

TRAVELLER

FIELD CATALOGUE



SCIENCE FICTION ADVENTURE IN THE FAR FUTURE

TRAVELLER

FIELD CATALOGUE

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CLASSIC TRAVELLER

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CONTENTS

INTRODUCTION	2
SOLDIER LOADOUTS	4
WEAPON TRAITS	6
CONCEPTS AND SPECIAL CIRCUMSTANCES	9
PERSONAL WEAPON DESIGN	27
PERSONAL AND LIGHT SUPPORT WEAPONRY	65
PERSONAL EQUIPMENT	127
SUPPORT WEAPONRY	141
SUPPORT EQUIPMENT	147
HEAVY WEAPONRY	157
HEAVY EQUIPMENT	168
VEHICLES	175
STARSHIPS	194

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T R A V E L L E R INTRODUCTION

Personnel are the most important asset a mercenary unit can field but hardware also plays its part. As a general rule the law of diminishing returns applies to most types of equipment; any rifle is vastly better than no rifle but an improved rifle only offers a relatively small improvement on the basic model. Still, an advantage is an advantage. Smart mercenaries train and formulate plans to maximise the advantages they possess and minimise those of the opposition. An accurate appraisal of the mercenaries' own capabilities and those of the enemy can be the foundation of a plan that turns a potentially tough fight into a walkover.

The rules presented in this book can be used in standard *Traveller* campaigns, if this seems desirable. It is not only mercenaries who may have to quickly locate the source of a shot, or who may want to strike by surprise against a well-guarded target. All rules can be implemented or disregarded at the Referee's discretion; much of the time the level of detail presented in these rules is not really necessary. However, in military campaigns the slightest advantage can be highly significant.

Most additional rules cover specific circumstances and are self-contained; if the situation does not occur the rules for it need not be recalled. However, there are two slight conceptual changes within the weapon design rules: Quickdraw and Penetration. Quickdraw refers to any situation in which getting a round on target a split second before an opponent is important. This could be resolved with the normal initiative rules but sometimes more detail is required. Why would anyone use a pistol when more potent weapons are available? In a mercenary campaign the ability to get that first shot into the target before their weapon comes to bear, or they can reach the detonator, can be all-important and some weapons have an advantage in these situations. Combined with the Knockdown rule, a sharp-shooting Traveller has a chance to stop an enemy in their tracks and reverse a potentially lethal situation.

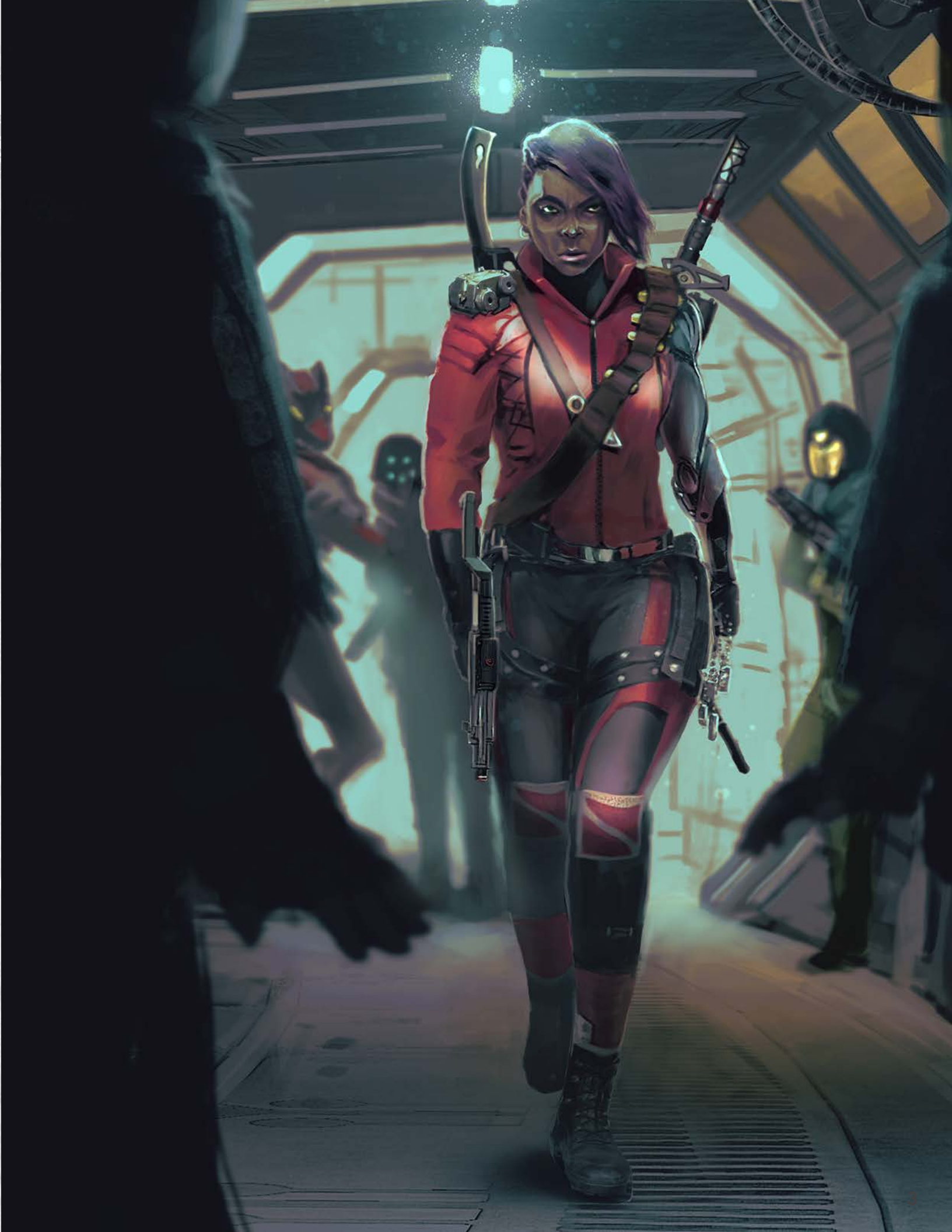
The amended Penetration rules are in some ways the opposite side of that coin. The Travellers' point soldier likes to keep a short shotgun handy for close encounters and can get it on target faster than an enemy soldier who brings a rifle to bear... but the rifle will punch through body armour. Shotguns are excellent for a one-shot-stop on lightly protected targets but cannot penetrate even

modest levels of armour. If you are the sort of Traveller or Referee who cares about such distinctions, the rules in this book are the tools you need. Even if you are not, there is a ton of must-have (and some so-not-want) gear in the later chapters.

Design worksheets are presented for most weapons. This makes it easy to recalculate a weapon's characteristics if a Traveller wants to modify it or if a different type of ammunition is in use. The same basic principle applies to all weapon designs – the receiver and its features will dictate what furniture, barrel and accessories can be used, and what their cost and weight will be. In many cases a specific model and manufacturer are described. There are usually copies, licensed versions and cheap knock-offs of such weapons available. At the Referee's discretion a cheaper copy can be found but it will usually be inferior. The Low Quality trait allows the Referee to assign disadvantages to such weapons.

The additional rules in this book are all optional, including weapon characteristics such as low penetration or incendiary effects. The rules are intended to give those who want more detail additional factors to juggle – do you want a more powerful weapon or one you can get on target quicker? – but for those who do not want this detail it is entirely possible to use the values found only in the *Traveller Core Rulebook*. Some of the differences between weapons are lost if low penetration, speed on target and so forth are ignored but the decision is up to the Referee. Even ignoring these new factors, the weapon design system still imposes changes in range and sometimes damage output.

The introduction of a Recoil score (see page 32) to conventional firearms has implications for some Travellers. A 9mm submachinegun with Auto 3 has Recoil 2, which means a Traveller with Gun Combat 2 or better can fully control it under autofire. Less well-trained Travellers will suffer a penalty to attack rolls, which is not unrealistic – it is hard to shoot accurately with an automatic weapon. Low-recoil weapons are best suited to poorly trained personnel and those who insist on carrying large-calibre handguns converted to fully-automatic fire may be a danger to themselves and others. This imposes more choices on Travellers – controllability or stopping power? Penetration or knockdown? There are no simple answers and that is the way it should be.



C H A P T E R - O N E

SOLDIER LOADOUTS

The *Traveller Core Rulebook* states that Travellers be allowed to carry a 'reasonable' load without tracking it. Unfortunately, many Travellers have a rather curious idea of what is reasonable. Three different rifles, a flamethrower, an anti-aircraft missile launcher, six handguns and dozens of magazines for each weapon is most definitely not reasonable.

If a quick rule of thumb is required, it can be assumed that a soldier can fight effectively wearing body armour and carrying a single long gun, a sidearm, one or two grenades and a few tools such as wire cutters, plus no more than six spare magazines for the main weapon. Additional equipment can be carried in a pack, and shed once combat starts, but there is a limit to how much can be carried without becoming excessively tired. If the Travellers want to push the limits of what they can carry and still move or fight, stricter rules are necessary. These are based on page 92 of the *Traveller Core Rulebook*, modified for the mercenaries' circumstances.

Note that powered armour does not contribute to encumbrance when powered up and that the weight of worn armour is distributed so as to reduce its effective weight by 75%.

Revised Encumbrance

These rules are intended to supersede those presented in the *Traveller Core Rulebook*, making the assignation of Banes the sole preserve of the Referee.

Combat Light: All levels in Athletics (strength and endurance) plus STR + END

Combat light represents the maximum load a Traveller can carry and still act without penalty. The load must still be carried in a plausible manner. For a fit and properly trained mercenary, a combat light loadout will typically be around 16–18kg of equipment.

Combat Load: 2x (all levels in Athletics (strength and endurance) plus STR + END)

A soldier's combat load is up to twice their 'combat light' load, so around 32–36kg for a fit and well-trained soldier. At this level all physical actions that require significant movement are one difficulty level harder. A soldier doing something that requires only slight movement, such as shooting from cover, does not suffer this penalty but as a rule of thumb anything requiring more than a step or turn in place qualifies as 'significant movement'. A soldier carrying combat load is considered to be performing heavy labour as per page 76 of the *Traveller Core Rulebook*.

Field Load: 3x (all levels in Athletics (strength and endurance) plus STR + END)

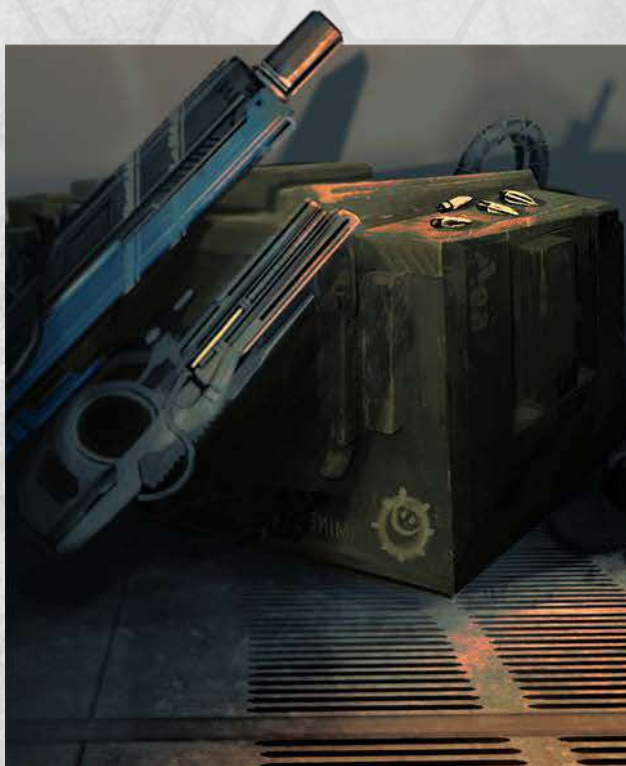
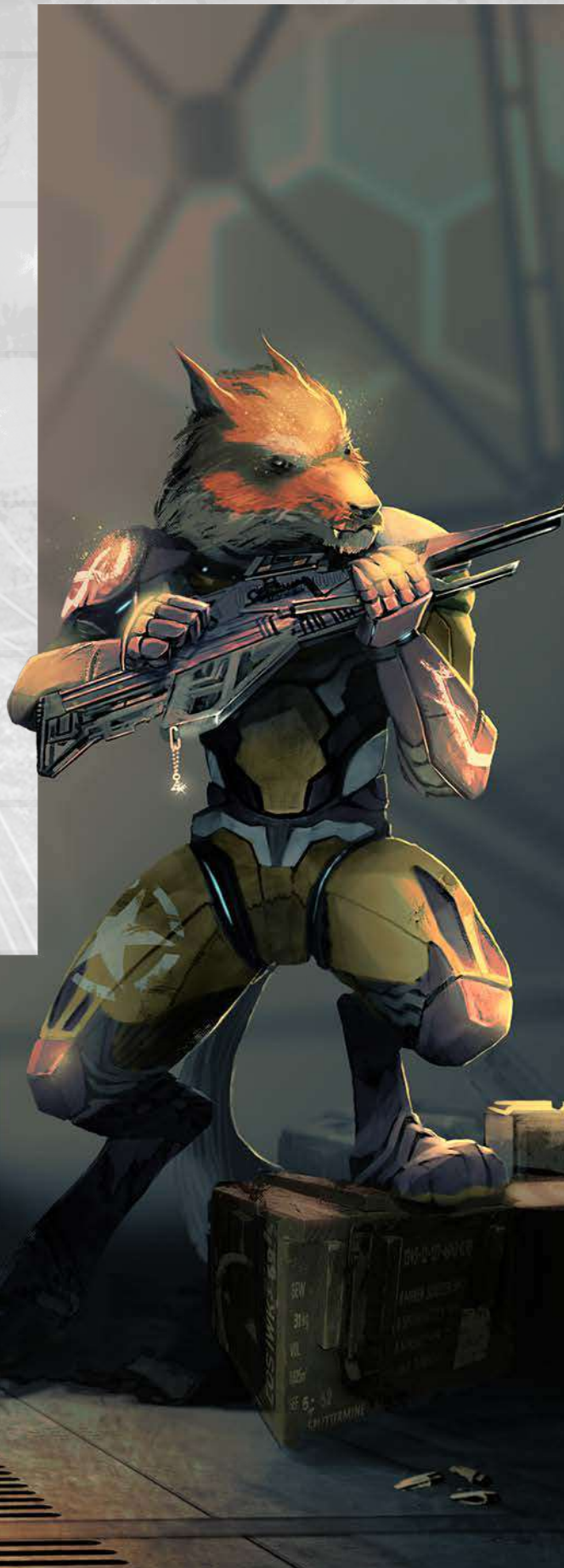
Soldiers are often overburdened with equipment they might or might not actually need. In addition to combat equipment, body armour and necessary personal kit, the soldier will usually also be carrying additional food and water, some kind of field shelter, and ammunition for support weapons or electronic equipment. Much of this additional equipment will be in or attached to a pack that can be quickly ditched in a fight, enabling the soldier to move down from field load to combat load or even combat light. Of course, this equipment might be lost if the unit is pushed back and cannot retrieve its packs. Field load is up to three times the soldier's combat light load. At this level all physical tasks are considered one difficulty level harder whether they require significant movement or not. For a typical fit and well trained soldier, field load is a maximum of 48–54kg.

Overburdened: Beyond 3x (all levels in Athletics (strength and endurance) plus STR + END)

It is physically possible to carry more than a standard field load and indeed some militaries have fitness requirements based on carrying a very large load for a certain distance. However, soldier performance is greatly degraded when lurching along under a gigantic pack. In addition to the penalty mentioned for field load the soldier suffers DM-1 on all tasks (of any kind) for every amount of weight equal to their STR in kilograms, or fraction thereof, carried above maximum field load.

For example, a mercenary has STR and END of 8, and one skill level in Athletics. Their combat light load is 17kg, combat load is 34kg and maximum field load is 51kg. If this soldier is carrying 50kg all tasks are one difficulty level harder and they are considered to be carrying out heavy labour for the purposes of fatigue. If carrying 52–59kg they also suffer DM-1 on all checks. At 60kg this increases to DM-2, and continues to increase until the soldier is no longer capable of moving or even lifting their pack.

The Referee must also keep in mind the bulk of some items. A Traveller might figure out they can carry 80 assault rifle magazines and remain within their field load but it is highly unlikely they would be physically able to carry these objects unless their standard-issue equipment includes a wheelbarrow.



WEAPON TRAITS

This book requires only the *Traveller Core Rulebook* to use. A number of weapon traits are described in that book and apply unchanged unless otherwise noted. In addition, some new weapon traits are introduced in the *Field Catalogue*, as detailed below. Other traits can be found in the *Central Supply Catalogue* if it is in use and apply to the weapons found there. In some cases these may be similar to traits described in this book. At the Referee's discretion similar traits can be swapped, such as Fire and Burn or Hazardous and Dangerous.

Burn X: A Burn weapon delivers half its initial damage for a number of rounds equal to its Burn score.

Corrosion-Resistant (+X): An item or device that has Corrosion-Resistant (+X) is degraded by corrosion to a lesser degree.

Corrosive: A Corrosive weapon does damage over time and can destroy armour. See page 24 for details.

Emissions Signature (level): The Emissions Signature trait is possessed by all weapons with a power source or which generate heat, since these weapons show up readily on sensors. Examples include, but are not limited to, lasers, gauss weapons, flame or cryogenic weapons, plus plasma and fusion guns. When sensors are being used to detect and locate a weapon its Emissions Signature DM is applied. If a weapon does not have the Emissions Signature trait it will only be

detected by specialist devices using the same cues as a human or other living being would. For example, acoustic location devices use the sound of a weapon to locate it, just like a person turning to look in the direction the sound seemed to be coming from. Such devices use the weapon's Physical Signature trait rather than Emissions Signature.

Hazardous -X: Some weapons use hazardous materials such as generated plasma or highly flammable gels. This does not necessarily make them dangerous to use but does increase the severity of a malfunction. A well-made and properly cared-for weapon should never suffer a significant malfunction in the field and if this is the case the user need not worry about the nuclear fusion reaction going on in the weapon's powerpack. If the weapon does suffer a malfunction or is penetrated by enemy fire, use the Malfunction table on page 8 to determine the severity of the problem. The weapon's Hazardous score is applied as a negative DM on this table.

Most weapons pose some hazard if damaged or mishandled but typical propellants and batteries are considered to be a zero-DM hazard and do not give the weapon the Hazardous trait.

The effects of an incident with a Hazardous weapon can vary. A truly bad conventional firearm might have a Hazardous DM greater than -3 but a breech explosion is less serious than a grenade going off in its launcher.

Weapon Hazard Levels

Hazard DM	Example
-1	Poorly made conventional firearms prone to stoppages and ammunition mishaps.
-2	Stable explosives such as typical launched grenades, high-discharge energy systems such as laser or gauss weapon powerpacks.
-3	Very poor conventional firearms likely to injure the user at some point.
-4	Possibly unstable explosives, such as ageing dynamite or high-yield explosives.
-6	Flammable materials such as those used in a flamethrower or cryogenic fluids.
-8	Well-protected plasma generation chamber, such as used on a well-made plasma gun.
-10	Well-protected plasma fusion chamber, such as used on a well-made fusion gun or poorly engineered plasma generation.
-12	Poorly engineered plasma fusion chamber, such as those found on improvised fusion weapons.

Inaccurate -X: A weapon with Inaccurate suffers a negative DM to hit when shooting at a target more than 10m distant. This is normally -1 or -2 but could be more in the case of a very ill-made weapon. Smoothbores almost all suffer from Inaccurate, although it is not usually much of a problem at the range where a shotgun might be used.

Incendiary X: An Incendiary weapon will set materials alight on a successful check determined by the nature of the materials. A sufficiently hot incendiary can even ignite materials that would not normally be considered flammable, such as metals. The weapon's Incendiary score is used as a positive modifier to this check; if not specified this value is +0.

Flammability

Material Type	Example	Difficulty
Highly Flammable	Liquid fuel	Simple (2+)
Flammable	Straw, some clothing	Routine (6+)
Non-Flammable	Skin, military uniform	Average (8+)
Fire Resistant	Vacc suit	Difficult (10+)
Highly Fire Resistant	Metals	Formidable (14+)

Lo-Pen X: Some weapons perform very poorly against armour or fail to penetrate hard surfaces. This can be desirable, such as when ammunition is intended for use on a small indoor firing range or inside spacecraft. A low-penetration round is unlikely to punch a hole in a cabling conduit and wreck the ship's control systems. Weapons with Lo-Pen have a score, typically 2 or 3. This is a multiple to be applied to the target's armour, if any. Thus a Lo-Pen (3) weapon striking a flak jacket with Protection +5 would treat it as Protection +15; penetration is highly unlikely. Low-velocity firearms and pellet-firing weapons typically have this trait.

Physical Signature (level): The Physical Signature of a weapon is based on the amount of noise, flash and disturbance of small objects caused by its propulsion mechanism or passage of its beam, bolt or projectile. All firearms and energy weapons have at least some Physical Signature and in many cases this is about the same as that of a typical handgun or rifle. In this case it is not really necessary to note down the signature of the weapon as attempts to detect and locate the user are as normal.

Ramshackle -X: Ramshackle weapons are typically thrown together out of whatever parts were available, or are poorly engineered. Examples include crude zip guns made in backstreet workshops, home-made flamethrowers and improvised fusion guns. Ramshackle scores usually range from -1 to -4 depending on the severity of the weapon's deficiencies but can be even more. Typically, attempts to repair or build a weapon at lower than its Tech Level will impose a Ramshackle trait equal to the difference in Tech Levels. Poor manufacture or parts, long periods without maintenance and bad design can all impose a Ramshackle trait on a weapon. The DM is applied to attack rolls and the results of weapon malfunctions. At the Referee's discretion it can be reduced by the Effect of a Mechanics check made when fixing a damaged weapon in the field. Note that being Ramshackle does not necessarily make a weapon Unreliable. A cobbled-together weapon can be safe and reliable, just not very good.

For example, a party of Travellers finds a TL14 fusion gun that someone has abandoned. With no tools available, the team's mechanical genius decides to have a go at fixing it up. Using nothing more than her boot and a nearby rock, she performs a mechanical miracle with Effect +7. The fusion gun is restored to useable condition... sort of. The Referee rules that rocks and vigorous stomping of components constitutes TLO repair work, so the weapon would have an incredible Ramshackle (-14) score. This is partially offset by particularly skilled bashing with a rock, so it ends up with Ramshackle (-7). This applies to all attack rolls, making the weapon useful only for spraying the countryside with fusing plasma. If the makeshift fusion gun is damaged and suffers a Mishap, this DM-7 is also applied to the results... which will be rather bad for everyone nearby.

Slow Loader X: Some weapons are just plain fiddly to load. This includes advanced but badly designed weapons whose magazine is difficult to seat properly as well as those that require multiple actions to prepare them to fire. A black powder rifle, for example, requires a powder charge to be poured down the barrel and rammed, then the projectile to be rammed home, then possibly a wad to be also rammed down the barrel. The lock is then prepared, either with more powder or a separate percussion cap, before the weapon can be cocked and readied. This is going to take much longer than the usual one minor action to reload a weapon.

Slow Loader is followed by a score that determines how many minor actions are required to load the weapon. For a fiddly magazine-fed submachinegun the score might be 2–4, whereas a black powder rifle could have Slow Loader (10) or more. Taking three minor actions per combat round, this could mean the weapon is out of commission for three or more rounds between shots.

A Traveller can elect to make an Average (8+) Gun Combat check to reduce the loading time. The Effect of this check is deducted from the Slow Loader score, to a minimum of one minor action. A skilled user might be able to slap that awkward magazine in first time or change a belt faster than normal but a very slow weapon will still take time to load.

