user's own voice, it can project it to the volume of a common electronic megaphone. Also, the user can create discordant static to unsettle those around him. Not usable while the character is speaking, the static feature of the shriekerbox inflicts a -1 DM on all Skill Tests made by characters without ear protection within 15 metres. A shriekerbox of TL 12 or higher is capable of mimicking any voice but costs double the price listed. Cr. 8,000.

Subdermal Armour (TL 10): Adds a mesh of ballistic fibres to the skin and reinforces the bones, giving the character extra armour. Subdermal armour stacks with other protection.

TL 10	Armour 1	Cr. 50,000
TL 11	Armour 3	Cr. 100,000

Weapon Implant (TL 10): One of the character's hands and attached forearm is replaced with a lifelike framework of alloy and polymers which has a secret hinged split in it. Opening in two halves, from between the middle and ring fingers to the elbow, the implant hides a small weapon which is shielded from most scanners (TL 12 and lower). The weapon is modified in structure to fit in the implant and operates on nervous impulse but is otherwise the same as its common counterpart.

Hidden Weapon	Availability	Cost
Dagger	8+	Cr. 5,000
Stunstick	8+	Cr. 10,000
Autopistol	9+	Cr. 12,000
Laser Pistol	10+	Cr. 25,000

Combat Arm, Improved (TL 11): An upgraded version of the common combat arm augment, this version is made of metal and polymer plastics around a more efficient mechanical core. Still larger than a human arm, this augment is fully attached to the nervous and skeletal structure of the user and is fuelled by the user's own biomass energy supply; the arm requires an additional 1,000 calories of ingested food daily to operate. The arm is considered to have an Armour rating of 12, a Strength of 14 and can be fitted with any melee weapon or slug pistol at 10% higher than the weapon's normal cost. Any pistol integrated in the arm will have an external port for modified ammunition magazines. Cr. 45,000.

Enhanced Mobility, Improved (TL 11): Adding internal chemical pumps and fatigue-resistant fibres to the legs of the recipient, his ground speed and agility is greatly increased. This augment adds 3 metres to the distance the recipient moves with a Minor action. Additionally, all Skill Tests based on balance or ambulatory reflexes are made with a +2 DM. The basic cost assumes two legs are being enhanced, where there are more than two legs modify the amount accordingly. Cr. 15,000.

Physical Characteristic Augmentation (TL11): A character's Endurance, Strength or Reflexes can be increased in various ways, from replacing motor neurons with faster synthetic cells, to reinforcing bones and replacing organs with tougher vat-grown clones. Augmentations must be purchased for each characteristic separately. Only one augmentation for each characteristic may be used by an individual.

TL 11	Characteristic +1	Cr. 50,000
TL 12	Characteristic +2	Cr. 100,000
TL 15	Characteristic +3	Cr. 500,000

Venom Glands (TL 11): This bionic augment is the insertion of toxic salivary glands into the jawbone of the recipient, making their saliva a potent necrotic toxin. If the recipient has a natural Bite attack, they now inflict an additional 1d6+3 venom damage upon any living target they inflict bite damage upon. If the recipient does not have a Bite attack, they do now. It inflicts 1 point of damage maximum but will inflict the additional 1d6+3 venom damage if they manage to wound a target. The recipient is immune to his own venom but not anything else's. Cr. 10,000.

Advanced Subdermal Armour (TL 12): This is an upgraded version of normal subdermal armour, using even more advanced polymers and lightweight alloys to line the character's organs as well as skin. Advanced subdermal armour still stacks with other protection but not other types of subdermal armour.

TL 12	Armour 4	Availability 10+	Cr. 250,000
TL 14	Armour 5	Availability 11+	Cr. 500,000

Ballistic Tracking Lenses (TL 12): The character's retinas have been laced with tiny receptors. These retinal receptors place an outline over any object the character is currently aiming a weapon at, to allow better target acquisition. BTLs (as they are called) give the character a +1 DM on all ranged attacks where he can see the target. Costs Cr. 40,000 with an Availability of 10+. The character's eyes will shine strangely in direct lighting, revealing the BTLs to observers.