Spread X: A Spread weapon fires multiple projectiles either at once or in very rapid succession. Shotguns are the most common examples but there are weapons that fire mini-grenades that burst into a hail of small submunitions in flight. A very fast-firing automatic weapon might also possess the Spread trait when used to spray a target. A Spread weapon has an associated score, usually in the range of 1–4. When the weapon is used within its base range, the firer may add the Spread value to all attack rolls.

Unreliable X: An Unreliable weapon is prone to malfunctions and breakdowns. This is typically seen with primitive weaponry such as black powder muskets

but could be imposed by poor-quality ammunition. A weapon's degree of Unreliable is indicated by a score in the range 1–5. When this weapon is used, an additional 1D of a different colour is thrown along with the usual 2D check. If this dice comes up equal to or less than the unreliability value for the weapon it suffers a malfunction. This might be a simple misfire but could be a full jam or even a breech explosion.

If a weapon malfunction occurs, roll 2D on the Malfunction table. The weapon's user receives a positive DM equal to their relevant combat skill. Negative DMs also apply.

Weapon Power: DM-1 for every 1D of damage done by the weapon.

Hazardous Weapon: Apply the weapon's Hazardous score as a negative DM.

Combining Spread and Inaccurate

Some weapons have both Spread and Inaccurate, such as shotguns. Inaccurate does not apply within 10m so at this range the user benefits from the Spread value. Between 10m and the weapon's base range, both apply. Thus a shotgun with Spread (2) and Inaccurate (-1) affords the user a net DM+1 to attack rolls.

Malfunction

2D+DMs	Result
0-	Breech explosion or similar disaster. The weapon is ruined and the user receives its normal damage.
1–3	A critical component breaks. The weapon is out of action until repaired in a workshop.
4–6	A component breaks or ammunition jams in the mechanism. The weapon is out of action but can be fixed in a few minutes without the need for a workshop.
7–9	An ammunition misfeed or similar minor technical issue occurs. One significant action is required to clear it or ready the weapon.
10+	A minor technical fault wastes this shot but does not put the weapon out of commission. For example, a grenade launches but fails to detonate, or a bit of dirt on the end of the emitter tunnel blocks a laser pulse but is vapourised by it clearing the weapon to shoot normally.

C H A P T E R - T H R E E

CONCEPTS AND SPECIAL CIRCUMSTANCES

Sometimes a Traveller may be in a situation where a specific capability – such as locating the origin of a shot or getting a weapon on target – can mean the difference between life and death. The procedures presented here are modified by some weapon features and Traveller skills. They require the addition of new concepts to the *Traveller* rules, although some of the concepts outlined here are already implicit.

RANGE CONDITIONS

The precise distance from combatant to target is sometimes very important, such as when calculating a firing solution for artillery. However, most of the time the general range conditions are more important as they impose tactical limitations. There are five 'range conditions' that can apply to a military force or some of its members.

Close Quarters (sometimes called Close Assault) is a situation where hand-to-hand combat may occur. The most effective weapons tend to be handguns, assault weapons, shotguns, light assault rifles and melee weapons. Like all range conditions, Close Quarters is loosely defined; in this case it is a situation where at least some combatants are capable of rushing into their opponents to attack with bayonets or similar personal weaponry. Personnel who are engaged at close quarters are unlikely to be able to keep track of the 'big picture' – they are too busy trying to stay alive! As a result DM-4 applies on checks other than those pertaining to the immediate close-combat situation. This DM may also be applied to almost any combat or non-combat task a Traveller is trying to carry out – directing the fire of an orbital battery, giving orders to another unit or even just responding to a radio message becomes a lot more difficult when engaged at Close Quarters.

Combat range includes Close Quarters and extends out to a loosely-defined point beyond which careful aimed fire or area attacks with large amounts of ammunition are the only realistic way to harm the enemy. Most combat seen by typical Travellers takes place under these range conditions, and is characterised by snapshots taken at

fleeting targets. The outer limit of Combat range can be taken as around 50m. Combat at this range makes it difficult to keep track of the big picture, imposing DM-2 on checks other than those pertaining to the immediate situation. Although less chaotic than a close-assault situation, a force engaged at Combat range will be distracted from anything but the situation at hand. This of course assumes the enemy is active. If they are hiding or have been suppressed to the point where they are no longer making much effort to attack, the unit is considered not to be engaged in Combat and can go about its business as normal.

Battlefield range conditions extend to the point where direct-fire weapons are highly unlikely to be effective. This is typically 3–5 kilometres, but can vary according to the local situation. Essentially, if an enemy force is close enough to be engaged by the main armament of a tank operating at ground or low level, battlefield conditions exist. This has various tactical implications, mainly a need to protect non-combat assets such as headquarters and logistics formations from direct attack. Personnel are in danger from long-range harassing fire and snipers, or support weapons such as mortars, but are not closely engaged with the enemy. Combat at Battlefield range tends to be impersonal for the most part, with vehicles or area targets engaged rather than specific personnel. Snipers and some precision weapons can target individuals but survival is for the most part a matter of good habits regarding positioning and use of cover, rather than eliminating specific threats.

Standoff range conditions exist beyond the immediate battlefield and extend out to the maximum effective range of locally available weapons. On a TL4 battlefield this might be just a few kilometres beyond the immediate combat area and few commonly available standoff weapons are useful beyond 50–100km. A force at Standoff range is not in danger from direct-fire weapons such as lasers, tank guns or firearms but might be targeted by missiles, rockets, artillery shells and the like. Standoff warfare is handled differently to personal combat.

Theatre range conditions exist when a unit is out of reach of all but the longest-range weapons. Infiltration is always possible so security cannot be completely relaxed but theatre-grade weaponry is geared to large area targets or vehicles and starships. Defence against such weapons is on a similar scale. Theatre-level combat is a matter of long-range air strikes, missile bombardment and orbital laser fire. It is beyond the scope of most Traveller-owned mercenary units, although they may become involved – perhaps leading a commando mission to take out a missile launch site or defending a communications centre against infiltrators.

VACUUM AND LOW-GRAVITY CONDITIONS

These rules generally assume the Travellers are operating in some kind of atmosphere and that there is a modest gravitational field. Vacuum and low-gravity conditions cause additional problems for personnel engaged in combat – and for their equipment. Most items without moving parts function well enough in a vacuum but conventional lubricants tend to evaporate off, potentially causing a weapon to malfunction. Any weapon not adapted for vacuum, other than energy weapons, temporarily gains the Unreliable (1) trait.

Low gravity increases the distance projectiles will travel but not the ability of personnel to aim. Bullets do not 'drop' as a shooter experienced in higher gravity would expect. There is no effect out to 100 metres, after which DM-2 applies to shots made out to 1,000 metres. DM-4 applies to shots made out to 10 kilometres and DM-6 to shots beyond this. This DM is reduced by one for every level of the Vacc Suit skill the shooter has, reflecting an ability to predict the effects of low or zero gravity and does not apply to lasers or similar energy weapons.

Extreme range can be considered doubled in minimal or zero gravity. Weapons that rely on firing in a ballistic arc become difficult to aim, although incredible 'trick shots' are possible to those with sufficient mathematical ability to calculate trajectory. Likewise, trace atmosphere or vacuum does not slow projectiles. This does not greatly affect the ability of the average mercenary to point-and-shoot but extreme range is doubled – and this can be combined with the effects of low gravity. Thus it is possible to engage targets across very great distances, although the time taken for a projectile to get there and the difference in conditions from that the shooter may be used to, makes hitting a person with a rifle from 5 kilometres rather difficult no matter how good the sighting system.

Indirect Fire

Indirect fire in this context refers to any projectile that does not follow a straight path to the target and will typically be carried out with grenade launchers and light artillery weapons. Arguably a hand grenade 'pinballed' off two walls to get it around a corner is an example of indirect fire, although more commonly one will be lobbed over an enemy's cover or into their foxhole. Energy weapons cannot conduct indirect fire and it cannot be conducted without a physical mechanism. Thus would normally be gravity but an extreme magnetic field might be a possibility or the aforementioned walls in a zero-g environment.

The following indirect fire rule is based on the Artillery trait found on P7 of *Central Supply Catalogue*. It should be used for indirect attacks at Combat ranges or less. When firing at Battlefield or greater distances the bombardment and standoff rules, below, should be used.

When using indirect fire to attack a target that cannot be directly observed, DM-2 applies to the attempt to hit. In addition, all indirect attacks – even if the target is visible to sensors or a handoff targeting point is available – are imprecise. The attack will land 1D metres from the target point, plus 1D for every full 100 metres the weapon must travel. Each point of negative Effect adds one metre to the distance; each point of positive Effect reduces it by one metre.

Indirect fire is for the most part useful only with area-effect weapons such as grenades. However, if the attack roll is good enough to indicate zero metres then the target has received a direct hit. Area-effect weapons will do their normal damage and impact damage may be added at the Referee's discretion. For most projectiles likely to be used in this manner impact damage will be 1D for those that have bounced off something and 2D for direct impact.

This rule can be used to resolve unusual indirect-fire situations. For example, a Traveller is in a tricky hostage situation and cannot get a clean shot at an enemy. Their solution is to yell 'grenade' and throw an actual grenade but without pulling the pin, bouncing it off a wall to strike the hostage-taker from behind. A particularly good attack roll results in a 0m deviation, so the Referee rules the hostage-taker has been hit for 1D damage.

The Traveller asserts that the hostage-taker will assume the object that beamed them is a live grenade and panic. The Referee allows a Deception check and it is passed. The hostage-taker pushes the hostage onto what they

think is a live grenade, clearing the line for another Traveller to take the shot. Whilst a questionable solution to the situation, this is a valid use of the indirect fire rule.

When an area effect weapon is used for indirect fire, it imposes an Area Fire attack (see page 14) on everyone within its Burst value in metres.

Firing Over Open Sight

Some artillery weapons can engage targets directly in line of sight. This is generally referred to as 'firing over open sights'. High-trajectory weapons such as mortars cannot do this and very heavy weapons may not be able to traverse fast enough or depress far enough to hit targets at close range. Those that can are treated like any other weapon conducting direct fire. Light artillery (guns and howitzers of up to 120mm calibre) suffers no penalty when conducting direct fire. Medium artillery (in the 120-180mm range) suffers DM-2 to hit when firing over open sights. Heavy artillery of over 180mm calibre suffers DM-4.

Light rocket and missile systems are intended for short-range engagements and suffer no penalty. Medium systems, intended for use at Standoff ranges, suffer DM-2 when firing at anything closer than this, and heavy systems such as long-range aerospace defence missiles suffer DM-4 when firing at Standoff range or less. This does not preclude launching a large aerospace missile at an approaching tank, but it does make a direct hit rather unlikely.

Bombardment and Standoff Combat

For the typical Traveller, large weapons such as artillery guns are either an impersonal hazard or will be used in direct-fire mode. Those involved with military operations are more likely to encounter these weapons being used – or use them – in their bombardment role. A bombardment can be abstracted using the rules in *Book 1* but as the focus closes in on the Travellers it may be necessary to resolve an indirect or standoff attack.

Whether an attack is considered bombardment or standoff combat depends on the degree of guidance. Bombardment is almost always carried out with indirect fire weapons and in the context of these rules uses weapons without terminal or direct guidance. The same artillery piece could fire an unguided shell in bombardment mode or deliver a guided shell to the target area at which point it would home in – this would be considered standoff combat.

Standoff attacks, in this context, are made with long-range weapons from a position beyond effective retaliation. Typically this is the province of artillery and missile systems, both of whose projectiles follow an indirect path but a standoff attack can be made by some specialised direct-fire weapons. The latter include meson guns and long-range lasers firing from orbit or similarly high elevation. What differentiates a standoff attack from bombardment is whether there is some form of terminal guidance. In the case of long-range lasers and meson guns the gunner tries for a direct hit at the moment of firing. With missiles and guided shells the weapon is sent to the general target area then either self-guides or is directly controlled from a remote position.



When conducting bombardment the intent is to put payloads into a general area. With very precise weapons this area may be smaller than the warhead's danger radius but more commonly bombardment is something of a lottery. For this reason weapons with a large area of effect are preferred. Putting artillery shells into the general target area requires an Average (8+) Heavy Weapons (artillery) check. This assumes the weapon is firing at less than a quarter of its maximum range. At greater ranges, the difficulty increases, as shown on the Artillery Accuracy table.

Artillery Accuracy

Range	Difficulty
¼ Maximum or less	Average (8+)
½ Maximum or less	Difficult (10+)
¾ Maximum or less	Very Difficult (12+)
¾ to Maximum	Formidable (14+)

Success puts the payload in the general area of the target, sufficiently close to make an Area Fire attack. Failure indicates the warhead arrived sufficiently far away as not to threaten the target, although in the case of some truly enormous weapons there may be other effects. These are discussed in the *Specialists* book. If it is necessary to determine how far away the weapon landed, deviation can be taken as 2D% of the range it was fired from. This is a minimum of 100 metres for weapons fired at 5 kilometres and possibly as much as 6 kilometres for a weapon 50 kilometres away. Direction must be determined randomly.

A 'hit' on the Heavy Weapons check does not mean a direct hit has been scored on the target with indirect fire. Instead it means that the warhead has arrived close enough to the target to have some effect. Most artillery weapons have a radius of effect and deliver damage within that area. Once a hit on the general target area has been determined with artillery, it is necessary to find out how serious it will be.

Roll 2D if a 'hit' is scored. On a straight double-6 the target may have suffered a direct hit and damage is doubled. On 8+, the round comes close enough to do full damage. On a roll of 7-, 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 effect due to some (un)lucky circumstance.

Hits and Near Misses

2D	Effect
12+	Doubled Damage; direct hit!
8+	Normal Damage; close hit (primary radius)
7-	Halved damage; nearby hit (secondary radius)
2	No Damage

Standoff Attacks, Midcourse Guidance and Forward Observers

An unguided weapon is handled as above but if some form of terminal guidance is available the attempt is considered a standoff attack and is far more likely to score a direct hit. The positive Effect of the attack check is added to the 2D check to determine the nature of the hit. In addition, weapons guided by an operator may add the operator's Heavy Weapons (artillery) skill level to the 2D check. Automatically guided weapons use the projectile's own guidance DM and some advanced weapons may use both an operator DM and one from the weapon's own systems.

If a forward observer or some form of midcourse guidance is available, the chances of a good hit are further enhanced. To increase the chance of a first-shot hit a forward observer may make an Electronics (comms) check subject to additional modifiers as if making an attack roll. The Effect of this check is added to (or subtracted from) the weapon's check to reach the general target area, which in turn will improve the chances of a direct hit by increasing the level of success. This process is no different to that on page 7 of the *Central Supply Catalogue*.

A forward observer can use their own Heavy Weapons (artillery) skill to apply corrections to each salvo after the first, including those made with unguided bombardment weapons. To do this, the observer 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 (artillery) check. If successful, the gunners' next shots gain a cumulative DM+1 to hit, 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.

For example, the Travellers have equipped themselves with a mid-tech field artillery piece and some more advanced ammunition for it including guided shells. Two of their number are daringly close to the target acting as forward observers whilst the rest ready the gun. The forward observers set up the shot, getting a mildly disappointing Effect +1 on their Electronics check. Their comrades fire the gun into the general target area, gaining this +1 along with their own DM+2 for a solid Heavy Weapons (artillery) check. The shell will arrive in the target area and gains DM+3 on the 2D check to see if a direct hit has been achieved. This DM is for the forward observers' efforts and that of the crew. In addition, the weapon's own guidance DM+2 is added. A score of 8 on 2D is modified to 13 – more than the 12 needed for a direct hit. The observers are satisfied to see the shell arrive on a good trajectory then adjust it slightly to come down directly on the target. Without the shell's terminal guidance it would have been very close to the target and done normal damage.

SUSTAINED FIRE AND WEAPON OVERHEATING

Conventional firearms and most energy weapons generate a lot of heat when operating and can malfunction if not permitted to cool. In short or intermittent combat there is no real need to keep track of weapon overheating but sometimes it can become very important. Conventional weapons firing single shots or even short bursts will not overheat but one that makes sustained autofire attacks will generate excess heat, which will begin to cause problems.

A weapon making autofire attacks or one that produces a great deal of thermal energy such as a plasma or fusion gun, generates an amount of Heat equal to its damage dice each round, plus its Auto score. It dissipates Heat at a rate determined by its construction during each round it is not fired. If the weapon exceeds its safe Heat level, a malfunction may occur on any occasion it is fired – even a single shot. The malfunction chance is based on the weapon's Heat level before the attack was made.

Every attack made after the safe Heat threshold is crossed may cause a malfunction. Single shots and bursts from conventional firearms do not increase the Heat DM but they do not reduce it either, so it

is possible to keep popping off single rounds from a glowing-hot weapon whilst staying just below the disaster threshold. The chance of a malfunction depends on the weapon's condition. If a malfunction occurs, consult the Malfunction table on page 8.

Changing the barrel on weapons equipped for this is assumed to remove all accumulated heat. Alternatively, the weapon may be permitted to cool. Weapons dissipate heat at a rate depending on their construction and any accessories they may have. Cooling systems can be added as receiver accessories.

Rapid-Fire (RF) and Very Rapid-Fire (VRF) weapons produce a great deal of heat and are generally combined with a cooling system or use multiple barrels to allow heat to dissipate more quickly.

The chance of a malfunction is given in the Weapon Heating Effects table. A straight 2D check will indicate if a problem occurs and the level of DM to be applied on the Malfunction table on page 8. The Traveller receives a positive DM equal to their relevant gun combat skill on this table.

For example, a Traveller in a close-quarters fight makes autofire attacks from a drum-fed assault rifle for 6 consecutive rounds. This generates 3 points of Heat for each attack, because the weapon does 3D damage, and 3 more per round because it is Auto 3. The weapon currently has 36 Heat points. Up to this point the Referee has not implemented the overheating rule because the Traveller was firing intermittently and the weapon had a chance to cool but a malfunction at this critical moment could be significant as well as dramatic and exciting. The Traveller fires again, increasing the weapon's Heat to 39 at the end of the round but the chance of a malfunction is based on the 36 points of Heat at the time the shot was fired. The weapon is past its danger threshold, so the chance if a malfunction is 9+ on a straight 2D roll. One occurs, and a check, with DM-2 for being past the threshold, is made on the Malfunction table. This is subject to an additional DM-3 for the weapon's damage dice and DM+2 for the Traveller's Gun Combat skill, for a total of DM-3. This comes out a 3 – a critical component of the weapon has failed and the weapon needs workshop time. The Referee decides a round has expanded in the breech and jammed the ejection system. The Traveller's attack that round is aborted. She switches to her backup weapon and the situation becomes a bit more desperate.

Weapon Heating Effects

Factor	Heat Per Autofire Attack	Heat Dissipation per Round	Overheating Threshold (12+, no DM)	Danger Threshold (9+, DM -2)	Disaster Threshold (6+, DM -4)
Handgun Receiver	Damage Dice	2	10	15	20
Assault Weapon Receiver	Damage Dice	4	15	30	45
Longarm Receiver	Damage Dice	6	20	40	60
Light Support Weapon Receiver	Damage Dice	8	25	50	75
Support Weapon Receiver	Damage Dice	10	30	60	90
Heavy Barrel	Damage Dice	+2	—	—	—
Multi-Barrel Weapon	Damage Dice	+1 per additional barrel	—	—	—
RF Weapon	Damage Dice x2	—	—	—	—
VRF Weapon	Damage Dice x3	—	—	—	—
Destructive Weapon	Damage Dice x10	—	—	—	—

Using the Overheating Rule

If the Travellers are roleplaying the situation and allowing their weapons to cool to a reasonable degree, this rule need not be brought into play. It is not intended to deprive Travellers of their firepower after a couple of shots but should be applied to significant situations. For example, if the Travellers are using a damaged plasma cannon to fend off a horde of enemies they will have to consider whether to allow the weapon to cool or to keep firing and hope for the best. As with all rules in *Mercenary*, the sustained fire and overheating rule is intended to give the Travellers problems to solve or opportunities whilst the enemy's heavy weapon is out of action. Likewise, if the Travellers decide to tool up with the most extreme rapid-fire weaponry money can buy, their weapons should come with some disadvantages. In this case, a tendency to stop working or even explode is a reasonable trade-off for having more firepower than a TL7 infantry battalion.

AREA FIRE

Area fire is typically conducted by artillery and automatic weapons, although in different ways. Whether spraying an area with bullets or shell fragments, what the attacker is doing is creating a situation where anyone in that area will be endangered, without any direct control over who is harmed and who is not. Area fire with automatic weapons is common at Battlefield range and typically conducted with artillery at Standoff range. Lighter artillery weapons such as mortars may be useful at Battlefield range.

When area fire is used, there is a threat to everyone in the target zone. A 2D check is required to avoid coming to harm, at a difficulty level determined by the amount of cover the individual has. For simplicity it is assumed that anyone staying under hard cover is safe but of course they are effectively out of action. Anyone trying to move around, shoot or take other actions requiring exposure to the incoming fire must make the check to avoid harm each round. The intensity of the incoming fire provides a DM to this check.

Avoiding Damage From Area Fire

Activity/Protection Level	Difficulty
No activity, under hard cover.	No check required
Good cover, such as firing from a bunker.	Simple (2+)
Adequate cover, such as firing or observing from a trench.	Easy (4+)
Scanty cover, such as a firing position among some big rocks.	Routine (6+)
In the open but acting defensively, such as dashing between positions of cover or staying down.	Average (8+)
Little or no use of cover, such as moving around in the open or operating an unprotected support weapon.	Difficult (10+)

The check is modified by the intensity of the attack.

Intensity of Area Attacks

Type	Example	DM
Feeble	A scattering of small artillery shells over a wide area at Standoff range or a few automatic weapons at Battlefield range.	+4
Weak	Low-intensity artillery bombardment at Standoff range or a few support weapons (mortars and machineguns perhaps) at Battlefield range.	+2
Typical	A typical artillery attack at Standoff range or a well-supported unit laying down suppressing fire at Battlefield range.	—
Intense	Intense artillery fire or an area swept by Rapid-Fire weapons.	-2
Highly Intense	The most intense artillery strike possible, such as a time-on-target salvo from several batteries or an area swept by VRF weapons.	-4

If the check is passed, the individual suffers no harm, although someone next to them might be shredded. Failure indicates the individual has been hit. This is resolved using the Hits and Near Misses table on page 12. It is possible to be right on the fringe of an attack or to suffer a direct hit from an artillery shell. This process is used for direct-fire weapons as well – someone in the area of effect might take multiple hits. Damage is based upon the weapon in use.

SUPPRESSING FIRE

Suppressing fire uses up a lot of ammunition but can provide tactical advantages. Units with automatic weapons, or a weapon with similar effects such as airbursting grenades, can lay down suppressing fire at Combat range. If large numbers of support weapons are available it is possible to suppress enemy forces over a wide area but more commonly suppressing fire is directed at an enemy position, or somewhere an enemy is suspected of using. It can also be used to deny

an area to the enemy by endangering anyone passing through it. For example, a mercenary unit might lay down suppressing fire on a window suspected of being a sniper's position or across a corridor intersection to prevent enemies from moving through. Anyone entering the suppressed area, trying to move through or out of it or doing anything except staying under cover is subject to an Area Fire attack.

The Referee must decide whether the volume of fire is sufficient to constitute suppressing fire and how intense it is. At Combat ranges, a full magazine from an assault rifle is generally sufficient to deliver Typical suppressing fire on a personnel target for one round. Such a target might be a machinegun nest, doorway or similar sized area. Anyone in the target area, such as the enemy machinegunner and loaders, or a brave enemy trying to rush across the intersection, receives an Area Fire attack and must check to avoid being harmed. A machinegunner firing from a sandbagged position will probably not be wounded since the check is Simple

(2+) but crossing an open corridor intersection whilst someone sprays it with automatic fire requires a Difficult (10+) check. If the attack is successful, it is necessary to determine whether extra or halved damage is applied, as with all area attacks.

The primary purpose of suppressing fire is not to cause harm to the enemy but impede their actions. This might happen due to tactical choices such as the decision to stop firing and hunker down or to abort the planned dash across the intersection to the armoury. Commonly, suppressing fire interferes with what the enemy is doing rather than preventing it entirely. If this is the case, the suppressing unit may make a Tactics (military) check. Gun Combat or Heavy Weapons can be used instead if this is an individual attempt. The Effect of this check is applied as a negative DM on the actions of the target during their next actions in a round.

MANUALLY GUIDED WEAPONS

Most guided weapons are of a fire-and-forget type. That is, once launched they are self-guiding and require no further input from the user. However, some weapons are manually guided. This may require flying the weapon remotely using a joystick or similar control device, or keeping a laser designator on target whilst the weapon is

in flight. Manually guided weapons can be thrown off by causing the operator to lose control, such as by forcing a missile controller to duck under cover or causing a designator spot to slide off the target. This can be achieved by making the operator flinch, moving the target, interposing an object or obscuring it with smoke.

Normally, keeping a designated or controlled weapon on target requires an Average (8+) check using the operator's skill; typically the skill associated with the weapon used but a mercenary with a rifle-mounted designator could use Gun Combat to paint the target. If the check is made and no adverse situation occurs, such as a cloud of smoke obscuring the target, the weapon will automatically hit.

It is possible to perform 'trick shots' with a designator. For example, a concealed launcher might put four missiles into the air at short intervals, causing them to pop up from behind a forest or hill close to the target. A concealed designator operator can then paint the first target, causing all the weapons to go for it. As the first missile strikes home, the designator is moved to the next target. If the missiles can react quickly enough this target will be attacked, then the next if the sequence is followed. A cumulative DM-1 applies to this sort of quick-targeting for every target after the first and as soon as any shot misses the rest of the remaining salvo is lost.



AREA AND POINT DEFENCE

Some weapons are capable of providing defence against missiles, rockets and even artillery shells. Area defence is typically the preserve of missile systems or powerful laser weapons, whilst point defence weaponry is more varied. Examples include small missiles, rapid-fire lasers or cannon, and weapons similar to a large shotgun. As a general rule direct-fire projectiles such as rounds from a tank gun travel too fast to be intercepted in this manner.

An area defence system can attack any suitable target, which also includes grav and air vehicles, 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 that incoming attacks have to go right over them, however this is not usually possible on a battlefield. Some point defence weapons can attack vehicles and personnel in addition to their missile defence role but this makes them unavailable for defensive fire.

Each round an area defence system can attack a number of targets equal to its Area Defence rating. 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' that come through the first defensive layer.

Area and point defences use attack rolls like any other weapons. Those guided by operators may use their skill level as a DM, although engagement times are so short with these weapons that actual aiming and firing is almost always controlled by a dedicated electronic system. The operator's input is limited to direction and target selection, essentially providing tactical indications to the automated systems.

Incoming missiles, rockets and shells are assumed to be destroyed by any hit, though weapons that can attack other targets have damage scores as normal. The difficulty of hitting any given target type is given in the Defence Targets table. Some advanced weapon systems are capable of behaving in a manner designed to evade area and point defence fire, such as following a low, evasive course, using terrain for cover or intermittently varying levels of thrust. This may impose a DM on the ability of a defensive weapon to hit the incoming warhead. If this capability exists for a given weapon it will be noted in its description.

Defence Targets

Target	Difficulty
Artillery Shell	Formidable (14+)
Fast or Small Missile	Very Difficult (12+)
Typical Missile	Difficult (10+)
Personnel or Vehicles	As normal combat

ATTACKING VEHICLES

Direct-fire weapons such as conventional firearms, unguided rocket weapons and lasers can only attack the part of a vehicle facing them. Typically a side and the front or rear will be available as targets, but one will be at an oblique angle that will spread out an energy attack or make a projectile likely to glance off. HEAP and similar munitions need a clean, near-perpendicular impact to properly form their plasma jet.

Attacking the surface closest to perpendicular to the incoming weapon is done at no penalty, but if the Travellers want to aim somewhere else the referee may impose additional difficulties. An oblique angle will impose an additional targeting DM-1 to -6 depending on the awkwardness of the angle, making it generally a better idea to aim for the best aligned surface.

Travellers might come up with a clever idea, such as trying to hit the underside of a tank as it crests an obstacle or aiming for a 'shell trap' where the shape of the vehicle makes penetration more likely. If this is plausible and well roleplayed the referee should usually allow it. Top and bottom armour is typically thinner on ground vehicles than the sides or front, but weak points are a matter for referee discretion. This might be a plot element when attacking an enemy super-tank, or a clever tactic from a resourceful Traveller. Shell traps and weak points are typically rather small, but a miss by a small margin will usually still strike the vehicle. In this case an attack that succeeds with Effect +6 or greater will hit a weak point at the referee's discretion. Armour can be considered to be halved in this case, and the vehicle gains no advantage from reactive armour. Of course, this also applies to vehicles operated by the Travellers – they may find their expensive grav tanks are less invulnerable than they thought!

Some weapons are designed to attack the top or bottom of vehicles. Mines are usually positioned to direct a blast upwards and will strike underside armour, whilst some guided munitions are designed to attack the top of a vehicle rather than its front. Artillery-delivered weaponry is also likely to hit the top of a vehicle. In such cases, the top or bottom armour of the vehicle is used. Unless additional armour has been added, the top and bottom of a vehicle will have half the protection value of the sides.

HIGH AND LOW PENETRATION

When calculating the effects of some ammunition and weapon types, it may be necessary to consider more than one factor affecting how well a weapon punches through armour. As a general rule, pointed projectiles travelling at great speed penetrate better than those travelling more slowly or which are blunt, even if the projectile is heavier. Energy weapons in general do not penetrate well as they tend to dump all their energy into the first surface they encounter, though high-energy weapons such as plasma guns are so powerful that this does not really matter.

Drilling Armour

In theory, a laser or other energy weapon burning through an obstruction or a projectile weapon could punch holes by repeatedly striking the same place. However, the chances of remaining on exactly the same target point long enough to do so amid combat are rather small, especially with a hand-held weapon. Playable game mechanics require a degree of abstraction, so the ability of any weapon to get through armour is represented by damage, AP or Lo-Pen score and Effect of the attack roll, among other factors. If circumstances allow what amounts to drilling through armour, the only real question is how long it will take.

When calculating performance against armour, the weapon designer must keep track of positive and negative factors, which will produce a Penetration. This is applied on the Final Penetration table to determine if any traits or special effects are to be added. Most weapons begin with Penetration 0. There is no Lo-Pen 1 trait since this would mean no modification to the armour's Protection.

Final Penetration

Penetration	Effect	Traits and Damage Modification
-4	Extremely Poor vs Armour	Lo-Pen 5
-3	Highly Poor vs Armour	Lo-Pen 4
-2	Very Poor vs Armour	Lo-Pen 3
-1	Poor vs Armour	Lo-Pen 2
0	Standard Performance	—
+1	Semi-Armour-Piercing	AP 1 per full dice of damage
+2	Armour-Piercing	AP 1 plus 1 per full dice of damage, -1 damage per 2 full dice of damage
+3	High Armour-Piercing	AP 3 plus 3 per 2 full dice of damage, -2 damage per 3 full dice of damage.
+4	Extreme Armour-Piercing	AP 5 plus 2 per full dice of damage, -1 damage per dice of damage.

The weapon's performance against armour is determined by a running total of positive and negative factors, with the end result translated into traits. Thus a gauss rifle using armour-piercing ammunition, with a final Penetration 3, is a 'high armour piercing weapon', which modifies its damage from 4D to 4D-3 but adds AP 9. A low-velocity shotgun with Penetration -2 is 'very poor against armour', which gives it the Lo-Pen 3 trait. This weapon would treat a Protection +5 flak jacket as having Protection +15, but just might get some damage through.

SIGNATURE

All firearms and similar weapons have a signature, which is mostly created by the means of propulsion or generation of energy. Chemical propellant weapons produce a great deal of noise and often muzzle flash; they can throw dust and loose objects around if they are powerful enough. Lasers produce no muzzle blast but do make some noise as they ionise atmosphere as they pass – a laser in vacuum has no such signature. Gauss weapons produce an audible crack in atmosphere, but have no visual or audible signature in vacuum and cause minimal disturbance to dust. Gauss and laser weapons do produce significant electromagnetic emissions that can be picked up by appropriate instruments.

The signature of a weapon is modelled using new weapon traits and a modifier for accessories used on the weapon. There are two types of signature, one based on emissions such as electromagnetic spikes when firing or heat, and one based on physical effects that can be detected with eyes and ears. Both kinds of signature have varying levels ranging from slight to extreme, which impose DMs to detect the weapon and locate its firing position.

Signature Effects

Level of Signature	DM
Minimal	-6
Small	-4
Low	-2
Normal	0
High	+2
Very High	+4
Extreme	+6

DMs are based on the difficulty of detecting and locating a typical weapon of the type, such as a laser carbine or semi-automatic pistol, and are further modified by some weapon accessories.

Physical and Emissions Signature traits are detailed on pages 6 and 7.

DETECTING AND LOCATING

It is often not obvious where a shot came from, either because the shooter is concealed or the weapon is not visible. For example, a Traveller might have a group of people under observation when a shot is fired. The Traveller must decide if the shot came from the crowd or somewhere else and do so quickly enough to stop a colleague from firing into the group by mistake – or to present a second attack if the gunman is indeed within the group. Alternatively Travellers might come under fire from an unknown direction and need to take cover. Mistaking the source of the shot might result in hunkering down on the wrong side of a vehicle. Upon occasion, targets do not even realise they are being fired upon.

Detecting a gunshot typically means hearing it but also realising what the sound was. Not all weapons sound like firearms – lasers make some sound as they ionise atmosphere between muzzle and target but it may not be recognised as a weapon firing. If there is a lot of noise, such as when travelling in a vehicle on rough ground, the sound may not be heard at all or may be misidentified. A rock thrown up by the vehicle's wheels and slamming into its underside might be interpreted as a gunshot or vice versa. In some cases a Traveller might be unable to determine if the sound was or was not a weapon and may be reluctant to dive into cover at every sudden noise – or be ridiculed for it.

Just being aware that a shot was fired can be useful but often the Travellers will need to know where it originated. Detecting and locating a shot requires a Routine (6+) Recon check if using normal senses or an Easy (4+) Electronics (sensors) check if sensors are being used. Note that only specialist sensors can pick up a weapon's physical signature whereas almost anything that can detect magnetic fields, heat and the like will pick up its emissions signature. If the Traveller succeeds, they know a shot has been fired and its general type – conventional firearm, gauss weapon and so forth. Success with Effect +2 or better gives the Traveller the general location of the shooter.

Situational Modifiers

Circumstance	DM
Physical Signature DM for weapon	As applicable
Emissions Signature DM for weapon	As applicable
Shooter is in the observer's general arc of vision	+2
Noisy Conditions (vehicle on rough ground)	-2
Extremely Noisy Conditions (friendly gunfire nearby or artillery in the vicinity)	-4
Cluttered Terrain (forest, jumbled boulders)	-2
Bad location Conditions (sound echoing from buildings or cliffs)	-4

Success does not mean the Traveller knows exactly where the shooter is. If the shooter is standing in the open surrounded by a big pall of smoke the Traveller will probably gain an exact location but a camouflaged sniper or someone hiding in a dark upper-floor room may not be directly spotted. In this case the Traveller will have a general location such as 'upper floors of that building' or 'those trees, ground level' but will have to make an additional Recon check to spot the shooter. A general area could be sprayed with automatic fire or blasted with artillery even if all the Travellers know is that the shot came from 'somewhere in there' but directly engaging a target requires spotting it first.

In the event the Traveller succeeds with Effect +6 or more, they will be able to identify the weapon in use. Not to the degree of stating with certainty 'that was a twin-trigger Steyr-Mannlicher SSG assembled on a Tuesday by a left-handed armorer' but in terms of 'large calibre rifle', 'smallbore rifle', 'shotgun', 'gauss pistol' and so forth. They will also know the shooter's precise location, down to which window they fired from or the equivalent, even if they cannot see the shooter directly.

The Recon check is subject to further situational DMs, as noted on the Situational Modifiers table.

Once the general location of a shooter is known it becomes possible to try to spot them directly. This is necessary in order to engage with any sort of precision, but hosepiping the general area is always an option.

CAMOUFLAGE AND STEALTH

There may be occasions where the Travellers want to sneak past guards or get into a firing position without being detected – or someone else might want to do that to them. The basic procedure for spotting someone or avoiding detection is to use an opposed Stealth versus Recon check. This is modified by aids such as camouflage and sensors.

Some sensors make it effectively impossible to hide from attentive observers. A well-camouflaged soldier might be difficult to spot in the foliage but will stand out on thermal imaging to a level where nobody looking at the readout could fail to spot them. Yet it is still possible to be stealthy with the right equipment or techniques. One option is to distract the observers or make them doubt the sensor or even to turn it off. This might be achieved by triggering so many false alerts that they lose faith in their system.

Alternatively, thermal camouflage can be used. Some advanced camouflage uses shielded heat sinks that allow the user to be effectively invisible to thermal sensors for a time but which will eventually be overloaded and begin to leak so much heat they cannot be missed. Less technological solutions either conceal the user's heat signature to some extent or radiate it in a shape that does not resemble a person. Observers will still see a thermal image but may assume it is something harmless rather than a person with a weapon.

The battle between sensors and camouflage systems is modelled by modifiers applied to the opposed Stealth versus Recon check, with the Referee's common sense overruling bizarre situations. As a general rule of thumb, if someone trying to be stealthy has no counter to a sensor then unless the operators are extremely lax they will automatically be spotted. The Referee might grant an outside chance nobody was watching the readout or the auto-alarm somehow glitched but this is extremely unlikely unless the operators have been distracted in some manner.

Camouflage and sensors are both rated in terms of the DM they grant to a Stealth or Recon check. This all supposes the individual is moving slowly and not drawing attention. Once they open fire, observers will have a chance to spot the weapon discharge, although they will still have to win the Stealth versus Recon check to get eyes on the target rather than their general location. Once the shooter ceases fire and changes position, the Stealth versus Recon opposed check applies once more.

QUICKDRAW

Most combat is governed by the initiative rules. However, there are moments where all that matters is whether a Traveller or their enemy gets their weapon on line first. In such situations the wider picture does not matter; the contest is between two individuals or sometimes members of two small groups. This is termed a 'quickdraw' whether or not a weapon has to be drawn.

To resolve this, each participant rolls 2D and adds their DEX modifier and level of Gun Combat. The relative handiness of the weapon is the other critical factor. The Weapon Effects on Quickdraw table indicates typical Quickdraw scores of various weapon types, although this can vary depending on barrel length and accessories. The precise Quickdraw score of a weapon is determined in the design process.

If a weapon has to be drawn or unslung, DM-2 applies. If it has to be readied, for example by chambering a round, an additional DM-2 applies. A weapon already pointed in the general direction of the target gains DM+4, whilst one that is precisely laid on target – such as a sniper holding ready to shoot at any instant – gains DM+8.

The Weapon Effects on Quickdraw table gives a quick-and-dirty guide to the Quickdraw scores of different weapons. Specific values are calculated when designing a weapon but these can be used if the referee is in a hurry.

Weapon Effects on Quickdraw

Weapon Type	Quickdraw
Handgun	+8
Submachinegun	+4
Short Shotgun	+2
Lightweight Assault Rifle	+0
Battle Rifle	-2
Light Machinegun	-4
Anti-Materiel Rifle	-8

The Traveller with the highest Quickdraw score shoots first. It is not usually possible to aim under these conditions; snapshots and bursts of automatic fire are the only viable options. In the case where the weapon is already on target, such as a sniper waiting for clearance to shoot, the shot is assumed to be aimed with DM+2. It is not permissible to claim huge aiming bonuses for holding a weapon on target for a long period. If the target is hit but not downed, they suffer a negative DM to their own attempt to attack. This DM is -2, with an additional -1 for every full three points of damage suffered.

For example, a Traveller acting as point for a patrol turns a corner and finds herself facing a hostile militiaman going the other way. The Traveller has a short stockless shotgun ready for just such a close encounter, but rolls a disastrous 2 on 2D. Even with her DEX modifier and Gun Combat skill she has a total of Quickdraw 5, increased to 9 because her weapon is ideal for such situations. The gunman is armed with a submachinegun, but it is slung. He rolls a rather better 6, modified to 8 by his DEX and Gun Combat skill. The submachinegun grants DM+2, raising the total to Quickdraw 10, which would normally be sufficient to outdraw the Traveller. However, the gunman has to unsling his weapon (DM-2) and chamber a round (DM-2) before firing. He is on a total of Quickdraw 6 and is still readying his weapon when he is hit. His body armour stops some of the blast but he takes 10 damage. The gunman then looses a burst, but suffers DM-5 (-2 for being hit, -3 more for three full sets of 3 points of damage). Hopefully this is enough to throw off his aim.

KNOCKDOWN

In general it is more desirable to 'stop' the target than ensure a kill. A shot that delivers a mortal wound, but leaves the victim able to act for a few seconds, may have worse overall results than a non-fatal shot that knocks the target down and stops them acting. In theory any shot can achieve a 'knockdown' – a situation in which the target is immediately stopped in what they are doing and quite possibly sent to the ground. If a knockdown is achieved, the target cannot act for the rest of that round and all of the next.

To have any chance of achieving a knockdown on a typical bipedal creature it is necessary to deliver more damage than the maximum END value for a member of that species – 15 for humans and similar creatures – with a kinetic-energy or high-energy weapon; lasers and flame weapons cannot achieve a knockdown. It does not matter whether this damage gets through armour or not; all that matters is that enough energy is delivered to knock the target down or disorient them.

If damage exceeds species maximum, a knockdown occurs unless the victim resists it. Note that 'knockdown' is a general term for 'hit hard and temporarily unable to act'. Many times this will involve being knocked down or against something, or falling, but the exact effects depend on the circumstances. To avoid a knockdown, the target must make a Simple (2+) STR check, with negative DM equal to the amount of damage over their species maximum. Weapons that deliver a lot of force tend to do so by being poor penetrators – a weapon's Lo-Pen value is applied as a negative DM to the STR check. Conversely, weapons using armour-piercing ammunition tend not to dump their energy into the target as they often overpenetrate. A weapon's AP rating is used as a positive DM to the STR check.

For example, a human Traveller is hit by a pellet-firing shotgun. Their flak jacket is treated as Protection +15 against this weapon, which has the Lo-Pen 3 trait. Damage rolled is 16 points, of which only 1 gets

through the armour. However, the impact is sufficient to potentially cause a knockdown. To avoid this the Traveller must make a Routine (6+) STR check. Their STR DM is +1, but they suffer DM-1 for the one point of damage over their knockdown threshold and DM-3 for the shotgun's Lo-Pen rating. The Traveller rolls 8 on the dice, with a total DM-3. The Effect of the check is -1, which is insufficient to avoid a knockdown. A rifle bullet doing the same amount of damage would have penetrated the armour and done more actual harm to the Traveller, but probably not applied a knockdown.

BREAKING WEAPONS

It is quite difficult to completely destroy a typical firearm, but putting one out of action is not so hard. For example, it is not uncommon for snipers to shoot the breech block of machineguns or other support weapons. An intact weapon can be taken over by another soldier, whereas one that needs workshop time is out of action for much longer. It would still be substantially intact, however.

A weapon struck by a projectile, energy burst or some other means of dealing damage will suffer a Mishap if the damage inflicted exceeds its Mishap Threshold. Once the effects of the Mishap are determined there is no further effect. A weapon will be put out of action if it receives three times its Mishap Threshold in a single strike, and will require major repair. Ten times the Mishap Threshold should be enough to reduce a weapon to what is left of its components.

Mishap Thresholds are based on weapon type, and do not vary all that much between similar items. For example, damaging a handgun is about as difficult as damaging a rifle of the same construction. The materials used in the weapon's manufacture are significant in determining its Mishap Threshold, along with its general type.

Mishap Threshold

Weapon Type	Mishap Threshold
Flamethrowers and similar weapons containing hazardous substances	Tech Level/2
Lasers and similarly complex weapons that require precise alignment	Tech Level
Gauss, plasma, fusion and similar complex but robust weapons	Tech Level +4
Conventional firearms and similar strongly built mechanical devices	Tech Level +8
Hand weapons and similar strongly built items with few or no moving parts	Tech Level +12

The Mishap Threshold has nothing to do with how dangerous a weapon would be if a Mishap occurred – that is dealt with using the Hazardous trait on page 6. It is possible to make a weapon safer or even to armour it against damage. There is generally no need to track the Mishap Threshold of a weapon – attacks against them are uncommon. However, if the Travellers insist on using ramshackle home-made flamethrowers it may be worth keeping a note of the value required to cause a Mishap. Someone will take a shot sooner or later.

Weapons can be deliberately targeted but are difficult to hit even if the user is standing still. Targeting a part of a typical weapon that will potentially put it out of action imposes DM-6 on an attack roll. This is the case even if the weapon is quite large – a heavy machinegun may be a big object but most of it is composed of items that will not cause it to malfunction if hit. If the critical component is relatively large, such as the tanks of a flame weapon, the penalty is reduced to DM-4 and may be further modified at the referee's discretion.

DISTRACTIONS

Some weapons are intended to distract or debilitate opponents, instead of or in addition to harming them. Examples include concussion or flash grenades and munitions intended to throw out a series of bright sparks to interfere with night vision equipment. Anyone exposed to such a distraction must make an END check or be unable to take their next set of actions. This might be due to flinching from blinding light or simply turning to see what the sudden noise was. The difficulty of this check is determined by the distraction device, which in turn depends largely upon its size and power. Note that these are 'distraction' rather than 'stun' weapons. Those intended to put someone out of action for more than a combat round are considered elsewhere.

Victims can gain positive DMs to resist the effects of a distraction weapon. Sufficient warning to cover eyes or look away grants DM+2 against light-based weapons. Ear protection does the same for concussion or noise distractions. Some helmet and vision systems have automatic protection built in, granting these DMs or possibly higher ones without the user needing to take any action.

GAS AND CHEMICAL WEAPONS

Gas weapons are typically delivered from grenades but small arms ammunition can be converted to deliver a low quantity of gas. The concentration of gas, along with its composition, determines how likely targets are to be affected. All gas weapons are rated according to their capability to fill a 3x3x3m volume. Each additional volume this size that the gas must expand into reduces the potency of the weapon by one level. The final potency of the gas attack determines the difficulty of an END check to resist it. Those with respiratory protection may be entirely immune or gain a positive DM to resist the attack.

A single handgun or rifle round will typically deliver a Feeble potency attack. A shotgun cartridge or similar large smallarm projectile typically delivers a Weak attack, and a mini-grenade delivers a Low potency attack. Grenades, rifle grenades and small warheads produce an Average potency attack. These base potencies can be increased by the use of more advanced or concentrated gases. The effects of gases are described on page 55.

Chemical weapons that rely on skin contact are treated the same way.