Mental Characteristic Augmentation (TL 12): Replacing slow nerve cells with faster synthetic substrates and implanting optoelectronic boosters can increase the speed at which a character thinks, effectively boosting his Intelligence. Only one augmentation may be used by an individual.

TL 12	Intelligence +1	Cr. 100,000
TL 14	Intelligence +2	Cr. 500,000
TL 16	Intelligence +3	Cr. 2,000,000

Metastatic Platelet Injection (TL 12): A injection of super-powered clotting cells which bond with existing platelet production cells. The platelets reproduce extremely rapidly when active, sealing wounds quickly. The scabs and scars they leave are always a pasty blue in colour however, a sign of the artificial proteins in their construction. This augment doubles the normal healing rates of the recipient. Cr. 25,000.

Skill Augmentation (TL 12): The character's nervous system is rewired to be more suited to a particular task. A pilot might have his reflexes and sense of balance improved; a broker might be made capable of controlling his pupil responses and smelling the pheromones and skin salinity of the other party. A skill augmentation gives the character a +1 DM when using that skill. Costs Cr. 10,000. A character can only have one augmentation per skill and must possess the skill at level 0 or more to benefit from the augmentation.

Soldier Organ Package (TL 12): A combination of genetic alteration and bionic additions to the organ cavity of the recipient, this extensive and expensive body augment was originally designed to help create more efficient soldiers. It adds several redundant organs, improves existing ones and inserts a few improved new versions which work in concert with the recipient's biology to make them more efficient than they were before.

The organ package process is long, requiring 1d6 months of constant care and medical visits and a steady supply of anti-depressants, genetic stabilisers and basic antibiotics. When the process is finished however, the recipient has all of the following organ structures and the listed effects they grant.

- **Tri-Lung Capacity** grants an additional 15 minutes of air when needed.
- **Bi-Liver Complex** grants immunity to alcohol and most other ingested toxins.
- **Adrenometer** allows for 36 hours of wakefulness without penalty on a 6,000 calorie daily intake without the need to sleep.
- **Quad-Kidney Cycle** allows survival on half normal water consumption.
- **Aortal Heart Bud** grants an additional +2 DM on all tests based on Endurance.

The whole soldier organ package costs 1,500,000 Credits and is extremely hard to purchase without a high ranking corporate or government Ally.

Wafer Jack (TL 12): A wafer jack is a computer system implanted into the base of the skull containing a physical data socket and a processor running an interface program. A character with a wafer

jack can use Expert programs for tasks relying on Intelligence or Education only. The main benefit of the jack is it is much smaller and more discrete than a hand computer and the user can access the Expert program by thought alone. A wafer jack has Computer/3 for Expert programs only and is always running Intelligent Interface. Cr. 10,000

Assisted Ambulation Augmentation (TL 13): By adding tiny stimulatory conduits in the brain and certain muscles and tendons, a person's body can be 'programmed' to function more efficiently and for longer. Using the electricity generated from an internal battery system which recharges itself through the users diet, they can function at peak physical capability for hours longer than normal. Depending on the TL of the augmentation, the character can stay active for longer periods of time, requiring less sleep daily.

TL 13	4 hours of sleep; thrice normal dietary need	Availability 9+	Cr. 100,000
TL 14	2 hours of sleep; twice normal dietary need	Availability 9+	Cr. 300,000
TL 15	1 hour of sleep; half-again normal dietary need	Availability 10+	Cr. 500,000

Bio-Fusion Power Port (TL 13): This cybernetic augment is a small caloric generator built into the rib cage of the recipient. So long as the character eats 15,000 calories daily, the power port will have enough energy stored in it to serve as a power source for an energy pistol. The power port can support 20 shots daily, at which point it must be refuelled through the appropriate eating of high-calorie foods. If excess calories are not eaten and the pistol not used then the number of shots supported decreases by four per day without the required calorie intake. Cr. 10,000.