Distraction Devices

Type	Example	Difficulty
Small	Pistol or Rifle-Fired Distraction Round	Easy (4+)
Minor	Shotgun-Fired Distraction Round	Routine (6+)
Typical	Flashbang Grenade	Average (8+)
Potent	Enhanced Distraction Grenade	Difficult (10+)
Overwhelming	Extreme Noise, Flashing Lights; not typically attainable from a grenade or smaller device	Very Difficult (12+)

Gas Weapon Potency

Potency	Difficulty
Feeble	Simple (2+)
Weak	Easy (4+)
Low	Routine (6+)
Standard	Average (8+)
High	Difficult (10+)
Potent	Very Difficult (12+)
Overwhelming	Formidable (14+)

INCENDIARY AND FLAME WEAPONS

Incendiary and flame weapons are designed to set fire to a target and/or inflict damage over a prolonged period. All incendiary and flame weapons have the Incendiary trait (see page 7), which indicates their propensity to set objects on fire. Most military flame weapons rely on coating the target with a sticky, flammable liquid which is then ignited, whereas incendiaries are more commonly a solid material which burns inside the target after penetration. The effects are similar in most cases, but flame weapons do not have a Penetration associated with them – they always coat the outside of a target and defeat armour by heat conduction rather than physical penetration.

In both cases, the initial damage done by the weapon may be followed by more. An incendiary or flame weapon that has the Burn trait does half damage for a number of rounds equal to its Burn score. Armour protects against this damage each round. If the target is hit by another flame or incendiary weapon during this time, only the highest damage is applied.

CORROSIVE WEAPONS

Corrosive weapons are rare but may be encountered either as improvised equipment or in use with unusual societies. Improvised corrosive weapons usually take the form of chemical sprayers or fragile containers filled with corrosive substances. Occasionally projectile weapons firing either a soft round intended to flatten and stick to the target, or a hollow projectile intended to deliver the corrosive agent into the target, are encountered. The most common of these are breaching devices which stick a wad of corrosive material onto the target in the hope it will eat through or at least weaken the structure.

Corrosive weapons have a damage rating like any other, but deliver their damage in a different way. Each round, corrosive damage drops by 1D until it reaches zero. Any modifiers to damage expire with the last 1D.

Armour protects as normal. However, a corrosive weapon will destroy armour it is in contact with, at the rate of 1 point of armour per dice of damage.

For example, a Traveller wearing a Protection +5 flak jacket is hit by a corrosive weapon doing 2D damage. Damage rolled is 8 points, so the Traveller takes 3 points of damage through armour. His armour is degraded by 2 points that round because it was in contact with a 2D corrosive weapon. The following round the corrosive damage drops to 1D. Damage rolled is 4 points, and since the Traveller's armour is down to Protection +3, 1 point gets through. The flak jacket is degraded an additional point. The Traveller takes no damage the following round, but the flak jacket is now Protection +2.

Some armour is treated to be corrosion-resistant. This is indicated by the Corrosion-Resistant (+X) trait. The value counteracts the reduction of Protection by the corrosive attack. If the Traveller in the above example was wearing a Corrosion-Resistant (+1) flak jacket the armour would have been degraded by only 1 point in the first round and not at all after that.

MILITARY AND CIVILIAN ELECTRONICS SYSTEMS

In general, military electronics tend to be based on civilian systems and are often behind the technology curve, except where a project has been undertaken to produce a specialist capability. Reliability is prized above capability in most functions. The actual components, programs and systems in use are often exactly the same as civilian electronics, allowing repairs and replacements to be made with commercially available components. However, military systems tend to have extra capabilities, often provided by additional components rather than integrating everything by designing whole new circuit boards. Thus the interior of a military computer often contains familiar civilian components or boards with specialist military components squeezed in wherever they will fit. This is particularly the case in items intended for the cheaper end of the mercenary market.

Military electronic systems are more robust than their civilian counterparts, though usually this is achieved simply by mounting them in tougher cases. They also have the capability to interface with other military systems, which civilian equivalents lack. At its simplest, this is a matter of having the right ports and a small additional drive containing the protocols required to talk to other milspec electronics. In cheaper machines the actual internal workings of the system are identical to civilian systems, with the interface unit acting as a filter. If it can be bypassed, a civilian system could interface directly. Dedicated military computers 'think in military' and are not compatible with civilian models even if security is bypassed. This eliminates most possibilities of hacking by a passing kid with an illegal haxxor app downloaded to their comm.

Typically the computer systems of major powers are unique and require the right interface protocols. Many of these are available as packages on the mercenary market – legally and otherwise. Some powers want properly accredited mercenaries to be able to interface with their equipment. Others insist that all electronic transfers go through a single secure access point. Equipment produced for the mercenary marketplace is always compatible with what might be called the commercial-military end of the market. A unit that buys equipment will configure it to fit with its own secure electronic environment using built-in protocols. These are less of a barrier to hacking than a dedicated computer and electronics system, but far cheaper.

It is still possible to hack a mercenary unit's electronics using civilian computer systems but an interface must be established. The typical Traveller's personal comm simply cannot talk to a military system, except by way of a firewalled 'outside unsecured comms' protocol which does not allow access to the operating system. Interface devices are supposedly controlled and restricted to sale to accredited mercenary unit, but there are always examples on the black market.

As a general rule, electronic equipment for use by mercenaries is designed to be interoperable with other items on the market, creating a 'plug and fight' capability which still excludes non-military systems. Any attempt to hack a military electronic system using civilian systems is subject to DM-2 even if an interface is available, and will probably be impossible if not. Similarly, attempts to hack a dedicated military system from a mercenary-market system suffers DM-2, and civilian equipment increases this to DM-4. Additional security measures may increase the difficulty further.

Electromagnetic Field and Pulse Effects

Electronic systems can be badly affected by a rapidly changing electromagnetic field, especially when this takes the form of a high-intensity pulse produced by a weapon. Naturally occurring pulses are usually caused by solar activity, and electromagnetic leakage from poorly constructed machinery can have similar effects. Pulses can also be produced by nuclear explosions and certain weapons.

The basic principle behind producing an electromagnetic pulse is simple, meaning it can be accomplished by any society capable of generating electricity. Making a device small enough to use as a grenade or similar weapon requires more advanced technology; electromagnetic pulse (EMP) grenades become possible at TL9, though crude generators can be built earlier. A weaponised EMP generator such as a grenade produces a pulse with an intensity equal to its Tech Level. A pulse will destroy all unshielded electronics of more than two Tech Levels below its intensity level, and will cause all unshielded systems within two Tech Levels of its intensity to shut down for 1D minutes.

It is possible to shield electronic devices from the effects of a pulse, though this is rare in the case of civilian electronics other than scientific or specialist equipment. Advanced civilian equipment is generally more resilient, so whilst not shielded as such a TL12 civilian system would not be shut down by a TL9 EMP grenade. It might still be disrupted, however.

Shielded systems, which includes all military electronic systems, civilian systems noted as being hardened against EMP effects and civilian systems more than 2 Tech Levels higher than the intensity of the pulse, may or may not be disrupted. Roll 2D on the EMP Disruption table, with DM+1 for every TL above the intensity of the pulse, and an additional DM+2 if the system is designed for military use.

Electromagnetic fields can impose similar effects, such as when Travellers try to use communications equipment during a solar flare, or when unshielded electronic devices are used near a badly shielded piece of machinery. Typically a field will have an intensity ranging from 1 to 6, but spikes and flares are possible with a much higher intensity.

EMP Disruption

2D+DMs	Result
2-4	System shuts down for 1D minutes and must reboot
5-7	Severe disruption/whiteout imposes DM-6 on all tasks using the system for 1D minutes
8-10	Disruption imposes DM-4 on all tasks using the system for 1D minutes
11-13	Disruption imposes DM-2 on all tasks using the system for 1D minutes
14+	No Effect

DEMOLITIONS

Much of the time in a mercenary campaign, destruction of an object is a plot point rather than something the Travellers need to be directly concerned with. It is often quite acceptable to assume a commando unit is carrying suitable explosives to deal with a target, and build a storyline about getting them into place and preventing the enemy from disarming the charges. Sometimes it is necessary to determine whether a wall has been breached, a statue destroyed, or whatever else the Travellers are trying to achieve – or trying to stop.

Damage can be inflicted by impact, explosions, corrosive substances or other means. If a target is thoroughly doused in cryogenic fluids then struck - even quite lightly – it may shatter. Cryogenic demolition is very destructive, inflicting twice the damage delivered by the cryogenic weapon once the 'tap' is applied. If the target is simply doused in cryogenic fluid and left alone, it suffers normal damage.

The amounts of damage noted below are sufficient to put a fist-sized hole in an object. Ten times as much damage will shatter the object, and 25 times as much will obliterate it. If vaporisation is required and a suitable weapon is to hand, 50 times the Structure noted in the Demolition of Objects table will achieve this.

Demolition of Objects

Object	Protection	Structure
Small Kitchen Appliance	+0	4
Personal Computer, Monitor or similar device	+0	6
Wooden chair	+2	8
Typical bar-room table	+2	12
Wooden door (normal)	+1	6
Wooden door (reinforced)	+2	8
Wooden fence (2m section)	+1	8
Internal Plastic Door	+2	5
Brick Wall	+4	16
Starship Internal Partition or Door	+6	20
Concrete Wall	+8	24
Reinforced Concrete Wall	+10	28
Small Boulder	+10	40
Large Boulder	+10	60
Steel Hatch	+8	50
Steel Blast Door	+12	150



C H A P T E R - F O U R

PERSONAL WEAPON DESIGN

The weaponry found in the *Traveller Core Rulebook* and *Central Supply Catalogue* represents a generic version of their type. This is entirely adequate for most users, but there may be times where a few more rounds in the magazine or a slight range advantage could mean the difference between mission success and medical repatriation.

The following design system creates game-mechanics data for weapons, including damage, effective range and the like. Fine details like safety devices or specific features are a matter for referee discretion. Note that the price for weapons created under this system is a suggestion only. There is no reason why a manufacturer might not price their weapons above or below the suggested cost, but this is an in-universe detail to be determined by the referee.

Most weapons are designed around the ammunition they use or their method of causing injury, and it is this that defines the basic characteristics of a weapon. In addition to their ammunition type, weapons are considered to consist of three main components: the receiver, the barrel and furniture. Additional components can be considered to be accessories, as usually a weapon will function without them. Ammunition type determines base damage and range for the weapon.

The receiver contains the main working components of the weapon such as feed and ejection mechanism, firing chamber and so forth. It also incorporates some kind of grip for the firing hand or the equivalent for creatures without hands as such. The cost and weight of the receiver is used as a baseline for other components, whose characteristics are given as a percentage of the receiver's cost or weight. The type of receiver used also determines the weapon's base Quickdraw score.

The barrel determines many characteristics of a weapon such as its effective range, and may modify damage. In general a long barrel gives a higher muzzle velocity from the same projectile or a tighter beam from the same energy weapon, resulting in greater effective range and damage. Barrel length modifies Quickdraw.

The furniture on a weapon is its stock, foregrip and the like. Adding a stock improves aimed fire and controllability, but also increases weight. Some modifications affect Quickdraw.

Accessories include scopes, laser pointers, bipods and the like. Weapons will generally function without them. The exception is a feed device such as a magazine or belt, since obviously projectile weapons need ammunition.

Feed devices can vary considerably from one weapon to another. Some are implicit in a weapon's design, such as a revolver's cylinder or the chamber of a single shot breechloader. If a detachable feed device is used, its capacity is normally determined by the base value for the weapon type. The capacity of a feed device is a matter for referee discretion; it can be set at any value from 50%-150% of the weapon's base capacity. Thus when deciding on the capacity of a standard semi-automatic pistol the referee may set it anywhere from 5 to 15 rounds since the base capacity of a standard handgun is 10 rounds.



Weapon Design Process

When designing a weapon, the following steps are taken in order. Sometimes it may be necessary to return to an earlier step if the results are not satisfactory but this is generally straightforward unless the ammunition type is to be changed.

1. Decide the weapon's general type (rifle, pistol and so forth).
2. Choose an ammunition type or power source.
3. Choose a receiver and mode of operation (breechloader, semi-automatic and so forth).
4. Assign barrel length.
5. Assign furniture.
6. Choose a feed device.
7. Add any accessories that come as standard.
8. Total the cost and weight for the weapon.

Note that when the weight or cost of a component is calculated this is usually based on the weight or cost of the receiver once it has been modified by any receiver features. This baseline value determines what every further modification or accessory will add to the weapon.

The referee may choose to apply modifications to cost and weight based on cosmetic factors, manufacturer prestige or similar in-game details which do not affect the overall performance of the weapon. Weights and prices can be rounded off to suitably 'tidy' values. Small changes such as adding or removing a point or two of damage can be added by the referee to create more variation in weaponry available.

THE ADVANCED WEAPON DESIGN WORKSHEET

When designing a new weapon it is useful to fill out a worksheet, keeping track of modifications as they are added. This is not necessary with simple weapons but where there are multiple variations or different ammunition types in use it is easy to lose track. Most component costs and weights are based on the cost and weight of the receiver once it has been configured to the user's desires. A blank worksheet at the back of this book can be photocopied, or downloaded for free from our web site.

This weapon is simple, with few modifications to its base costs. Cost and weight will likely be rounded up when the design is finalised, whilst other features will be determined from the values noted here. This feeds into extended weapon characteristics with the data required for play.

Tweaks, Rounding and Special Features

Calculated values should be used on the worksheet, and exact figures retained so that alterations or modifications are easy to calculate. Rounded values should be used in the weapon's stat block. With the referee's approval values can be rounded off to the nearest Cr10, 0.1kg or a similar level of detail.

A weapon can be given a special feature at the referee's discretion. A point or two of damage, slightly amended weight, cost or ammunition capacity are all permissible for referee-developed weapons. The Travellers should not be allowed to tweak their own designs in this manner without the referee's oversight.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Generic 6 Revolver	6	10m	3D-3	0.75	Cr150	6	Cr5	+8	Lo-Pen (2)

ADVANCED WEAPON DESIGN WORKSHEET

GENERIC 6 REVOLVER



Weapon: Generic 6 Revolver

Type: Medium-Calibre Revolver

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr200	0.5kg	Quickdraw 4
Ammunition Type: Medium Handgun			Base Damage: 3D-3 Ammunition Cost: Cr75 per 100 rounds Base Range: 50m
Mechanism: Repeater	-50%	—	Base Ammunition Capacity: 5
Modified Ammunition Capacity: 6 rounds (120%)	+20%	+10%	Ammunition Capacity: +20%
Receiver Totals	Cr120	0.6kg	
Barrel: Handgun	Cr27	0.12kg	Range -80% Penetration -1 Quickdraw +4
Stock: None			
Accessories: None			
Totals	Cr147	0.72kg	

CONVENTIONAL FIREARMS

Conventional firearms use a projectile made from some heavy material, driven by the force generated by expanding gas. This in turn comes from a propellant which may be initiated either by mechanical or electric means. Mechanical initiation is far more common and requires no power. Typically a primer is inserted in the cartridge, containing material that will explode when struck hard, providing enough energy to initiate the propellant. The result is noisy and produces muzzle flash, and may stir up dust around a shooter. Thus mechanically initiated conventional firearms possess the Physical Signature trait. If not specified this is at the (normal) level.

Electric initiation requires a more complex weapon with a power source. It does not eliminate noise and flash, and the power source gives the weapon the Emissions Signature trait. This is normally (minimal) as the spark is brief and contained within a metal weapon. Electrically initiated weapons are favoured by some users as they have less moving parts – this can be important in a very dirty environment – and can achieve a higher rate of fire than weapons which rely on mechanical action.

Cartridge cases are normally made from metal or plastic, and almost always ejected from the weapon as part of the loading-firing cycle. Caseless ammunition is available for weapons designed to use it. It has the advantage that the cartridge is entirely formed of propellant so can be lighter and does not need to be ejected from the weapon. This means less moving parts which is usually a good thing, but caseless ammunition is expensive to produce. It typically costs three times as much as conventional ammunition, and can only be used in weapons designed for it – which are also more expensive to produce.

Some very ecologically friendly governments insist on 'green' ammunition which uses non-toxic, biodegradable propellants and cartridge case materials. This is an example of what might be called 'novelty' ammunition. Costs start at twice the price of conventional ammunition and can be much higher depending on the stipulations of the user.

RECEIVER CONFIGURATIONS

The configuration of a weapon is relevant to how 'handy' it is at close quarters, how bulky, and how accurate it is at range.

Test Range and Effective Range

The ranges for ammunition types given here are based on the round's performance through a test barrel equivalent to a rifle-length weapon. This is the range to which the ammunition will remain reasonably accurate. It will travel further, of course, but loses velocity and consequently performance in terms of both accuracy and hitting power.

The barrel length selected for a weapon modifies its muzzle velocity and therefore its effective range. A very short barrel, for example, does not allow the round to reach full velocity and also reduces accuracy, all of which adds up to a shorter effective range. It is possible to fire rifle-calibre rounds from a handgun, but performance will be nowhere near as good as when fired from a proper rifle.

There are three common types of receiver for personal projectile weapons: handgun, assault weapon and longarm. Heavier weapons can use a light support or support weapon receiver.

Handguns: Handguns are designed to be held in one hand, though the weak hand is generally used to steady the weapon in a two-handed grip. True handguns include semi-automatic pistols and revolvers, but some other weapons can be considered handguns. These include weapons resembling sawed-off shotguns and very small submachineguns that can be fired with one hand if necessary.

Handguns can be used in close combat with no penalty, whereas other firearms cannot. There is no penalty for firing a handgun with one hand, but to conduct aimed fire it is generally necessary to use both hands or brace the weapon in some other manner, such as resting it on a wall. Even when aiming, handguns have a short effective range due to air resistance causing rapid loss of velocity, short barrels and the difficulty of precisely aiming such a short weapon.

Handguns can be chambered for any projectile ammunition, though pistol or snub weapon calibres are most common. A handgun receiver has a base Quickdraw 4.

Assault Weapons: The term ‘assault weapon’ in this context refers to weapons designs for use at short range, such as in urban combat or inside a space vessel. Most assault weapons are chambered for pistol or snub weapon cartridges, but assault weapons chambered for more exotic ammunition types do exist. Assault weapons normally require both hands to use effectively, but can be fired one-handed with DM-2 on attack rolls.

Assault weapons are almost always constructed for burst or full-automatic fire, at no additional cost. ‘Civilian’ versions, capable of semi-automatic fire only, are typically available at the same cost. It is generally possible to convert these back to full-automatic with a few simple adjustments, though it is illegal to do so in many locales. An assault weapon has a base Quickdraw 2.

Longarms: Longarms are designed to be held in both hands, and include rifles, light machineguns and combat shotguns. Longarms can be fired with one hand but are subject to DM-4 on attack rolls. A longarm can usually be used as a decent club, doing 2D damage, and military versions often have a bayonet mounting. A longarm has a base Quickdraw 0.

Light Support Weapons: Light support weapons include general-purpose machineguns, anti-materiel rifles and most plasma and fusion weapons, as well as shoulder-fired anti-aircraft and anti-armour missile launchers. Light support weapons are heavier than longarms and cannot usually be fired one-handed unless on a suitable mount or gravitic support device. Light Support Weapons have a base Quickdraw -4.

Heavy Weapons: Heavy weapons normally require a mount or emplacement to use, and include heavy machineguns, light autocannon, heavy missile launchers, battlefield mortars, large plasma weapons and the like. Most heavy weapons are carried by a team of soldiers or mounted on a vehicle, but some can be mounted on battle dress. Heavy Weapons have a base Quickdraw -8 if mounted on battle dress or traversed on their mounting to engage a new target. Base weight and cost vary considerably.

PROJECTILE WEAPON MECHANISMS

The mechanism used in a weapon will normally define most of its characteristics. The physical mechanics can vary considerably, but the overall characteristics can be summed up by the following nomenclature.

Single Shot: A single shot weapon can fire only once before needing to be reloaded. Examples include black powder muskets or breech-loading shotguns and rifles. A double or multi-barrel firearm is still a single shot weapon, but obviously each barrel can fire its one shot before having to be reloaded. Single shot mechanisms reduce the receiver cost by 75%.

Repeater: Repeater weapons carry multiple rounds of ammunition but require either direct action from the user (such as with a pump-action shotgun or bolt-action rifle) or are cocked and then fired by the user’s actions (such as a double-action revolver). This makes them relatively slow-firing. A repeater mechanism reduces receiver cost by 50%. A weapon with a repeater action reduces base ammunition capacity by 50%.

Semi-Automatic: Semi-automatic weapons reload automatically using the energy generated in firing. Examples include semi-automatic pistols (often known as autopistols) and rifles, plus many automatic weapons when set to semi-automatic operation. If no mechanism is specified a weapon is assumed to be semi-automatic.

Burst-Capable: A burst-capable weapon has a device fitted that fires a set number of rounds per pull of the trigger. Most fully-automatic weapons can also be used in burst fire mode. A burst-capable weapon has an Auto rating but cannot use full-automatic fire. It can only deliver burst fire as per the *Traveller Core Rulebook*, or be set to semi-automatic operation. Burst fire capability does not add significantly to the weight of the weapon but increases cost by 10%. It gives the weapon Auto 2. It can only make attacks in single or burst mode however.

Receiver Characteristics

Receiver Type	Base Cost	Base Weight	Base Ammunition Capacity	Base Quickdraw
Handgun	Cr175	0.8kg	10	+4
Assault Weapon	Cr300	2kg	20	+2
Longarm	Cr400	2.5kg	30	+0
Light Support Weapon	Cr1500	5kg	50	-4
Heavy Weapon	Cr3000	10kg	50	-8
Gauss Weapon	x2	x1.25	x3	—

Fully-Automatic: A fully-automatic weapon can normally be set for semi-automatic fire, and many can also conduct burst fire. When in full-auto mode, the weapon will cycle as long as the trigger is held, burning through all available ammunition. Fully-automatic capability does not add significantly to the weight of the weapon but increases cost by 20%. It gives the weapon Auto 3. A fully-automatic weapon can make attacks in single, burst or full-auto modes.

Rapid-Fire: A Rapid-fire (RF) weapon is designed to deliver a very large amount of ammunition in a short space of time. This can be wasteful but is highly destructive. Rapid-fire capability is denoted by the RF code after the weapon's Auto score. A rapid-fire weapon must have a high Auto score (at least 4) and also delivers such intense firepower that damage is increased relative to a 'mere' automatic weapon of the same calibre. RF weapons do an extra dice of damage per three full dice an automatic weapon of the same calibre would deliver. RF capability can be created by using a multiple mount, or simply a weapon with an extremely high rate of fire. Rapid-fire capability multiplies base cost by the weapon's Auto score +2. Thus a rapid-fire weapon with Auto 4 increases base cost by $4+2 = 6$. Rapid-fire capability adds the Bulky trait and multiplies base weight of the receiver by 2. An RF (or VRF) weapon has an AP score equal to the base number of damage dice, calculated before additional rapid-fire damage is added. RF capability has implications for area and suppressive fire (see page 15).

A weapon can be converted to RF in various ways. A twin mount carrying identical weapons with Auto 4+ can be considered an RF weapon, doing damage based on a single example of the type modified by its RF capability. Alternatively, a weapon can be converted to RF by increasing its Auto score to at least 4 and using powered or forced feed and initiation, such as that used in a chain gun. A powered feed system triples the cost and weight of the weapon's receiver, and is only feasible on longarms, light support weapons or support weapons. An RF weapon generates Heat at a rate equal to its Auto score plus twice its damage dice, so an Auto 4 weapon delivering 3D damage generates $4+6 = 10$ Heat per round.

Very Rapid-Fire: Very Rapid-Fire (VRF) weapons are designed to deliver extremely intense firepower. A VRF weapon must have Auto 6+, and in addition delivers an extra dice of damage per two full base dice indicated by ammunition type. For example, a 5.56mm machinegun has Auto 3 and does 3D damage. A VRF version of the same weapon has Auto 6 and does 4D damage. VRF capability has implications for area and suppressive fire (see page 13). A VRF weapon generates Heat at a rate equal to its Auto score plus three times its damage dice,

so an Auto 6 weapon delivering 4D damage generates $6+12 = 18$ Heat per round. (see page 13). A VRF weapon generates Heat at a rate equal to its Auto score plus three times its damage dice, so an Auto 6 weapon delivering 4D damage generates $6+12 = 18$ Heat per round.

VRF capability is usually achieved by using multiple barrels in a rotary or grouped configuration, such as a minigun. A twin-mounted RF weapon can be considered a VRF weapon of the same type. Alternatively, a weapon can be converted to VRF fire by increasing its Auto score to at least 6 and using a VRF feed system. The latter adds the Very Bulky trait and multiplies base weight and cost of the receiver by 5.

Underwater: Some firearms and specialist weapons are adapted for use underwater. Range is given under normal conditions; instead of reducing their range to 1/10 as with most conventional weapons, range for an underwater-adapted weapon is reduced to 1/5. Underwater-adapted weapons require specialist ammunition. This configuration multiplies the base cost of the receiver by 2.

RECOIL

All conventional firearms produce recoil. Gauss weapons do too, but to a much smaller extent as their projectiles are smaller and lighter. Controlling a weapon, particularly one using automatic fire, can be a problem for those without proper training. The mass of a weapon helps absorb recoil, so creating an extremely powerful handgun or one capable of automatic fire can make it uncontrollable. A weapon's Recoil score is equal to its base number of damage dice plus its Auto score if it is being used for fully-automatic or burst fire. The following modifiers are applied to this score:

Near-zero recoil weapon such as accelerator rifle: -4
Low-velocity weapon such as snub pistol: -2
Gauss weapon: -1
Handgun: -2
Assault Weapon: -4
Longarm: -6
Light Support Weapon: -8

A user can fully control any weapon whose Recoil is equal to or lower than their Gun Combat skill. If the Recoil of the weapon is higher than the user's skill level, a negative DM is imposed equal to the difference. Thus a Traveller with Gun Combat 1 shooting a standard handgun doing 3D damage will have no problems handling the weapon's Recoil 3 (from its 3D of damage), -2 for the mass of the handgun. The weapon's Recoil 1 is equal to or less than the Traveller's Gun Combat skill. If the Traveller converted this pistol to fully-automatic

fire with Auto 3, the weapon's Recoil would be $(3+3-2) = 4$, imposing DM-3 on the Traveller's attempt to hit anything with automatic fire. This stacks with any penalty for a Bulky weapon – there are some people who should not be given fully automatic shotguns!

RECEIVER FEATURES

Once the general characteristics of a weapon's receiver are known, any special features can be added. Most features are compatible with one another – for example it is possible to make a weapon both Rugged and Lightweight if you are willing to pay the price for the advanced materials. Multiple versions of the same feature cannot be applied. For example, a weapon cannot be both Compact and Very Compact.

Functional Features

Functional features improve or alter a weapon's function without adding any new capabilities.

Advanced Projectile Weapon: At TL9 and higher, weapon designers can use advanced technology to improve a weapon's overall performance without affecting weight or bulk – effectively wringing more out of the same weight and volume of weapon. Advanced Projectile Weapons cost 25% more than conventional projectile weapons but weigh 10% less. They have a Physical Signature one level lower, and range is 25% further.

Accurised: A weapon that is very carefully made to the finest tolerances increases cost by 100% but gives DM+1 when using aimed fire at ranges beyond 25m. This is compatible with High Quality.

Bullpup: A Bullpup weapon has the ammunition feed mechanism and breech behind the trigger mechanism rather than in the usual position in front of the primary handgrip. This allows a weapon to be shorter without reducing barrel length, and transfers weight rearwards which assists when it has to be brought quickly into action. Bullpup configuration increases cost by 25% and increases Quickdraw by +2. However, the location of the ejection port, if the weapon has one, means that it must be set up for a right- or left-handed shooter and cannot be used in the wrong hand without flinging hot cartridge cases at the user's head. A Bullpup weapon must have a full stock, as the feed mechanism is contained within it.

Compact: A Compact receiver adds 25% to the cost of the weapon and reduces mass by 10%. Base ammunition capacity is reduced by 25%.

Cooling System, Basic: Most weapons are air-cooled; that is, they dissipate heat into the atmosphere or by radiating it if there is no air around them. A Basic Cooling System takes heat away from the weapon by transferring it to another medium. At lower Tech Levels this is typically a water jacket and is very bulky and clumsy. A Basic Cooling System increases weight by 100% and cost by 10%. It removes 2 points of Heat from the weapon each round whether it is fired or not. If water is used, it can absorb 25 points of Heat per kg before boiling off.

Cooling System, Advanced: An Advanced Cooling System replaces the traditional water jacket with a much smaller web of pipes containing liquid with a high heat capacity. This removes 5 points of Heat from the weapon per round whether it is fired or not. The heat has to go somewhere, however, and the system itself has a capacity only of 25 points of Heat. However, it can be plugged into a heat sink such as a 'chill can' (see page 127) which can then be discarded when its capacity is used up. Alternatively, a support cooling system can be used, which is not portable but has a much higher capacity. An Advanced Cooling System adds 20% to the weight of a weapon's receiver and 50% to its cost.

Guidance System: Guidance Systems are only available for weapons capable of launching missiles. Without one, a missile launcher can only use 'dumb' unguided munitions. A Guidance System interacts with the missile's onboard electronics if they are present – it cannot guide a 'dumb' weapon but can certainly launch one. A Guidance System adds 50% to the cost of the launcher.

High Capacity: A High Capacity weapon is typically wider to allow more ammunition to be carried in a magazine without it projecting any more than a standard one. This makes magazines incompatible with non-High Capacity weapons even if they use the same calibre of ammunition. High Capacity adds 20% to cost and 10% to weight, and increases base ammunition capacity by 20%. For a standard handgun this means base capacity is now 12. Actual capacity can be set at up to 150% of this value, permitting handguns with an ammunition capacity of up to 18 rounds to be created. High Capacity is not compatible with Compact or Very Compact.

High Quality: A High Quality weapon is often finely decorated as well as being very well made. High Quality starts at a 50% increase in the receiver cost, but there is no upper limit on how much the final design can cost. A High Quality 'working' weapon such as a sniper rifle may look very ordinary, but grants DM+1 on attack at ranges beyond 100m when using a scope or similar sighting aid.

Increased Rate of Fire: Only weapons built on a burst-capable or fully-automatic receiver can have their Auto score increased. A burst-capable weapon with this modification is still not capable of full-auto fire but can take advantage of increased damage from an improved Auto score. Burst-capable weapons start with Auto 2; full-auto weapons start with Auto 3. In addition to getting through a lot of ammunition, the weapon's cost and weight increases with each point of Auto added. A weapon whose Auto score is increased enough to add RF or VRF capability bases the cost of that modification on its inflated cost and weight.

Increased Auto Rate

Auto Increase	Cost	Weight
+1	+10%	+5%
+2	+25%	+10%
+3	+50%	+20%
+4	+100%	+40%
+5	+200%	+60%
+6	+300%	+80%

Lightweight: Lightweight weapons are designed to be lighter than usual, but this comes at a cost of being less durable unless better materials are used. Lightweight reduces weight by 20% and either increases cost by 50% or imposes the Hazardous (-1) trait. This increases the severity of the Hazardous DM if it has been gained elsewhere.

Lightweight, Extreme: A weapon can be pared right down to essentials, but this might make it flimsy. Extreme Lightweight reduces weight by 40% but either impose the Hazardous (-3) Trait or increases cost by 200%.

Low Quality: Low Quality weapons are cheap, but not usually all that badly made. Finishing may have some issues such as burrs on metal or grips that do not quite fit as they should but a Low Quality weapon will still shoot straight and function reliably under most conditions. It may be frustrating and annoying to maintain however. Low Quality reduces cost and imposes negative Traits, and can be imposed by poor materials or other conditions beyond the maker's control rather than being a choice to make the weapon cheaper.

A weapon that has Deficiency points must satisfy them by applying the Inaccurate, Unreliable, Ramshackle and/or Hazardous traits. Each point of Inaccurate or Hazardous satisfies one Deficiency point. Ramshackle satisfies 2, and

Degrees of Low Quality

Degree	Receiver Cost Reduction	Deficiency Points
Low Quality	-10%	1
Very Low Quality	-20%	2
Extremely Low Quality	-40%	3
Appalling Quality	-60%	5
Piece of Junk	-80%	8

Unreliable satisfies 3. Ramshackle effectively imposes a point each of Inaccurate and Hazardous, which stack with any points added from one or the other.

For example, a Traveller has bought the worst-made handgun she could possibly have found and must apply 8 Deficiency points. She chooses Ramshackle (-1), Hazardous (-3), and Unreliable (1). When it works this gun is not that awful, merely shooting a little inaccurately as a result of the Ramshackle DM. However, there is a 1 in 6 chance that the weapon will malfunction any time it is used in combat. If it does malfunction, it imposes DM-4 (-3 from Hazardous and -1 from Ramshackle) on the Malfunction table.

Quickdraw: A weapon can be optimised for rapid-response situations, often to the exact specification of the user. A Quickdraw weapon increases cost by 20% and grants an additional Quickdraw +2 when being brought into action. It also grants DM+1 to attack rolls when shooting at ranges under 25m, and DM-1 beyond this range.

Recoil Compensation: Various devices are available to help control the recoil of powerful weapons. Many rely on diverting some of the propellant gases in a direction that counters recoil, though other devices are available. All rob the projectile of a little of its energy. A weapon's Recoil score (see page 32) can be reduced by up to 2 at the cost of imposing +10% cost and +5% weight per point. A point of Recoil Compensation reduces damage by -1. Two points reduce damage by -3.

Rugged: Rugged weapons are designed to deal with harsh conditions and general maltreatment. Firearms are, as a rule, generally quite damage-resistant but a Rugged weapon will withstand hazards a conventional weapon will not, at least for a time. Examples include mildly corrosive conditions, heat, cold and particularly insidious grit or dust, as well as more conventional hazards such as being driven over by a truck. Rugged-

sation adds 30% to the cost of the receiver and 10% to weight. Rugged weapons gain DM+2 to rolls on the Malfunction table.

Very Compact: A very compact receive adds 40% to the cost of the weapon and reduces mass by 20%. Base ammunition capacity is reduced by 50%.

Capability Features

These alter the weapon's capabilities, typically adding new ones, or otherwise changing the nature of the weapon.

Armoured: Weapons can be armoured and hardened to protect them against damage. This adds 10% to receiver cost and 5% to its weight for every point of Protection. Armour protects against knocks and bashes but not internal malfunctions such as breech explosions.

Bulwarked: Bulwarked weapons have additional safety features such as a strengthened breech to contain ammunition explosions or fireproofed tanks on a flamethrower. Bulwarking also represents additional user-safety features such as additional catches, locks and other impediments to an unintentional discharge. Every point of Bulwarked provides DM+1 to rolls on the Malfunction table. Bulwarking costs 20% of the receiver cost and adds 10% to its weight per point.

Disguised: Disguised weapons look like something else or are concealed inside an innocent item. This is more than merely covering a submachinegun in shirts and closing the suitcase – that costs nothing and is not very effective. A disguised weapon nestles in a concealed chamber within a suitcase, or is built into a device which still functions normally. An example of the latter might be a one-shot laser built into a functional datapad. Disguising a weapon imposes a DM ranging from -1 to -4 on attempts to detect, notice or recognise it. Each -1 adds 50% to the cost of the weapon. In addition, the cost of any device used to disguise the weapon must be paid.

Stealth, Basic: Basic Stealth weapons are designed to minimise the chance of detection by scanners or observers. Physical and Emissions Signatures are both reduced by one level, and the weapon imposes DM-2 on attempts to detect it using scanners, observation or a physical search. A Basic Stealth weapon still looks like a gun, but has as many of its moving parts operating internally as possible and a minimum of projections to snag on clothing when being deployed. Basic Stealth adds 50% to the weapon's cost.

Stealth, Extreme: Extreme Stealth weapons are made from exotic materials which are hard to detect with conventional scanners; typically polymers and cultured bone. Ammunition must also be made from similar materials and use propellants with a different chemical signature to standard. For this reason Extreme Stealth weapons increase cost by 250%. Extreme Stealth ammunition costs 20 times standard, though many Extreme Stealth guns can fire standard ammunition, mainly for practice purposes. If used in the field, standard ammunition reduces the stealth benefits of this configuration. Extreme Stealth weapons reduce Physical and Emissions Signatures by three levels (two with standard ammunition) and impose DM-6 on attempts to detect the weapon by device, search or observation (DM-4 if using standard ammunition). Most Extreme Stealth weapons are handguns, known colloquially as 'body pistols', but other weaponry is possible. A disassembled Extreme Stealth rifle could be smuggled into a secure area with relative ease, and even carried intact such a weapon might evade detection by scans of the user's luggage.

Vacuum: Weapons intended for use in vacuum or a very low pressure atmosphere require specialist lubricants and slightly altered configuration to allow them to function. They usually include features such as an enlarged trigger guard to allow use with vacc suit gloves. Many standard snub pistols are not configured for vacuum work; they are designed for low-gravity security operations within a vessel – but more expensive models tend to include Vacuum modifications. Vacuum weapons can function equally well in space or an atmosphere. The modification increases receiver cost by 20%.

Projectile Weapon Ammunition

One big advantage of projectile weapons is the capability to deliver a range of ammunition types. The standard projectile used by most weapons is referred to as 'ball', referring to the musket balls used by archaic weapons. Unless a weapon is specifically designed for a specialist type of ammunition, damage is given for ball ammunition.

Projectile firearms are available in a wide variety of calibres, most of which are not interchangeable. There is some standardisation of calibres, but manufacturers – especially those on different worlds – may use differing standards. This can make getting the right ammunition for an exotic weapon quite difficult.

It is the ammunition a weapon is built around, rather than its configuration, which most strongly defines its capabilities. Other characteristics such as barrel length can be important but there is a limit to how much

performance can be modified by the weapon a given cartridge is fired through. For this reason the base range of a weapon is determined by its ammunition type – rifle bullets go further and remain accurate at longer distances than handgun rounds.

Ammunition costs are given in the *Traveller Core Rulebook* as the price for a fully loaded magazine or equivalent. When bought in larger quantities ammunition generally works out a lot cheaper. The price for ammunition is given here as the cost for a box of 100 rounds and sufficient additional items – such as batteries for a gauss weapon – to fire them.

Handgun Calibres

Handgun ammunition tends to be of a higher calibre (i.e. the bullet has a greater diameter) than rifle-type ammunition, but uses a shorter cartridge containing less propellant. Most handguns use a calibre ranging from around 6mm to 12mm, though larger and smaller weapons are possible. Most submachineguns are chambered for a handgun calibre round. Pistol-type cartridges penetrate armour very poorly, though they can be highly effective against unarmoured targets.

Light Handguns are typically in the 6-8mm range. Base Damage 2D. Cr60 per 100 rounds.

Medium Handguns are typically in the 9-10mm range. Base Damage 3D-3. Cr75 per 100 rounds.

Heavy Handguns are typically in the 11-12mm range. Base Damage 3D-1. Cr100 per 100 rounds.

- Light ammunition increases the weapon's base capacity by 20% and reduces receiver cost by 20%. Weight is reduced by 25%.
- Heavy ammunition decreases the weapon's base capacity by 20% and increases receiver cost by 20%. Weight is reduced by 15%. Heavy handguns gain the Bulky trait. Larger weapons using heavy handgun ammunition are Bulky unless they weigh more than 2kg or are compensated in some manner.

Shotguns

Shotguns and other smoothbore weapons generally use a short, fat cartridge not compatible with other weapons. The standard ammunition type for smoothbores is pellets rather than a single bullet, but most smoothbores can deliver a range of ammunition types. Smoothbore weapons have a base range of 100m with solid ammunition. Using pellet ammunition reduces base range to 25m.

Receivers set up for large-calibre smoothbore ammunition may be handguns, assault weapons or longarms, but are subject to additional considerations. Large-calibre handguns cannot use any form of detachable magazine – this would make the weapon too wide to hold in the hand. Repeaters – in the form of revolvers – or single shot weapons are possible. Assault weapons using large-calibre smoothbore ammunition are highly unusual but possible providing ammunition feed is not through the handgrip. The commonest form of receiver for large-calibre smoothbore ammunition is a longarm, though it is of course possible to pair this with a very short barrel.

Base ammunition capacity for any large-calibre smoothbore weapon is 10 shells for a longarm, 6 for an assault weapon and 4 for a handgun. Limitations for mechanisms such as a repeater are disregarded, but a weapon can be made compact or high-capacity which will affect maximum ammunition capacity. Longarms with a fixed magazine under the barrel are usually limited by the length of the weapon, with a capacity of 4-8 shells being common.

Combat shotguns are typically chambered for a calibre around 18-20mm in diameter, though they are usually rated by a system of 'gauges' based on the mass of a lead ball the diameter of the weapon's bore. The lower the gauge number, the more powerful the smoothbore weapon. Smoothbore weapons possess the Inaccurate trait to some degree and may perform poorly against armour whether firing a solid slug or a charge of pellets.

Recoil Effects

	Handgun	Assault Weapon	Longarm
Small Smoothbore	Bulky	—	—
Light Smoothbore	Very Bulky	Bulky	—
Standard Smoothbore	Not Possible	Very Bulky	Bulky
Heavy Smoothbore	Not Possible	Not Possible	Very Bulky

Small Smoothbores are typically in the 10-12mm range. Base Damage 3D-2. Cr100 per 100 rounds

Light Smoothbores are typically in the 14-16mm range. Base Damage 4D-4. Cr125 per 100 rounds

Standard Smoothbores are typically in the 18-20mm range. Base Damage 4D. Cr150 per 100 rounds

Heavy Smoothbores are typically in the 22-24mm range. Base damage 4D+4. Cr175 per 100 rounds

- Small ammunition increases the weapon's base capacity by 40% and reduces weight by 40%.
- Light ammunition increases the weapon's base capacity by 20% and reduces weight by 20%.
- Heavy ammunition decreases the weapon's base capacity by 20% and increases weight by 20%.

Smoothbores are relatively low-velocity weapons and begin with Penetration -1. This can be altered by using specialist ammunition or design choices.

Recoil tends to be a problem when using large-calibre ammunition of this sort. This is represented by the Bulky and Very Bulky traits alongside the recoil rules in this book (see page 32). The Recoil Effects table indicates what level of Bulky is imposed by various ammunition types in different receivers. Some are heavy enough to absorb the recoil and do not have Bulky but remain subject to the usual recoil rules if they are in use. Some weapons simply cannot handle large-calibre ammunition.

Smoothbores are cheaper to produce than rifles and similar projectile weapons, reducing receiver cost by 25%.

Rifle Calibres

Rifles and rifle-type weapons range considerably in calibre. They typically use a long cartridge and relatively small bullet to produce high muzzle velocity. This translates into accuracy and penetration. Assault rifles are typically chambered for an intermediate cartridge of around 5-6mm calibre, with heavier 'battle' rifles using a 7-8mm cartridge. Due to the trade-off between velocity and bullet mass it is possible to obtain similar performance with a large, slow bullet or a small fast one, so chamberings vary. Most sniping weapons are in the battle-rifle calibre range, but some use a heavier cartridge of up to 10mm or so calibre.

Anti-materiel rifles, anti-tank rifles and similar weapons designed to attack objects rather than people may use larger calibres. Typically these are in the 12-15mm range. Heavy anti-materiel weapons in the 18-20mm range have a higher base damage. Conversely, very light rifle calibres do exist, mostly for 'plinking' or hunting small game.

Light Rifle calibres range from 4-5mm. Base Damage 2D. Cr40 per 100 rounds.

Intermediate Rifle calibres range from 5-6mm. Base Damage 3D. Cr50 per 100 rounds.

Battle Rifle calibres range from 7-9mm. Base Damage 3D+3. Cr100 per 100 rounds.

Heavy Rifle calibres range from 10-11mm. Base Damage 4D. Cr250 per 100 rounds.

Anti-Materiel Rifle calibres range from 12-15mm. Base Damage 5D. Cr1500 per 100 rounds. Anti-materiel weapons gain the Bulky trait.

Heavy Anti-Materiel Rifles calibres range from 18-20mm. Base Damage 6D. Cr3000 per 100 rounds. Heavy anti-materiel weapons gain the Very Bulky trait.

- Light ammunition increases the weapon's base capacity by 20% and decreases weight by 40%.
- Intermediate calibre ammunition decreases receiver weight by 20%.
- Battle calibre ammunition decreases the weapon's base capacity by 20%.
- Heavy ammunition decreases the weapon's base capacity by 40% and increases receiver cost by 25%. Weight is increased by 10%.
- Anti-materiel ammunition decreases the weapon's base capacity by 60% and increases receiver cost by 150%. Weight is increased by 50%. It requires a light support weapon receiver at minimum.
- Heavy anti-materiel ammunition decreases the weapon's base capacity by 80% and increases receiver cost by 250%. Weight is increased by 100%. It requires a support weapon receiver at minimum.

OTHER PROJECTILE WEAPONS

Other ways of sending a projectile downrange exist. Some rely on similar mechanisms to conventional firearms but are suited to a particular role or environment. Others use entirely different ways to get their projectile moving, such as magnetic acceleration, but ultimately all these weapons rely on hurling a relatively small object with a great deal of kinetic energy.

Archaic Weapons

Archaic weapons such as black powder muskets and pistols are considered to be conventional firearms even if they use a different sort of initiation such as a flintlock or wheel-lock mechanism. Archaic firearms shoot a large-calibre ball or bullet, propelled by loose powder. Most such weapons are muzzle-loaders. A

typical black powder pistol uses a 14-15mm diameter ball; a musket typically has a calibre of 17-18mm. These weapons are smoothbores. Black powder rifles typically use a 15-16mm bullet and achieve a higher muzzle velocity at the price of slower loading. However, damage is much the same due to the trade-off between weight and velocity.

Black Powder pistols have base Damage 2D-3. Cr10 per 100 rounds.

Black Powder muskets and rifles have base Damage 3D-3. Cr25 per 100 rounds.

All black powder and similar weapons have the Slow Loader trait, typically with a score of 8 for smoothbore longarms and 12 for rifled weapons. All such weapons have Physical Signature (very high), which cannot be reduced by design or accessories. Most have Inaccurate and Unreliable.

Archaic weapons typically have a very short effective range as their projectiles are not aerodynamic and start with a low muzzle velocity. Range for an archaic weapon is based on half the range of the equivalent conventional weapon, down to a minimum of 5m.

Archaic weapons have a very low muzzle velocity and begin with Penetration -2.

Low-Recoil Weapons

More commonly known as 'snub' weapons, low-recoil special-purpose weaponry is a family of large-calibre, low-velocity weapons designed for use in low gravity. The use of a relatively heavy but low-

velocity projectile produces reasonable stopping power without generating heavy recoil. This gives the weapon the Zero-G trait, along with Inaccurate (-2).

Snub Weapons are typically chambered for a short 10mm cartridge not compatible with other weapons. Base Damage 3D-3. Cr200 per 100 rounds.

They usually perform poorly against armour and other hard surfaces, but specialist ammunition can offset this though may cause the weapon to lose the Zero-G trait.

Snub Weapons are relatively low-velocity weapons and begin with Penetration -1. This can be altered by using specialist ammunition or various design choices.

Rocket Projectiles

Some weapons use rocket projectiles rather than conventional bullets. These have the advantage of producing very little recoil but are ineffective at short ranges until the projectile gains velocity. A rocket projectile weapon does the same damage as its conventional equivalent, but is counted as a Zero-G weapon. Rocket projectiles do only 1D of damage if they strike a target within 10m. They tend to be inaccurate, but not excessively so.