Combat Arm, Advanced (TL 13): The finest in combat limb augmentations, this slimmer arm is made almost completely from non-ferrous alloys, advanced plastics and super-conductive circuits. The arm is considered to have an Armour rating of 14, a Strength of 18 (+4 DM modifier) and can be fitted with any Unarmed close combat weapon or pistol at 10% higher than the weapon's normal cost. Any pistol integrated in the arm will have an external port for modified ammunition magazines or power pack cables. Cr. 75,000.

Enhanced Mobility, Advanced (TL 13): This augment replaces the recipients legs and is made from superior materials designed to maximise efficiency and stability. This augment adds six metres to the distance the recipient moves with a Minor action and all Skill Tests based on balance or ambulatory reflexes are made with a +3 DM. The basic cost assumes two legs are being enhanced, where there are more than two legs modify the amount accordingly. Cr. 25,000.

Enhanced Vision (TL 13): A character can be implanted with cybernetic eyes giving him the abilities of a set of binoculars and IR/Light Intensifier goggles at the cost of Cr. 25,000.

Mechanostatic Scanner (TL 13): One of the character's ears has been augmented with a manually activated device similar to a communications scanner. When activated, any cybernetically augmented individuals within 20 metres will give off a traceable buzz audible to the character. Although this does not help in any other way, it can help the character be aware of augmented threats nearby his location. Costs Cr. 10,000 with an Availability of 9+.

Muscular Bridging (TL 13): Through surgery and a long and painful recovery process, this augment adds thousands of microscopic protein springs to the fibres of the recipient's muscular system. Making every muscle stronger and more flexible, this bionic augment increases the recipient's Strength and Dexterity by +1 each and increases Movement by 3 metres. Cr. 250,000

Neural Link (TL 13): A neural link is a more complex form of neural comm. In addition to providing the capabilities of a neural comm, it also allows the computer system access to the character's nervous system, allowing him to use a wafer jack or computer system containing a Kinetic Interface to give him physical skills. A character must connect his neural link to a computer system or wafer jack containing the Expert Software and the Kinetic Interface to use the skill. Costs Cr. 30,000.

Neurojack(TL 13):A combination of wafer jack and neural link, a neurojack can be used with Expert programs involving physical characteristics. This advanced wafer jack runs Kinetic Interface. Cr. 40,000.

Nerve-plug Response Rig (TL 13): Similar to the type of connection used in the neural link augment, this cybernetic suite consists of six ports implanted down the spine of the user. These ports attach to specially-designed slave-pins added to any suit of powered armour or battle dress. Adding the slave-pin rigs to the armour costs 50% of the armour's cost. When the slave-pins are plugged into the ports on the character (when they don the armour), it becomes attuned to his natural nervous reactions and movements. Essentially, the user becomes his armour. This grants the user a +2 DM bonus on all Dexterity based tests and also increases the character's Initiative score by +2 while in his armour. Cr. 225,000.

All-Temperature Epidermal Symbiote (TL 14): This bionic augment is a lifeform related to both viruses and bacteria and is injected into the recipient's flesh. Sweating is the body's temperature regulation system but it normally has its limitations. By adding this augment, the recipient produces several varying levels of chemical sweat both cooling down and heating up the body according to what is required at the time to remain at perfect body temperature. This augment means the recipient does not feel the effects of cold or heat in a variance from -30 to 50 degrees Celsius (it is totally ineffective in temperatures outside of this range). It also reduces the amount of liquid consumption required per day by 20%. Cr. 2,500.

Null Skull (TL 16): A very dangerous and expensive process to undergo, the recipient has the majority of the bone tissue in his skull replaced with psionic dampening metals. The recipient will reduce his Psi Characteristic to 0 but inflicts a -6 DM penalty upon any psionic skills attempted directly upon him. When installed a Formidable Medic skill check is required. Failure indicates the recipient takes damage to his Endurance equal to 2d6 – the Medic skill of the surgeon performing the procedure. Cr. 1,000,000.