Rocket projectiles cost twice as much as conventional firearm ammunition of the same calibre. Weapons that use them possess the Zero-G trait. The pressures experienced by 'accelerator' weapons – those that use rocket-propelled projectiles – are low compared to conventional firearms. Weapons can be more lightly built, halving receiver and barrel weight. Costs remain unchanged.



Conventional Firearms

Type	Base Damage	Cost per 100 rounds	Base Capacity Variation	Base Range	Traits	Signature	Notes
Archaic Pistol	2D-3	Cr10	—	20m	Unreliable (2), Slow Loader (6)	Physical (very high)	Penetration -2
Archaic Smoothbore*	3D-3	Cr25	—	40m/10m	Unreliable (2), Slow Loader (8)	Physical (very high)	Penetration -2
Archaic Rifle	3D-3	Cr25	—	150m	Unreliable (2), Slow Loader (12)	Physical (very high)	Penetration -2
Light Handgun	2D	Cr60	+20%	40m	—	Physical (low)	—
Medium Handgun	3D-3	Cr75	—	50m	—	Physical (normal)	—
Heavy Handgun	3D-1	Cr100	-20%	60m	—	Physical (normal)	—
Small Smoothbore	3D-2	Cr100	+40%	60m/15m	Inaccurate (-2)	Physical (high)	Penetration -1
Light Smoothbore*	4D-4	Cr125	+20%	80m/20m	Inaccurate (-2)	Physical (high)	Penetration -1
Standard Smoothbore*	4D	Cr150		100m/25m	Inaccurate (-2)	Physical (high)	Penetration -1
Heavy Smoothbore*	4D+4	Cr175	-20%	120m/30m	Inaccurate (-2)	Physical (high)	Penetration -1
Light Rifle	2D	Cr40	+20%	150m	—	Physical (low)	—
Intermediate Rifle	3D	Cr50	0	250m	—	Physical (normal)	—
Battle Rifle	3D+3	Cr100	-20%	300m	—	Physical (normal)	—
Heavy Rifle	4D	Cr250	-40%	400m	—	Physical (high)	—
Anti-Materiel	5D	Cr1500	-60%	1000m	Bulky	Physical (extreme)	—
Heavy Anti-Materiel	6D	Cr3000	-80%	1200m	Very Bulky	Physical (extreme)	—
Low-Recoil Special-Purpose (Snub)	3D-3	Cr150	-20%	40m	Inaccurate (-2), Zero-G	Physical (normal)	Penetration -1
Rocket	As type	x2	-40%	250m	Inaccurate (-1), Zero-G,	Physical (normal)	
Standard Gauss	4D	Cr50	—	600m	—	Emissions (normal)	Penetration +2
Small Gauss	3D	Cr50	—	100m	—	Emissions (low)	Penetration +2
Enhanced Gauss	5D	Cr50	—	650m	—	Emissions (high)	Penetration +2

* Values assume the smoothbore weapon is firing a solid projectile such as a musket ball or rifled slug from a combat shotgun. Pellet ammunition changes the weapon's characteristics. Ranges are given for solid and pellet ammunition.

These projectiles can attain high velocities if they travel far enough, and range is not limited by barrel length. They begin with Penetration 0, which can be altered by specialist ammunition or design choices. Accuracy is also poorer than conventional firearms; accelerator weapons have the Inaccurate trait, usually with a score of -1.

Gauss Weapons

Gauss projectiles are typically smaller than conventional bullets but achieve a higher muzzle velocity due to electromagnetic acceleration. A standard gauss weapon typically uses needles with a calibre of 4mm. Performance is a little better than a standard projectile firearm in the class; a gauss pistol typically does 3D damage and a gauss rifle does 4D damage. Gauss weapons become available at TL12, though the projectiles can be manufactured at lower TLs.

For simplicity, it is assumed that gauss weapons have a battery in the magazine which supplies the power necessary to accelerate the rounds contained within. Acceleration takes place within the receiver, over a very short distance, with the barrel serving mainly to guide and stabilise the round.

Standard Gauss propulsion units suitable for use in a longarm become available at TL12 and have base Damage 4D. Cr50 per 100 rounds.

Small Gauss propulsion units suitable for a handgun become available at TL13 have base Damage 3D. Cr50 per 100 rounds.

Enhanced Gauss propulsion units become available at TL14 and have base Damage 5D. Cr50 per 100 rounds.

Gauss Shotguns hold the same amount of projectiles as an equivalent gauss weapon, but they are packed into bundles of 16-24 depending on the weapon type. Ammunition capacity is effectively reduced by 75%. Gauss shotguns use small gauss ammunition but deliver +2 damage per dice; typically this is 3D+6.

Gauss weapons have an intrinsic armour-piercing capability due to their high muzzle velocity. This gives them base Penetration +2. Gauss propulsion doubles the cost of a weapon and increases weight by 25%. Due to the method of propulsion used in gauss weapons, damage is not reduced by short barrels in the manner of high-velocity projectile weaponry.

* Values assume the smoothbore weapon is firing a solid projectile such as a musket ball or rifled slug from a combat shotgun. Pellet ammunition changes the weapon's characteristics. Ranges are given for solid and pellet ammunition.

SECONDARY WEAPONS

A secondary weapon can be fitted, usually under the barrel. Most commonly this is a grenade launcher or shotgun, but other configurations are possible. A secondary weapon mounting costs and weighs 10% of the secondary weapon's values. There is no need to provide a stock for a secondary weapon but it must have a barrel, receiver and any furniture the designer requires. A secondary weapon is separate from the primary, and is used independently; a Traveller can fire their assault rifle or the shotgun mounted under it, but not both at the same time unless a complex joint-triggering mechanism has been contrived.

Multi-Barrel Weapons

A weapon can have multiple barrels, which can be achieved in different ways. For this reason multi-barrel configuration is not always considered a receiver feature. A multi-barrel configuration can either be complete or partial. Complete barrels include a breech, and sometimes a firing mechanism as well. If so, all barrels can be discharged simultaneously at the same target or fired independently. This is commonest with double-barrelled shotguns and similar weapons. Barrels of a complete multi-barrel weapon do not have to be matched – for example a hunting weapon might have a shotgun barrel and a rifle barrel, allowing the user to deal with whatever breaks cover. Alternatively, a combat handgun might have a separate barrel with a one-shot flashbang discharger underneath the main muzzle, for a non-lethal but very authoritative warning shot.

A complete multi-barrel weapon adds 10% to the cost and weight of the receiver per extra barrel. Each barrel is bought for its normal cost but each barrel after the first adds only half its normal weight. Each additional barrel reduces Quickdraw by -1.

Partial multi-barrel weapons have a firing chamber for each barrel but share a firing mechanism. This may be aligned with each barrel in turn, for example with a rotating firing pin, or the barrels may be aligned in turn in the manner of a 'pepperbox' pistol. This configuration is unusual but used in a few specialist weapons. Partial multi-barrel configuration does not add to the cost and weight of the receiver, but each additional barrel must be purchased.

Rotary Weapons and Multi-Mounts

Rotary weapons have multiple barrels which rotate in turn to align with the firing chamber. This allows a high rate of fire to be maintained as each barrel has a chance to cool whilst another is firing. Mechanical

rotary weapons, such as a gatling gun, can be used to create a rather crude equivalent of a machinegun. A mechanical rotary weapon begins with a nominal Auto 1, which can be increased to a maximum of half the number of barrels on the weapon. Thus a 6-barrelled gatling gun can deliver the equivalent of Auto 3 with some vigorous cranking.

A multi-barrel weapon combined with a powered feed system allows an automatic, RF or VRF weapon to dissipate heat whilst it is firing. Each barrel after the first removes one point of Heat from the weapon per round, whether it is firing or not.

An alternative way to deliver increased firepower is to create an 'organ gun' with multiple complete weapons mounted together. At low Tech Levels these are often slow-loading weapons, creating a powerful one-shot effect. An 'organ gun' – as these weapons are called – is considered to have Auto 1 for every full four barrels firing simultaneously, so a 12-barrel organ gun made out of primitive muskets delivers an Auto 3 attack when fired but then requires considerable time for reloading. More advanced weapons mounted in this manner can make such an attack every round if they reload quickly enough. This is bulky and inefficient, but sometimes useful. If the weapons mounted in this manner are capable of automatic fire, their collective effect is to increase their Auto score by +1 for every additional weapon; a triple-mounting of Auto 3 machineguns can be treated as a single weapon with Auto 5.

Multi-mounted weapons with a high Auto may be treated as RF or VRF weapons. A twin-mounted weapon with Auto 4+ can be considered a single RF weapon. Each additional weapon beyond two adds +1 to the Auto score, so a quad mount of Auto 4 machineguns can be considered an RF weapon with Auto 6. Likewise, twin-mounted weapons with Auto 6+ can be considered a VRF weapon, and adding more weapons on the same mount adds +1 to Auto for each weapon after the second.

Weapon-Mounted Launchers

Some launcher systems are essentially secondary weapons fitted to a primary. As with other secondary weapons the fittings cost 10% of the cost and weight of the launcher, which must be designed separately from the primary weapon. Design notes for grenade launchers and similar weapons are found on page 53.

Other launchers are more basic. An under-barrel rail can be used to launch a one-shot rocket propelled grenade, or one can be fitted onto a muzzle discharger. The disadvantage of the latter is that the

primary weapon cannot be used with the grenade in position. Cup dischargers for conventional grenades are also occasionally used, but these require the use of a blank rifle cartridge to propel the grenade, and again prevent the primary weapon from being fired when a grenade is in place.

An under-barrel rail weighs 0.1kg and costs Cr100. It does not affect Quickdraw unless a grenade is in place, in which case it imposes a penalty of -3.

A muzzle discharger weighs 0.05kg and costs Cr75. It does not affect Quickdraw unless a grenade is in place, in which case it imposes a penalty of -3 and the first shot must be made with the grenade. Rocket-propelled grenades can be used to make a direct attack so can be effective Quickdraw weapons.

A cup discharger weighs 0.15kg and costs Cr50. It imposes a -2 penalty on Quickdraw, increased to -4 if a grenade is in place, and the grenade must be used for the initial shot. Since this is inevitably an indirect attack, the chances of success are minimal. However, it may matter whether or not a grenade was delivered before the user was shot.

AMMUNITION CAPACITY

As already noted, the base ammunition capacity for a weapon indicates a standard magazine or feed device size. It is determined by the ammunition type and any features the receiver might have, such as being a High Capacity weapon. Actual ammunition capacity for the weapon can be set at any amount up to 150% of the base value. There are advantages to reducing ammunition capacity, in terms of saved weight and cost, though it is quite rare to take capacity below 50% of base.

The capacity of the weapon determines how many rounds are carried in a standard magazine, which fits into the weapon without sticking out to an awkward degree. Extended magazines can be created of course, but these tend to be clumsy. Any increase over 150% requires such a device.

- Each 10% increase in ammunition capacity adds 5% to the weight of a loaded weapon and 10% to the cost of the receiver.
- Each 10% reduction in ammunition capacity reduces loaded weight by 5% and reduces the receiver cost by 5%.

BARREL FEATURES

As a general rule, a longer barrel translates to higher muzzle velocity and therefore longer range with greater accuracy at a distance. This generally also correlates for energy weapons such as lasers and plasma guns. A barrel of standard length is assumed within the weight and cost of the receiver. Performance (in terms of range and damage) with such a barrel is as noted for the ammunition type.

There is a limit to how long a barrel can be added to a given weapon before it becomes ridiculous. A carbine-type barrel could be added to a handgun receiver to create a pistol-calibre carbine – such weapons have existed historically – but a weapon of this sort is as awkward to carry as an actual carbine, and less effective.

The effect a given length of barrel has on muzzle velocity (and thus range, accuracy and damage) depends on the ammunition type. Relatively low-velocity rounds (handgun, snub weapon and smoothbore ammunition) require less barrel length to reach maximum velocity and do not benefit from a very long barrel. Conversely, high velocity rounds lose much of their effectiveness if not fired from a barrel of suitable length. For high-velocity ammunition – this typically means rifle calibres – damage is reduced by one dice for a Minimal, Short or Handgun barrel. This is applied before other damage-based effects are considered.

Minimal: A Minimal barrel barely extends past the end of the firing chamber. All damage dice are converted to D3s; e.g., a standard rifle calibre weapon with a Minimal barrel reduces damage from 3D to 3D3. A weapon with a Minimal barrel grants the user DM+8 during a Quickdraw. Effective range for all weapons with a Minimal barrel is reduced to 5m, and effects that rely on high-velocity, such as non-explosive armour-piercing effects, are annulled. A Minimal barrel has negligible weight and cost, but increases Physical Signature by two levels when the weapon is fired and reduces Penetration by -2.

Short: A Short barrel is typically used on handguns intended for concealed carry. Effective range is reduced by 90% and non-explosive armour piercing effects are lost. A Short barrel weighs and costs 10% of receiver values. A weapon with a Short barrel grants the user DM+6 during a Quickdraw. A Short barrel increases Physical Signature by one level when the weapon is fired and reduces Penetration by -1.

Running out of Dice

Some modifications reduce the number of dice damage a weapon delivers. If a weapon has only 1D left and must reduce by one dice, damage drops to D3. Another nominal 1D reduction takes damage down to 1 point, and the next reduction drops damage to zero.

Handgun: A standard Handgun barrel reduces range by 80% for all ammunition types except rocket projectiles. A Handgun barrel costs 15% of receiver price and weight is 20%. High-velocity weapons such as rifles using a Handgun barrel also reduce damage by one dice. A Handgun barrel grants the user DM+4 during a Quickdraw. A Handgun barrel reduces Penetration by -1.

Assault: An Assault barrel is typically found on submachineguns or short combat shotguns. Cost for an Assault barrel is 20% of base receiver cost, and the barrel is 30% of base receiver weight. High-velocity weapons such as rifles using an Assault barrel reduce damage by one dice. Thus a rifle normally doing 3D+3 damage which has been fitted with an Assault barrel, reduces damage to 2D+3. Base range is reduced by 50%. A weapon with an Assault barrel grants the user DM+2 during a Quickdraw.

Carbine: The definition of a carbine is rather vague, with general connotations of a short, light longarm. A rifle-type weapon using a Carbine barrel must reduce damage by 1 point per two full dice of base damage. Base range is reduced by 10%. A Carbine barrel costs 25% of receiver price and adds 40% weight.

Rifle: A standard Rifle barrel produces normal performance for all weapons. Cost is 30% of receiver price, and the barrel adds 50% of receiver weight to the weapon.

Long: A Long barrel adds 75% to receiver weight and 50% to cost. Range for high-velocity weapons is increased by 10%. Additionally, a Long barrel reduces the negative DM for range by one if the firer is using a scope.

Very Long: A Very Long barrel adds 100% to receiver weight and 100% to cost. Range for high-velocity weapons is increased by 25%. Additionally, a Very Long barrel reduces the negative DM for range by two if the firer is using a scope.

Barrel Lengths

Length	Cost	Weight	Range Modification	Other Effects
Minimal	—	—	5m	Physical Signature +2 levels, Penetration -2. Reduce damage by 1 dice for high-velocity weapons.
Short	10%	10%	-90%	Physical Signature +1 level, Penetration -1. Reduce damage by 1 dice for high-velocity weapons.
Handgun	15%	20%	-80%	Penetration -1. Reduce damage by 1 dice for high-velocity weapons.
Assault	20%	30%	-50%	—
Carbine	25%	40%	-10%	—
Rifle	30%	50%	—	—
Long	+50%	+75%	+10%	—
Very Long	+100%	+100%	+25%	—

Heavy Barrel: A Heavy barrel dissipates heat better than a standard one. This is important when undertaking sustained fire, as heat build-up can damage a weapon or cause a malfunction. A Heavy barrel doubles the number of rounds in which sustained fire can be maintained before malfunctions become possible. Any barrel length can be specified as Heavy, doubling its weight and price. A Heavy barrel reduces Quickdraw by -1.

FURNITURE

The term furniture refers to parts of a weapon such as its stock, grips and the like. Typically longarms have a fixed solid stock, assault weapons tend to have a light-weight stock which may or may not fold, and handguns do not have one at all. Details like whether the foregrip on a rifle is vertical or a traditional forearm are up to the designer and do not affect cost or weight.

Stockless: A weapon with no stock at all cannot be fired from the shoulder and is difficult to steady. Aimed fire at ranges beyond 25m is subject to DM-2. A Stockless weapon may have a mounting for a stock, at negligible cost and weight, in which case it is covered by a butt cap until a stock of some kind is mounted. A Stockless longarm or assault weapon gains +2 to Quickdraw.

Folding Stock: A folding or telescoping stock reduces weight at the cost of being less effective. When deployed, a Folding Stock allows aimed fire at ranges beyond 25m with DM-1. When the stock is not deployed the weapon counts as Stockless. A Folding Stock adds 5% to the weight and 15% to the cost of the weapon.

Full Stock: A Full Stock is standard on most longarms and can be added to a handgun to create a carbine of sorts. Usually such stocks are detachable. A Full Stock adds 10% to the weight and 10% of the cost of the weapon.

Modularisation: Any weapon can have one component that can be detached at no cost or weight, such as a detachable stock on a combat shotgun. Full Modularisation allows multiple parts to be swapped around quickly and easily with only basic tools. For example, a Traveller expecting close combat might remove the barrel and stock of their rifle, swapping the barrel for an assault-length one. Modularisation adds 10% to the weight and 20% to the cost of the weapon.

Bipod: Any weapon with a rifle-length or longer barrel can be fitted with a Bipod. This takes one significant action to deploy and position the weapon, after which it grants DM+1 to attack rolls at ranges beyond 50m. A Bipod reduces Quickdraw by -4 unless the weapon is already on target. Bipods cost 10% of receiver price and add 20% of receiver weight to the weapon. A detachable Bipod has all these characteristics but costs 15% of receiver price.

Support Mount: Any weapon can have a Support Mount rather than a stock. A Support Mount usually takes the form of a tripod but could have other configurations. Support Mounts typically use the same attachment system as many vehicle mountings, allowing a weapon to be dismounted from a vehicle and set up on a tripod if necessary. A Support Mount weighs as much as the receiver of the weapon and costs 25% of its price.

Small weapons such as handguns and shotguns can be placed on a Support Mount for remote-controlled firing or as booby traps. This makes the weapon unusable in normal combat.

Improvised Support Weapons

Most longarm-type weapons can be fitted to a pintle mount for support work, and indeed the majority of pintle mounts have a universal attachment that can take almost any weapon. An assault rifle fed from a drum magazine could make a useful improvised support weapon, but not for long. Sustained fire will overheat the weapon and there is no provision for a quick barrel change. Weaponry intended for sustained fire requires either a cooling system or the ability to swap barrels in a matter of moments.

Furniture

Item	Cost	Weight
No Stock	—	—
Folding Stock	15%	5%
Full Stock	10%	10%
Modularisation	20%	10%
Bipod	10%	20%
Detachable Bipod	15%	20%
Support Mount	25%	100%

ACCESSORIES

Accessories can usually be swapped around at will. For example, a Traveller might carry their Personal Defence Weapon with a convenient 12-round magazine inserted, allowing it to be worn in a holster, but have a pair of 35-round combat magazines available to be swapped in once the weapon is deployed. Most other accessory-swapping actions can be as convenient as reloading, providing the item is intended for quick release. Some accessories, such as powerful scopes, cannot be mounted this way as they require very precise calibration. Such accessories require a workshop to be removed or added, though the process is usually simple.

Suppressors

It is not normally possible to make a firearm silent, but various mechanisms are available to reduce the signature of the weapon to the point where it might

not be noticed, or may not be recognised as a gunshot. Whatever the specifics of their operation these accessories are referred to as suppressors.

Suppressor, Basic: A basic suppressor reduces weapon flash and noise a little without greatly affecting its performance. A basic suppressor reduces Quickdraw by -2 and Physical Signature by one level. It costs 50% of the weapon's receiver price. A basic suppressor imposes Inaccurate -1 and reduces effective range by 25%. A basic suppressor adds 0.2kg to the weight of the weapon.

Suppressor: A standard suppressor can be quite bulky and heavy. It reduces Quickdraw by -3 and Physical Signature by 2 levels. A suppressor costs 100% of the weapon's receiver price. A standard suppressor imposes Inaccurate -1 and reduces effective range by 50%. It also reduces Penetration by -1. A standard suppressor adds 0.3kg to the weight of the weapon.

Suppressor, Extreme: An extreme suppressor is a heavy item, adding significantly to the weapon's front-end weight and overall length. Quickdraw is reduced by -4 and Physical Signature by 3 levels. An extreme suppressor imposes Inaccurate -1 and reduces effective range by 75%. Penetration is reduced by -2 as the suppressor reduces muzzle velocity significantly. An extreme suppressor costs 200% of the weapon's receiver price. An extreme suppressor adds 0.5kg to the weight of the weapon.

Ammunition Feed Devices

Ammunition is used quickly in a firefight, and there is a limit to how much can be carried. A typical loadout for a combat soldier is one magazine in their weapon and six more carried in pouches. Those not carrying much else might increase this loadout, but when combined with all the other gear a typical infantry soldier must lug about there is not much capacity for more. A Certain Kind Of Traveller might write down on their sheet they are carrying 800 magazines for their gauss rifle, but it is not physically possible to carry much more than a dozen ordinary magazines. Their bulk must be considered along with weight.

A magazine-fed weapon will come with a modest amount of feed devices; belt-fed weapons will have a supply of links, and so forth. Mercenaries do not, as a rule, go to the gun shop and buy a few loaded magazines. They typically purchase ammunition in crates and load up magazines, belts and other feed devices as needed. Thus the 'magazine' costs found in the *Traveller Core Rulebook* and *Central Supply Catalogue* do not

generally apply to mercenaries. Even when buying in small quantities, military units do not procure their ammunition like a bunch of yahoos in town waiting for their free trader to be unloaded.

As a general rule, magazines and feed devices can be bought individually at the prices shown, or in a pack of 6 with a 10% discount. Crates generally hold 100 or more magazines, and typically bought at a discount of around 30% plus whatever the unit's procurement officer can bargain for. This does not include ammunition.

Fixed Magazines: Fixed magazines are part of the weapon and, by definition, cannot be detached. They make the weapon slower to load; instead of taking one minor action to change a magazine, the user must usually feed ammunition in one round at a time. Each minor action allows the user to get D3 rounds into the weapon, and in many cases it can be fired as soon as there is any ammunition at all. If using a reload-assistance device such as a stripper clip, en-bloc clip or speedloader, 2 minor actions are sufficient to place the contents of the loading device into the weapon. Such devices typically cost 1% of the weapon's purchase price. A fixed magazine reduces cost and weight of the receiver by 10%.

Standard Magazines: A weapon is supplied with a reasonable amount of magazines or other feed devices, usually 2-4 for most weapons. A military unit might need more than this, and will typically purchase significant quantities at a time. A standard magazine holds whatever the ammunition capacity of the weapon has been determined to be, and does so without being unduly clumsy. If bought singly it will typically cost 1% of the weapon's purchase price.

Extended Magazines: These are available for most weapons that use a detachable 'box' magazine. They may be longer, wider or use a 'casket' configuration. An extended magazine can hold up to 50% more ammunition than standard, but sticks out of the weapon to a considerable degree. Extended magazines impose DM-2 during a Quickdraw. An extended magazine costs twice the price of a standard one.

Drum Magazines: Drum magazines can hold up to 2.5 times the ammunition of a standard magazine. They are, however, bulky and often noisy when carried. Drums make the weapon unwieldy and difficult to aim, and even at high Tech Levels they are prone to jam, imposing the Inaccurate (-1) and Hazardous (-1) traits. They also impose DM-6 during a Quickdraw; a fixed drum magazine, as used in some shotguns and grenade launchers, does not suffer from this problem but must be manually

reloaded in place. Drum magazines cost five times as much as standard ones. A fixed (or 'semi-internal') drum costs 5% of the weapon's receiver cost.

Belts: A belt can in theory hold as much ammunition as the user wants, and a loader can keep adding belt segments whilst the gunner is firing. This is not much of a problem when the weapon is emplaced or mounted, and imposes no penalty. However, a belt-fed weapon can be difficult to use on the move unless some kind of belt-holder and guide is available. All belt-fed weapons suffer from the Inaccurate (-1) trait due to the motion of the belt. An additional DM-2 applies when firing on the move unless a suitable belt-holder is in place. Belts also impose DM-8 during a Quickdraw.

Clips, Speedloaders and Cassettes: A variety of devices are available to get ammunition into a weapon with a fixed magazine quickly. In some cases this requires physical transfer of the ammunition either all at once in the manner of a speedloader for a revolver or in rapid succession in the manner of a stripper clip. Such devices cost around Cr5 and hold enough ammunition to reload the weapon once. Some weapons use pre-packed ammunition in which the feed device is no more than a lightweight container which is discarded once empty. Such a device costs Cr10 plus the price of the ammunition inside. In some cases, ammunition cassettes of this type are shipped directly from the factory in loaded condition and cannot be reloaded outside the supplier's own facilities. This practice is generally disliked by mercenaries as it ties them to the manufacture's prices and can cause problems if ammunition runs short.

The weight of a loaded feed device is included in the weight given for all weapons. Additional magazines, speedloaders, stripper clips and the like typically weigh around 0.15kg for handguns and 0.5kg for intermediate-calibre rifles. A 50-round length of ammunition belt for a support weapon firing Battle Rifle calibre ammunition typically weighs 1.5kg. It is not always necessary to calculate the precise weight of ammunition carried, but if the Travellers are trying to get away with carrying thousands of rounds they should be required to account for it.

Sighting Devices

Weapons almost always come with built-in iron sights; typically this a simple front blade and rear notch type, adjustable for range. At TL6 and above, it is usual for military weapons to have a basic optical sight as standard. This may have low magnification to assist in aiming and is typical of the 'red dot' reflex type. These sights are rugged enough to survive being run over by a

truck – if the rifle still works so will its sight. A reflex or basic combat sight comes as standard on most military longarms, and does not add cost or weight. It provides a flat DM+1 on aimed or snap shooting but a positive Quickdraw is halved if the firer takes time to align even such a simple sight. For this reason many ‘point soldier’ and close-quarters weapons are not fitted with optical sights.

Mounting any type of scope (but not a laser pointer) on a weapon imposes an additional -2 on its Quickdraw.

Scope: A typical optical scope offers variable magnification of 1.5x, 2.5x and 4x, allowing personnel to engage in precision fire out to considerable ranges. A scope of this type costs Cr50 and weighs 0.2kg. It gives the weapon the Scope trait.

Long-Range Scope: Long-range scopes are available with optical magnification up to 50x, though this is rare since most personnel cannot shoot accurately at such ranges. A long-range scope costs Cr500 and weighs 0.5kg. It gives the weapon the Scope trait and reduces any negative DM for range by -2.

Low-Light Scope: A low-light scope negates the effects of near-complete darkness, though it needs at least a little light to function and cannot see through smoke or other obscurants. A low-light scope is normally combined with a standard scope into one unit, though sometimes it may be configured as a standalone unit. In either configuration it costs Cr150 and weighs 0.4kg.

Thermal Scope: A thermal scope can detect heat, so can function in complete darkness or pick out well camouflaged targets. It does not provide any positive DM to hit, but grants DM+4 to Recon checks to spot concealed targets, locate the source of a shot, and so forth. They do not allow Travellers to see through walls.

Thermal scopes are usually combined with a standard scope in a switchable configuration. It costs Cr250 and weighs 0.25kg.

Combination Scope: At the cost of some bulk a combination scope offers the benefits of standard, low-light and thermal scopes. This device costs Cr400 and weighs 0.5kg.

Multispectral Scope: A more advanced version of the combination scope uses a wider segment of the electromagnetic spectrum and offers enhanced image processing to assist target identification. A multispectral scope offers DM+6 to Recon checks to spot targets and DM+1 to attack rolls at all ranges, in addition to the Scope trait. It costs Cr600 and weighs 0.5kg.

Laser Pointer: A laser pointer grants DM+1 to attack rolls at ranges out to 50m. Despite some slight bulk and a typical weight of 0.1kg, it does not affect Quickdraw when in use. A laser pointer costs Cr200.

Integrated Sighting System: An integrated sighting system (ISS) takes information on sensors mounted on a weapon and projects them on to goggles or a visor. The output can be adjusted by the user to a range of preferences, or can auto-regulate in order to penetrate smoke, see in the dark, and filter out bright flashes whilst operating in low-light mode. An ISS costs Cr500 for a set of sensors on the weapon and a display device, and offers all benefits of a multispectral scope even when the weapon is being hip-fired. Typical weight is 0.4kg.

Holographic Sights: A holographic sight replaces physical optics, using a sensor on the barrel of the weapon and displaying what is effectively a holographic scope, aim point or other sighting device. Mode and magnification are usually controlled by pre-set buttons, sliders or

Sighting Devices

Device	TL	Cost	Weight
Scope	5	Cr50	0.2kg
Long-Range Scope	6	Cr500	1kg
Low-Light Scope	6	Cr150	0.4kg
Thermal Scope	6	Cr250	0.5kg
Combination Scope	7	Cr400	0.5kg
Multispectral Scope	9	Cr600	0.5kg
Laser Pointer	8	Cr200	0.1kg
Integrated Sighting System	10	Cr500	0.4kg
Holographic Sight	12	Cr500	0kg

vernier dials in a convenient location on the weapon. A holographic sight can also take data from other sources in the same manner as an ISS. The device costs Cr750 but is of negligible weight.

OTHER ACCESSORIES

A variety of miscellaneous accessories are available for most weapons. Some are more useful than others.

Bayonet Lug: Military longarms are assumed to have 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. A bayonet lug, whether improvised in a workshop or fitted to the weapon, adds no weight and is of negligible cost. Once the bayonet is fitted it imposes DM-2 to Quickdraw unless the attack is being made with the bayonet itself.

Bling: Weapons can be decorated, gilded or festooned with fairy lights if the user really wants. Some owners may wish to impress or intimidate with their weapons; others just like to show off. Professional mercenaries generally prefer to camouflage any weapon they take into the field, though there is perhaps some value in a gold-plated autopistol used to intimidate potential hostiles. Any amount of bling can be added, though objects swinging about on little chains dangling from a weapon will make accurate shooting difficult and a shiny or brightly coloured weapon may give away a position. The referee should let Travellers spend as much as they like on bling, but it will cause problems in the field – not least of which is the ridicule of more professional soldiers.

Flashlight: A high-powered flashlight can be fitted under the barrel of most weapons. Cost is typically Cr50 for a sturdy example with good battery life. A flashlight adds front-end weight and reduces Quickdraw by -2.

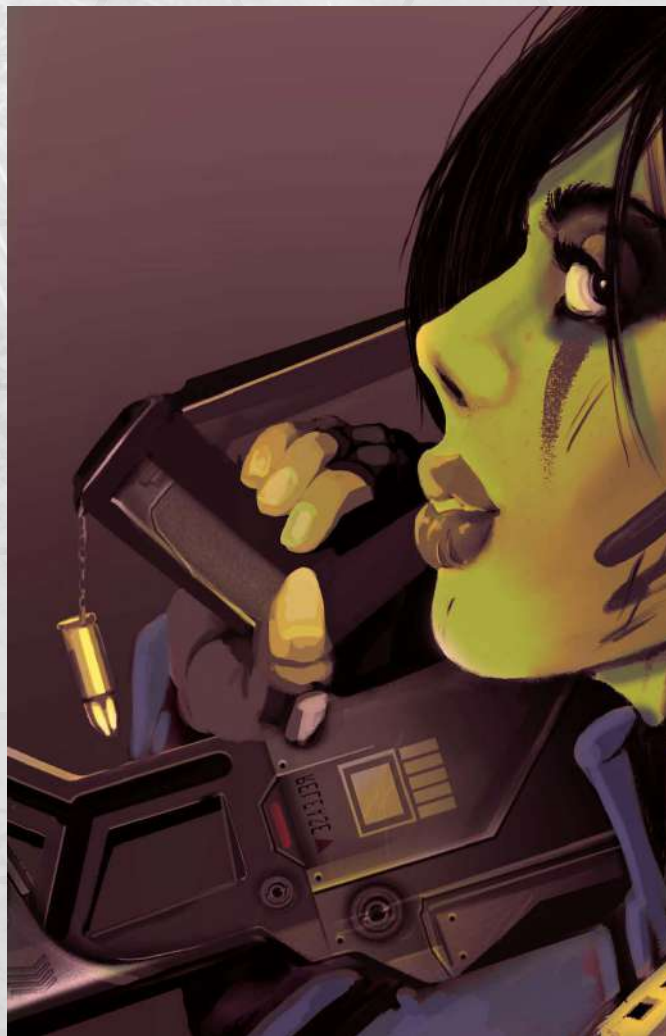
Gravitic Support: From TL12 upwards, gravitic support is available. This reduces a Very Bulky weapon to Bulky and eliminates the Bulky trait entirely. A gravitic support unit weighs 3x the weight of the weapon's receiver when switched off, but effectively eliminates the weapon's weight when activated. Gravitic support costs Cr2500 per kg of the weapon.

Gun Camera: From TL6 upwards a small camera can be fitted to a longarm or assault weapon, with examples small enough to fit on almost any weapon available from TL8. TL6-7 cameras can be a little bulky and reduce Quickdraw by -2. TL8+ examples may be integrated with sights or kept separate, often carried on a rail under the barrel. These are light enough not to affect Quickdraw. All versions cost Cr75.

Intelligent Weapon: At TL11, a small processor located somewhere in the weapon effectively adds a Computer/0 for a cost of Cr1000. At TL13, Computer/1 is available for Cr5000.

Secure Weapon: Available from TL10 upwards, a secure weapon requires some form of authentication before it will function. This may be a DNA check, radio signal, voice command or almost any other form of authorisation. Adding a security check costs Cr100 and does not add any weight.

Stabilisation: From TL9 upward, weapons can be gyrostabilized. A gyrostabiliser weighs 20% of the weapon's receiver weight and costs Cr300. A gyrostabiliser offsets an aiming DM up to -2 caused by movement or a poorly balanced weapon. This means it is possible to conduct aimed fire whilst moving, though only at a steady, careful pace. If a weapon is Bulky or Very Bulky due to recoil (not actual weight or bulk), a gyrostabiliser reduces Very Bulky to Bulky and eliminates the Bulky trait entirely.





Example: Personal Defence Weapon

Personal Defence Weapons (PDWs) vary in design but are similar in function. A PDW is typically a compact high-firepower weapon intended to give advantages over a handgun in emergency self-defence situations. Some are essentially overgrown handguns, some are small submachineguns and others use entirely different concepts. A shortened, stockless combat shotgun can fulfil the PDW role quite well – it is quick into action, hits hard and is easy to carry, but suffers from a small ammunition supply. These are all characteristics of a typical PDW no matter how the design requirements are met.

A mercenary unit decides to create a custom-designed PDW to be carried by its support gunners, vehicle crews and other personnel whose role is not direct short-range combat with the enemy. The unit chooses 7.65x21mm ammunition, a common light-pistol calibre, to base the weapon around. The receiver chosen is an Assault type. These initial choices create a weapon with a mass of 1kg, modified to 0.75 kg because the weapon uses light handgun ammunition and has a fully-automatic receiver. Base damage is 2D. The designer decides this will be a fully-automatic weapon, pushing the cost up from Cr200 to Cr240 and granting Auto 3.

Base ammunition capacity for an Assault weapon is 20 rounds, increased to 24 by use of light handgun ammunition. However, when the designer begins choosing features for the weapon this may be altered. The Travellers decide they want a compact weapon, which adds 25% to the cost and reduces mass by 10%.

This reduces ammunition capacity by 20% of the new total of 24, or 4.8 rounds. Rounded to 5, ammunition capacity is now 19 rounds.

The Travellers then decide to reduce ammunition capacity by 30%, down from 19 to 13, since there are commercially available light handgun magazines available in this sizing. Each 10% reduction in ammunition capacity reduces loaded weight by 5% and reduces the weapon's cost by 5%. The Travellers want a higher Auto trait for their PDW, selecting an increase from 3 to 4. This adds 10% cost and 5% weight.

They now have a receiver for their weapon. Its raw cost is Cr420.75 and weight is 0.6425kg. With the referee's approval these values are rounded off to Cr420 and 0.64kg. This is the core mechanism of the new weapon, ready to be fitted with a barrel and any furniture or accessories the Travellers want. They envisage this weapon as being carried in a hip holster, so no stock is to be fitted. It does need a barrel, and a Handgun type is chosen. A Handgun barrel costs 15% of the receiver price and weighs 20% as much. These values are calculated and added into the worksheet. Using a Handgun barrel brings effective range down from 40m – the nominal performance of light handgun ammunition – to 8m. On the plus side, the PDW starts with Quickdraw 2, which is increased to 6 by the use of a Handgun barrel.

Since the Travellers do not want to add bells and whistles, they stop there. Cost is Cr483, rounded to Cr485, and weight is 0.668kg, rounded to 0.67kg.

Advanced Weapon Design Worksheet

Weapon: Compact PDW

Type: Small Assault Weapon			
Component	Cost	Weight	Other Factors
Receiver Type: Assault	Cr300	1kg	Quickdraw 2
Ammunition Type: Light Handgun		-20%	Base Damage: 2D Ammunition Cost: Cr60 per 100 rounds Base Range: 40m Base Ammunition Capacity: +20%
Mechanism: Fully-Automatic	+20%	—	Auto 3
Compact Receiver	+25%	-10%	Base Ammunition Capacity: -20%
Modified Ammunition Capacity: -30%	-15%	-15%	Ammunition Capacity: 13
Increased Auto Rating	+10%	+5%	Auto 4
Receiver Totals	Cr420	0.64kg	—
Barrel: Handgun	Cr63	0.128kg	Range -80% Penetration -1 Quickdraw +4
Stock: None	—	—	—
Accessories: None	—	—	—
Totals	Cr485	0.67kg	—

The Travellers evaluate their weapon. It is comparable in price to a standard submachinegun but much lighter and can be carried in a hip holster. It is quick into action, with Quickdraw 6 for its configuration, and has a very high rate of fire. This makes it ideal for emergency self-defence situations, and 13-round light handgun magazines are easily available on the open market. The Travellers are satisfied with the weapon despite its limitations and decide to work out its final values.

Normally a magazine would cost 1% of the weapon's price, but since this weapon uses commercially available magazines for small handguns the cost of an empty magazine is based on 1% of the price of such a weapon plus 13 rounds of small handgun ammunition. This gives a rough cost of about Cr9 per loaded magazine if bought over the counter, but the mercenaries will probably buy crates of magazines and tons of ammunition at a much lower price. The Travellers decide they want an extended magazine just

in case it is useful. This will cost Cr9 plus the price of its 18 rounds of ammunition, or roughly Cr20 loaded and ready to go.

The weapon's short barrel means it has a low muzzle velocity, which has already been considered in regard to effective range. It also affects penetration, giving the weapon Penetration -1. Consulting the Final Penetration table on page 18, this indicates the weapon has the Lo-Pen (2) trait – any armour it encounters is treated as doubled in value.

The Travellers decide this handgun-sized weapon will be issued with one standard magazine in place (included in the weapon's weight) and a spare plus two extended magazines (18 rounds each), all on a standardised rig. The whole thing comes in at under 1.5kg and does not get in the way when operating a vehicle, yet delivers a lot of firepower to deter pursuit or cover a dash to a rescue vehicle.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Compact PDW	8	8m	2D	0.67	Cr485	13	Cr9	+6	Auto 4, Lo-Pen 2, Physical Signature (low)

Full Dice of Damage

Some effects are based on the number of 'full dice of damage' done by the weapon. This has nothing to do with any modified applied to the damage; it is based purely on the number of dice. In many cases, an effect might specify a number of full dice, such as 'for every two full dice of damage'. In this case, a weapon that does 3D-3 damage or one that does 3D+3 are treated the same – they both have three full dice of damage. If this weapon gains the AP trait at a level of one per two full dice of damage, it would gain AP 1. A Weapon doing 4D-2 would gain AP 2. At the referee's discretion, a modifier of -4 or +4, or greater, can be treated as an extra full dice of damage.

SPECIAL AMMUNITION

As noted elsewhere, most weapons use 'ball' ammunition; simple inert projectiles which deliver damage to the target by means of kinetic energy. If the projectile is altered but the cartridge dimensions are kept the same, different types of ammunition can be created which can fulfil specialist functions.

Armour-Piercing (TL4): Armour-piercing ammunition is designed to penetrate hard surfaces, typically using a more powerful cartridge and different projectile configuration. Projectiles are made from harder materials and shaped to penetrate, at the cost of reducing damage. This is largely because an AP round causes a narrower wound track and is likely to over-penetrate – a standard round may stop in the target, delivering all its kinetic energy, whilst a round that over-penetrates takes some of its energy away with it. Armour-piercing ammunition increases Penetration by +1. It costs twice the price of ball.

Armour-Piercing, Advanced (TL7): Advanced armour-piercing ammunition typically uses a subcalibre projectile mounted in a sabot which is discarded early in flight. Other ways of achieving the same effect are possible, but the result is a highly penetrative round which can defeat most forms of armour. Advanced armour-piercing ammunition increases Penetration by +2. It costs four times as much as ball and is not available for relatively low-velocity weapons such as handguns and smoothbores.

Distraction (TL5): Distraction rounds use noise and light – usually both – to startle anyone nearby, scare off animals or draw attention to the exploding round. This can be useful as a signal or to attract the attention of potential rescuers, or can be used by security personnel to let intruders know beyond any doubt they have been spotted. If used as a distraction, such as by being fired into a room as an entry team bursts in, a distraction round will force everyone within to make an END check or be unable to react. See page 23 for more information. Distraction rounds cost four times the price of ball ammunition.

Enhanced Wounding (TL5): Enhanced wounding ammunition is designed to mushroom, break up or expand after striking flesh, creating a wider wound track and ensuring the round dumps all of its energy into the target. The trade-off for this is reduced penetration. Enhanced wounding ammunition is banned in many regions. It reduces Penetration by -2 and increases Damage by +2 per dice. These rounds cost twice as much as ball.

Explosive (TL6): This ammunition is typically intended for anti-materiel work, though it can be highly effective against personnel targets. Explosive ammunition for small arms does not produce a massive blast, but can rip apart communications equipment and similar lightly constructed systems where a conventional bullet might well pass right through leaving the device functional. Explosive rounds cost six times as much as ball. They reduce Penetration by -1 whilst adding Damage +1D plus an additional +1D per 3 full dice. Explosive ammunition increases Physical Signature by one level. Explosive ammunition for small arms does not grant the Blast trait.

Flechette (TL7): Flechette ammunition uses a bundle of small, lightweight plastic flakes instead of a single projectile. It is intended for use against vermin, and has a very short effective range as a result. The wide and rapid spread of the flakes grants the Spread trait plus an additional DM+4 on checks attack rolls out to 5m, but the weapon's Range is reduced to 10m. All Damage dice are reduced to D3s, and any D3s are reduced to a single point of Damage. Flechette ammunition costs the same as ball.

Gas (TL7): Gas rounds are used in some security weapons. The round itself does Damage 1D, and is designed to shatter into volatile fragments upon striking any solid surface. One gas round from a shotgun or handgun is sufficient to fill a 3x3x3m volume with a low concentration of gas. Usually this is a tear gas or sedative type. Gas rounds cost 6 times as much as ball ammunition.

High Explosive Armour-Piercing (TL8): High Explosive Armour-Piercing (HEAP) rounds are used in relatively larger-calibre weapons to create a penetration capability even if muzzle velocity is low. HEAP rounds are not very effective in small-calibre weapons as they require a certain diameter to create a shaped-charge effect. However, by using volatile squash-on-impact materials a small plasma jet is formed which can punch a hole in light armour. HEAP rounds are only available for weapons of 10mm calibre and above. They cost ten times the price of ball ammunition and increases Physical Signature by one level. HEAP ammunition increases Penetration by +2.

Incendiary (TL6): Incendiary ammunition is designed to set targets on fire. It is primarily intended to cause materiel damage but can have horrific effects on personnel. Incendiary ammunition costs 6 times the price of ball and gives the weapon the Incendiary trait. An incendiary round that penetrates armour delivers half as much damage as got through armour again the following round, with the armour offering no protection.

Low-Penetration (TL6): Low-penetration ammunition uses a deliberately weak propellant charge and a projectile design that reduces the penetration of the weapon. This is primarily useful in security weapons for use inside installations and spacecraft, but may be used to create a less-lethal response to low-threat situations. Low-penetration ammunition normally reduces Penetration by -1 but can be any value from -1 to -4. In addition to the effects of the weapon's final Penetration, low-penetration ammunition converts each dice of damage to D3. D3s are converted to single points. Low-penetration ammunition costs the same as ball.

Pellet (TL3): Pellet ammunition is typically used in smoothbore weapons. Its primary advantage is the spread of pellets, which makes a hit at close range likely. Pellet ammunition gives the weapon the Spread trait. Damage is the same whether using ball or pellet, but pellets reduce Penetration by the weapon's Spread score. They also increase the chance of a knockdown (see page 22). Pellet ammunition costs the same as ball.

Smart (TL10): Although commonly called 'smart', this ammunition is more correctly designated 'limited-guidance'. It is only useful with a weapon mounting a gun computer as no person can react quickly enough to keep a bullet on target. The user can choose whether to lock in a particular target then shoot, or to have the gun computer assess the situation at the instant of firing and make an assumption about what the target is to be. Either way, once the projectile is in flight it deploys small fins

for guidance and attempts to correct the aim point using signals from the weapon. This is of little use at ranges under 100m as the projectile does not have time to make meaningful course corrections, but at greater ranges DM+1 is gained for guidance from an Intelligent weapon. This increases to DM+2 for TL13+ intelligent weapons. Smart ammunition costs six times as much as ball. If the guidance capability is combined with another special ammunition type, the two costs are added together. Thus smart enhanced-wounding ammunition would cost 6 times the cost of ball plus 2 times the cost of ball, for a total of 8 times the cost of conventional ammunition.

Pellet Spread

Barrel Length	Spread Value
Minimal	6
Short	5
Handgun	4
Assault	3
Carbine	2
Rifle	2
Long	1



Ammunition Types

Type	Cost	Effect
Armour-Piercing	x2	Penetration +1
Armour-Piercing, Advanced	x4	Penetration +2
Distraction	x4	Minor or Small Distraction
Enhanced Wounding	x2	Penetration -2, Damage +2 per dice
Explosive	x6	Penetration -1, Damage +1D, Damage +1D per 3 full dice of damage, Physical Signature +1 level
Flechette	x1	Range reduced to 10m, Damage reduced to D3s, DM+4 to attack within 5m
Gas	x6	Gas effects
HEAP	x10	Penetration +2, Physical Signature +1 level
Incendiary	x6	Incendiary
Low-Penetration	x1	Reduced Damage, Penetration -1 to -4
Pellet	x1	Spread 1-4, Penetration reduced by Spread
Smart	x6	Guidance



Armour-Piercing



Armour-Piercing, Advanced



Distraction



Enhanced Wounding



Explosive



Flechette



Gas



HEAP



Incendiary



Low-Penetration



Pellet



Smart

GRENADES, WARHEADS AND EXPLOSIVES

The 'dangerous bit' of a missile or grenade is its payload, and as a general rule payloads tend to be produced in standard sizes. Most warheads do one of two things; either they explode or they produce gas, smoke and similar cloud effects. The latter is often achieved through a burning process. How great the effect of a given warhead is depends largely upon its size. Grenades, warheads and the like are grouped together here for convenience.