Psi-Taps (TL 16): These advanced cybernetic augments look like small crystalline windows on either side of the recipient's face, just above the temple. A portion of the skull is replaced with extremely durable psi-active crystal stimulating the psionic portions of the brain. This augment adds +2 to the recipient's Psi Characteristic, raising it to a maximum of 10 (there is only so much the crystals can do). A character may have multiple pairs of psi-taps if he can afford them, making a circle of crystal augments around their skull. Cr. 750,000 per pair.

Full Body Transplant (TL 18): This 'augment' is not the same as any other, as it does not add a new item or extension to the person involved – it places their mental consciousness into a completely synthetic body. Made up of synthetic organs, flesh, bone and such wrapped around a very complex artificial 'brain', the new body is not alive. It is an extremely advanced body with the mental (Edu, Int and Soc) Characteristics of the character being implanted but has staggering physical statistics (Str 14, Dex 12, End 15). The body physically looks however the recipient desires it to but exact personal duplicates of oneself are most common. The new body is fuelled by adding bio-mass through 'eating', requiring 10,000 calories a day to stay at top efficiency. Each day the body does not meet this requirement his physical Characteristics will drop by one point each until it refuels. Otherwise the body does not need to breathe or sleep. It self-repairs through nano-scientific chemical applications, 'healing' at the normal living being rate and does not age.

It can cost upwards of ten billion credits in materials to have a fully synthetic body prepared for a transplant, making it beyond the resources of all but the most fabulously wealthy.

Options

There are several minor adjustments which can be made to most augments:

Ruggedized (TL 8): All of the circuitry and electronic components in the augment have been shielded against outside energies. This makes the augment immune to energy-based weaponry targeting augments specifically or which add adverse effects based on the presence of cybernetic augments. They also make the augments immune to the effects of EMP producing weapons. Cost is 15% of the cost of the augment.

Detachable (TL 9): Only available to external cybernetic augments (limbs, eyes and so on), this option allows the user to disconnect the augment using a specialised socket. This can be for storage, disguises or perhaps multiple different augments to fit into the same socket. The disconnection process is a Significant action, as is reconnecting an augment. While disconnected the augment is nothing more than a piece of gear and has no connection to the character at all. This option costs 25% of the cost of the augment being made detachable and a flat fee of 5,000 credits to install the proper connection/disconnection sockets into the recipient.

Natural-looking (TL 10): Adding a layer of synthetic skin and hair over a cybernetic augment can help make it seem more lifelike and organic to a passing glance. This augment option helps the augment blend in with the rest of the person, if possible, granting a +2 DM bonus to Deception skill checks to hide the nature of an augment. This option costs 25% of the augment's original cost. A TL 14 version is available, increasing the bonus to +4 DM and adding 75% of the augment's cost.

Invisitech (TL 12): The augment is completely made from materials which will not turn up on a scanner, sensor or mechanostatic listener. Other than a medical examination or direct visual contact with the augment, there is no electronic way to sense the presence of the augment. The TL 12 version costs 100% of what the augment costs but there is also a TL 16 version costing 200% of the original price and also fools psionic scanning such as Clairvoyance.

Self-Repairing (TL 14): The augment comes standard with a self-repair mechanism; whether using nanites, protein coating or some other method. Instead of requiring special attention by a cyberdoc, geneticist or bionicist, the augment heals like any other normal part of the body when damaged. This option costs 25% of the normal augment cost.

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Supplement 4: Central Supply Catalogue

Once your ship is fully kitted out, it is time to bring your character up to spec. The Central Supply Catalogue advertises all manner of unique items that no self-respecting Traveller should be without. Whether you are looking for a new set of wheels, a more powerful gun, sophisticated bugging equipment or the finest in evening wear, this book has it all. Neatly divided into easy to find sections, the Central Supply Catalogue is suitable for any Traveller setting, including the Babylon 5 and Original Traveller Universe.



**MONGOOSE
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US \$39.95

MGP3819

ISBN 978-1-90508-43-2



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