The configuration of the weapon dictates the uses it can be put to. However, a warhead can usually be removed from one delivery system and converted to fit another or to create an improvised explosive device. In other cases, explosives are available in a form that allows them to be tailored to the need at hand. Explosive charges can be emplaced for a variety of purposes. This becomes possible as soon as explosives are available, though low-tech charges are generally inefficient in terms both of reliable detonation and the effects of an explosion.

Hand grenades of a recognisably modern type become available at TL4. Payloads configured as simple hand grenades are bought at the base payload cost. At TL9, advanced fusing becomes available, which allows the grenade to be set for impact detonation, remote detonation using a suitable communications device, proximity/vibration detonation after a set arming time, or a variable time delay. This permits a hand grenade to be set up as a mine or booby trap without additional preparation. Advanced fusing adds 25% to the cost of the weapon but does not affect weight. Mini-grenades become available two Tech Levels after the standard grenade of the type and are usually hand-thrown. Cost for a hand grenade or mini-hand grenade is simply that of the payload (see page 54) unless advanced fusing or some other feature is desired. Hand grenades can be thrown 20m, and have a Range of 100m from a cup discharger.

Rifle grenades become available at TL5. They typically use the same warhead as a hand grenade of the type, costing twice as much and weighing 50% more than a hand grenade. Most rifle grenades are fitted to the muzzle of a rifle and launched by firing it, which obviously prevents the rifle from being used normally until the grenade is removed or launched. Attaching or removing a grenade is a minor action. Specialist rifle grenade launchers are available, though uncommon. Cup-type launchers are rarely used after TL5, but when they are they launch standard hand grenades rather than rifle grenades. Rifle grenades have a base Range of 100m.

At TL6 cartridge grenades, also referred to as launcher grenades or launched grenades, become available. The warhead can be any standard grenade or mini-grenade type. The weapon as a whole is constructed as an all-in-one unit much like a cartridge for a projectile weapon. Cartridge grenades require a tube-type launcher and can be fed from a belt or magazine. A cartridge grenade that hits without detonating will do Damage 2D. Cartridge grenades cost 2.5 times the payload price, plus the cost of any additional features. Weight is the same as a hand-thrown grenade and base Range is 200m.

Rocket-Assisted Multipurpose (RAM) grenades become available from TL8. These are essentially an advanced form of the cartridge grenade, with greater range and accuracy. Some RAM grenades are configured to receive basic guidance, typically from a laser designator. A RAM grenade that hits without detonating will do Damage 2D. RAM grenades cost three times the payload price, plus any additional features. Weight is the same as a hand-thrown grenade. RAM grenades have a base Range of 300m.

From TL5, Rocket-Propelled Grenades (RPG) become available. These are rather basic unguided rocket weapons which are almost always impact-fused and deliver a much larger warhead than a hand, rifle or cartridge grenade. An RPG requires a dedicated launch device, often a tube but sometimes a spigot mortar. Rocket-propelled grenades, whether configured as rifle grenades or used with a launcher, cost five times the payload price and may occasionally have additional features. Weight is usually around five times that of a hand-thrown grenade. Rocket-propelled grenades have a base Range of 500m. Unguided RPGs have the Inaccurate trait, usually at -1 or -2.

In archaic terminology, an emplaced charge might be known as a 'torpedo', though that term has changed considerably in its meaning. Today, a charge placed as a trap is normally termed a mine if of a pre-packaged type, and an improvised explosive (or incendiary) device if assembled using explosives and locally available materials. Ground mines become available at TL5, and are designed to lie more or less flat on the ground, though some advanced variants can be stuck to a suitable non-horizontal surface. Ground mines are usually designed to attack vehicles from underneath or to throw a small anti-personnel device up to a pre-set height where it detonates. They present an all-round threat. Directional mines, available from TL6, is designed to fling numerous small projectiles in a cone from its 'hostile' face, with the area behind its 'friendly' face theoretically safe. Directional mines are usually anti-personnel devices but some inventive ideas have been marketed at times.

Unless otherwise stated, a cartridge or rifle grenade will be in the 35-45mm range and have a warhead equivalent to a standard hand grenade of the type. RAM grenades are also equivalent in effect but have additional propellant to increase both range and accuracy. Light cartridge grenades are typically in the 22-34mm range and equivalent in effect to a light hand grenade.

Payloads

Aerosol, Antilaser: Aerosol grenades fill the air with a fine mist of semi-reflective particles, scattering and dissipating laser pulses and making visual targeting more difficult. Laser attacks, communications or designation into or through an aerosol cloud are impossible. Optical targeting suffers DM-2. An aerosol cloud dissipates after 1Dx3 rounds, or D3x3 rounds for cloud produced by a mini-grenade.

Aerosol, Corrosive: Corrosive aerosol grenades fill an area roughly 3x3x3m with a corrosive gas cloud. This delivers 3D damage in the first round and is Corrosive. The cloud is semi-opaque, reducing the damage done by laser weapons fired into or through it by 1D. Corrosive warheads are not available for mini-grenades.

Anti-Armour: Anti-armour grenades are typically impact-fused, with a shaped-charge warhead designed to create a jet of superheated gas which can cut through armour. Anti-armour warheads are not available as mini-grenades, but a hand grenade type using a streamer to ensure the weapon strikes warhead-first is used by some low-tech forces. It poses a modest threat to armoured vehicles of the era and can occasionally put battle dress out of action. Hand-thrown anti-armour grenades suffer DM-2 to attack rolls, and all grenades of this type have a small blast radius compared to area-effect types. Damage is 4D, with AP 8.

Baton: Baton rounds, otherwise known as 'rubber bullets', are designed to cause shock, knockdown and possibly a stunning effect without being lethal. They are normally available as cartridge grenades only, though in theory the payload could be flung at someone's head. Small-calibre baton rounds, when used as a cartridge grenade payload, are treated as mini-grenades. Full-calibre rounds are treated as standard grenades. At lower Tech Levels, instead of a solid impactor a bag of lead shot is used. The effect is similar. Small baton rounds cause 1D Stun damage; standard baton rounds deliver 2D damage. Damage delivered is considered to be tripled when determining if a knockdown has occurred, but baton rounds are entirely ineffective against rigid armour.

Battlechem: Battlechem payloads are banned by many treaties but still see use at times. Configurations vary but the delivery system usually takes the form of a cloud of sticky particles sufficient to fill a 3x3x3m volume.

Battlechem is an irritant, with similar effects to an incapacitant payload. In addition it is mildly caustic, causing Damage 1D if it touches bare skin and Damage 3D if inhaled. These effects are repeated every round of contact, and for D3 rounds thereafter. Battlechem also has a tendency to clog up filters in breathing equipment. There is no effect on a completely sealed air system like a vacc suit but gas masks and the like will be choked, making breathing difficult, after 1D rounds of contact with the Battlechem cloud. A clogged respirator forces the user to make a Difficult (10+) END check each round and imposes any negative Effect on all actions taken until the filter is cleaned or replaced.

Breacher: Breacher charges are not intended for use as grenades against personnel targets, but can be harmful in a small radius. They are designed to be slapped against a door or wall, and use a tandem shaped-charge to crack and shatter the area they are in contact with. Cartridge or RPG type breachers can be fired at the target structure from a distance. A typical internal partition wall in a starship has Protection +6 and Structure 20; this much damage will put a fist-sized hole through it. Materials such as concrete will crumble if breached; generally three well-placed breaches will be sufficient to collapse a section large enough to duck through. Metal partitions and bulkheads do not collapse in this way. D3+3 breaches are needed to weaken a section so that it can be kicked out. An accurately placed attack on a door or hatch can be used to destroy the hinges and/or locking mechanism and allow it to be pushed off its mounts.

Corrosive: Corrosive grenades contain a sticky gob of corrosive material with a small bursting charge. When the grenade detonates it flings small fragments around within the burst radius. Each does 2D corrosive Damage and is treated as a Weak area fire attack (see page 14). Cartridge and RPG type corrosive grenades are more commonly used to attack armoured targets. If they hit, a large gob of material is stuck to the victim, delivering 4D corrosive Damage. Corrosive payloads are not available for mini-grenades.

Cryogenic: Cryogenic grenades are rare and difficult to manufacture. Their effect is produced by a hugely endothermic reaction between two chemicals, drawing in heat from the immediate surroundings. Cryogenic grenades are useful in firefighting but have some combat applications. Damage against personnel is 5D. Mini-grenades are not available.

Distraction: Distraction grenades create a loud noise and/or a bright flash intended to confuse or disorient opponents. A standard Distraction grenade is treated as an Average Distraction (see page 23).

Electromagnetic Pulse: Electromagnetic Pulse (EMP) grenades are designed to disrupt electronics. Upon detonation the device produces a pulse with an intensity equal to its Tech Level. At TL12 an advanced EMP grenade becomes available, which is more expensive but produces a significantly more powerful pulse.

Fire Suppression: Fire suppression grenades are not intended for combat, but are found in many installations and aboard some starships. Their bursting charge is distributed throughout their payload, and is too small to cause any real harm. It is sufficient to count as a small distraction device (see page 23) if used in this manner, and will create a roughly 3x3x3m cloud of powder with a high heat capacity. The effect of this is to smother flames by depriving them of oxygen whilst at the same time absorbing much of the heat that fuels the fire. The cloud takes D3 rounds to settle, during which time it obscures vision and interferes with weapons such as lasers, imposing DM-2 on tasks or shots through the cloud. Anyone in the cloud without eye and respiratory protection suffers Damage 1D per round.

Fragmentation: Fragmentation grenades contain a small bursting charge which hurls fragments of the casing and often packing materials such as notched wire throughout the burst radius. Performance is generally poor versus armoured targets but unprotected personnel are likely to be severely injured. A fragmentation grenade is treated as an Average area fire attack (see page 14). Small fragmentation grenades deliver 3D damage with a Blast trait of 4. Standard grenades deliver 5D damage with Blast 9.

Gas, Incapacitant: Incapacitant gases include various tear and vomit gases, as well as disorienting psychoactive substances. Incapacitant gas payloads are not available for mini-grenades. A typical grenade will fill a 3x3x3m area with gas, which will linger for 1Dx3 rounds or less if there is significant wind. Anyone exposed to the gas must make an END check each round or be unable to take coherent action. In the case of psychoactives there may be additional effects.

Gas, Toxin: Toxic gases are illegal, even for use in war, in many systems. Most gas grenades use immediately lethal agents such as neurotoxins. A typical grenade will fill a 3x3x3m area with gas, which will linger for 1Dx3 rounds or less if there is significant wind. Anyone lacking a sealed protective suit must make an immediate Very Difficult (12+) END check or be intoxicated. Partial protection such as a respirator reduces this check to Average (8+), but the gas can still take effect by skin contact. The check must be made every round the individual is exposed to the gas. Once intoxicated, the victim suffers 1D INT damage every 1D round. This continues for D3 seconds after the individual is no longer exposed to the gas.

Incendiary, Antipersonnel: Antipersonnel incendiary grenades typically use substances like white phosphorous, which burns hotly and flings small fragments around its area of effect. Incendiary grenades of this type produce a cloud of white smoke equivalent to a smoke grenade and may set secondary targets on fire. The grenade does full damage automatically to anyone within 1m of it, and is treated as a Weak area fire attack against anyone within the burst radius. An incendiary antipersonnel grenade will burn for 1D rounds, after which its smoke cloud dissipates rapidly. Deliberate use against personnel targets is outlawed in some systems, but intent can be difficult to prove.

Incendiary, Demolition: Demolition grenades are not intended for use against personnel, and not particularly effective in this role. They contain material which burns very hot for an extended period, and are typically used to render equipment useless. A mini-grenade will start a fire almost anywhere and destroy most light equipment; a full-sized grenade can melt through a TL8 tank engine deck and scrap the engine, or wreck the breech of an artillery piece.

Microgrenade: Microgrenade payloads contain a small bursting charge and a group of extremely small fragmentation devices scattered by the explosion. These produce the effect of a Standard area fire attack within a 3m radius. Anyone hit suffers 2D damage, though the fragments perform very poorly against armour. Microgrenade warheads are not available for mini-grenades.

Multiple Projectile: Multiple projectile warheads are only available for cartridge grenades, essentially functioning as a giant shotgun shell. Projectiles are heavier but have a lower velocity than shotgun pellets. Out to 10m, multiple projectile grenades do full damage after which it is halved to the maximum range of 25m, beyond which it is completely ineffective.

Plasma: A plasma warhead contains chemicals which combine to create a blast of superheated gas which will be lethal to most personnel targets within its radius. The blast is not directional. Creating a useful quantity of plasma without machinery is difficult and expensive, requiring specialist materials that must be stored safely in the grenade yet capable of undergoing their reaction when required. Poorly made plasma grenades are a serious danger to all concerned.

Plasma, Anti-Armour: Anti-armour plasma warheads are only available as cartridge or RPG weapons. The plasma reaction is contained in a manner that focuses it – more or less – in one direction. This makes the weapon much more effective against armour than a standard plasma grenade, but greatly reduces the area effect. Plasma grenades of

all types have an incendiary effect but do not burn in the usual sense – they use their fuel instantly but may set fire to other materials.

Smoke/Thermosmoke: Low-tech smoke grenades are ‘burning’ types which produce smoke slowly and can set fire to nearby flammable objects. More advanced smoke grenades rely on a ‘cold’ chemical reaction to rapidly create a cloud of suspended particles. Either way, smoke completely obscures vision and blocks lasers. A cloud will

thickly fill a 3x3x3m volume and will spread throughout a wider area. It persists 1Dx3 minutes unless dissipated by wind. At TL8, thermosmoke grenades produce a ‘warm’ cloud, not hot enough to set anything on fire but entirely sufficient to block thermal sensors.

Stun: Stun grenades use either intense light, noise or both to incapacitate targets within the burst radius. These weapons are more powerful than distraction devices and are not available as mini-grenades.

Aerosol, Antilaser



Aerosol, Corrosive



Anti-Armour



Baton



Battlechem



Breacher



Corrosive



Cryogenic



Electromagnetic Pulse



Distraction Grenades



Fire Suppression



Fragmentation



Gas, Incapacitant



Gas, Toxin



Incendiary, Antipersonnel



Incendiary, Demolition



Microgrenade



Multiple Projectile



Plasma



Grenade Weapons

Type	TL	Mini	Hand
Aerosol, Antilaser	9	Cr10, 0.3k Blast 6	Cr15, 0.5kg, Blast 9
Aerosol, Corrosive	10	—	Cr100, 0.75kg, Blast 9, 3D, Corrosive
Anti-Armour	6	—	Cr50, 0.1kg, 4D, AP 8, Blast 1
Battlechem	8	Cr75, 0.3, Blast 4	Cr125, 0.5kg, Blast 9
Baton	7	Cr5, 0.3kg, Stun 1D	Cr10, 0.5kg, Stun 2D
Breacher	8	Cr25, 0.3kg, 2D, Blast 1, AP 4	Cr60, 0.5kg, 4D, AP 12, Blast 1
Corrosive	10	—	Cr75, 0.5kg, 2D, Blast 4, Corrosive
Cryogenic	14	—	Cr150, 0.6kg, 5D, Blast 5
Distraction	7	Cr25, 0.3kg, Typical Distraction	Cr60, 0.6kg, Potent Distraction
Electromagnetic Pulse (EMP)	9	—	Cr100, 0.5kg, Pulse Intensity 9
Electromagnetic Pulse (EMP), Advanced	12	—	Cr150, 0.75kg, Pulse Intensity 12
Fire Suppression	8	Cr10, 0.4kg, Blast 2	Cr15, 0.8kg, Blast 3
Fragmentation	6	Cr20, 0.3kg, 3D, Blast 4, Lo-Pen 2	Cr30, 0.5kg, 5D, Blast 9, Lo-Pen 2
Gas, Incapacitant	7	—	Cr50, 0.5kg, Blast 3
Gas, Toxin	9	—	Cr250, 0.5kg, Blast 3
Incendiary, Antipersonnel	8	—	Cr75, 0.5kg, 2D, Blast 15, Incendiary 1, Burn 2
Incendiary, Demolition	6	Cr50, 0.6kg, 2D, Blast 1, Incendiary 4, Burn 6	Cr80, 1.2kg, 3D, Blast 2, Incendiary 6, Burn 6
Microgrenade	8	—	Cr150, 0.75kg, 2D, Blast 3, Lo-Pen 3
Multiple Projectile	6	Cr10, 0.4kg, 5D, Lo-Pen 3, Spread 2	Cr15, 0.9kg, 6D, Lo-Pen 3, Spread 4
Plasma	12	—	Cr200, 0.8kg, 8D, Blast 6, Lo-Pen 2, Incendiary 4
Plasma, Anti-Armour	12	—	Cr250, 0.9kg, 8D, Blast 3, AP 6, Incendiary 4
Smoke	6	—	Cr15, 0.5kg, Blast 9
Stun	7	—	Cr30, 0.5kg, 3D, Blast 9, Stun

Plasma, Anti-Armour



Smoke/Thermosmoke



Stun



LAUNCHERS AND SUPPORT WEAPONS

Many of the support weapons used by infantry can be constructed in the same manner as personal weaponry. A general-purpose machinegun is typically of the same calibre as a battle rifle. With a heavy barrel, fully-automatic receiver and perhaps a tripod mounting, a support weapon is created. The converse is also true; heavier support weapons have been converted into anti-materiel rifles by adding a stock and stripping away all unnecessary components. Launchers for grenades or rockets require a slightly different process, however.

Launchers are constructed one of two ways, depending on their projectile. Those that launch a rocket-propelled grenade or missile typically have only one primary component, the receiver, which is normally assumed to include the weapon's equivalent of a barrel and a suitable shoulder stock or similar furniture. They may have additional components; electronics and the like can be added as accessories. Cartridge grenade launchers are different in that they are constructed like a conventional firearm, with a receiver, barrel and furniture. Short barrels can be used, but the relatively low-powered propulsion used in cartridge grenades to keep recoil manageable makes a weapon with a handgun length barrel or shorter pointless. The grenade would not reach sufficient velocity to travel farther than a few metres before falling to the ground. It may or may not arm in that distance.

The effectiveness and effects of any kind of launcher is entirely dependent on the weapon launched from it, though warheads and payloads are not considered part of the weapon itself.

Rail and Muzzle Launchers (TL5+): Rocket-propelled grenades can be launched from a rail mounted on a weapon. This is purchased as an accessory to the weapon. Only the cost of the grenade need be paid – see page 126 for possible payloads. Similarly, rifle grenades are launched from an adapter on the weapon; only the grenades need be purchased.

Disposable Launchers (TL6+): A disposable launcher is typically made from lightweight but watertight and durable materials, with a simple optical sight. Disposable launchers use a rocket-propelled grenade type warhead in a small missile which may or may not have some form of guidance system. The container/launcher has negligible cost and adds 0.25kg to the weapon weight. It is designed to be thrown away after use and cannot be reloaded.

Tube Launchers (TL6+): A tube launcher can discharge any kind of cartridge grenade, and those constructed at TL9 and above can also use RAM grenades. Light tube launchers are typically made in calibres between 22-34mm, firing projectiles equivalent in effect to a light grenade. Standard launchers are typically 35-45mm in calibre an equivalent to a standard grenade. The majority of tube launchers are designed as a standard receiver which can be configured for attachment to a longarm or as a standalone weapon. Most tube launchers are single shot weapons, though some magazine-fed variants do exist. 'Grenade machineguns' require a support grenade launcher receiver and a suitable mount.

A grenade launcher designed to fit under a rifle does not require a stock and will normally use an Assault barrel. There is no additional cost or weight for mountings when fitting a launcher to a Modularised weapon. Otherwise fittings for the launcher must be present on the weapon. Standalone weapons generally use a Rifle barrel and a Fixed Stock. Semi-automatic grenade launchers may use a low-capacity detachable magazine but more commonly use a fixed drum which must be reloaded one round at a time, at the rate of one minor action per grenade.

Tube Launcher Receivers

Receiver	Cost	Weight	Base Range	Base Ammunition Capacity	Traits
Single shot, Light	Cr200	1.5kg	200m	1	Bulky
Single shot, Standard	Cr300	2kg	300m	1	Bulky
Semi-Automatic, Light	Cr400	2.5kg	200m	3	Bulky
Semi-Automatic, Standard	Cr500	3.5kg	300m	3	Very Bulky
Support, Light	Cr2000	10kg	200m	Varies	—
Support, Standard	Cr2000	15kg	300m	Varies	—

Reusable Launchers

Launcher	Cost	Weight	Base Range	Base Ammunition Capacity	Traits
Single shot, Light	Cr500	10kg	1,000m	1	Bulky
Single shot, Heavy	Cr1000	15kg	1,200m	1	Bulky
Magazine-Fed, Light	Cr750	12kg	1,000m	3	Bulky
Magazine-Fed, Heavy	Cr500	20kg	1,200m	3	Very Bulky
Field Launcher, Light, 2-Tube	Cr25000	25kg	3,000m	2	—
Field Launcher, Light, 4-Tube	Cr40000	35kg	3,000m	4	—
Field Launcher, Heavy 2-Tube	Cr50000	40kg	10,000m	2	—
Field Launcher, Heavy, 4-Tube	Cr70000	50kg	10,000m	4	—

Support grenade launchers are typically belt fed. The bulk of cartridge grenades makes handling magazines difficult, though some designs use them. If a magazine is fitted to any launcher type it adds 0.5kg to the loaded weight of the weapon per grenade for standard weapons and 0.3kg per grenade for light grenade launchers.

Reusable Launchers (TL6+): Reusable launchers may be fully reusable or utilise a container/barrel system for each missile. ‘Dumb’ launchers are not uncommon with mid-tech troops, typically in an anti-armour role. A reusable launcher is purchased as a whole unit, which is assumed to include furniture and whatever passes for a barrel on the weapon. If a magazine-fed launcher is created, each missile or rocket after the first adds its full weight to the weapon, plus 10%.

Reusable launchers are subdivided into two categories – light and heavy. Both generate significant ‘backblast’ when firing and are dangerous to use in a confined space. Light launchers are intended to be carried as an additional piece of a soldier’s combat load, though they are rather weighty, whilst heavy launchers are the primary weapon of a soldier or small team. Additional ammunition is usually distributed among the unit.

A field launcher is not an infantry weapon but can be deployed by a squad to provide heavy fire support. The weapon includes a base plate and slewing mechanism. Such weapons typically have 2 or 4 tubes, which must be manually reloaded after launch. Costs are for a ‘dumb’ launcher with basic manual controls. More advanced missile guidance will push up the overall cost of the unit – munitions costs and weights are not included but the weight of a full set of missiles is.

Designing Missile Launchers

When designing most weapons, the ‘loaded weight’ is calculated assuming a normal magazine or feed device in place. This is for convenience and close enough for small arms. When designing a missile launcher or similar weapon using heavy munitions, the weight of a full load of missiles must be added to the base weight of the weapon system.

ENERGY WEAPONS

Most energy weapons have similar components to slughtrowers; receiver, barrel, furniture and accessories. The advanced technology required to build high-energy weapons makes some combinations impractical, and some energy weapons are constructed very differently to a conventional firearm.

Projectors

Projectors are considered energy weapons for most purposes. They damage a target by projecting a substance which causes a change in the local energy level. In most cases this is a flammable substance, which when ignited damages the target by extreme heat and also consumes available oxygen. Cryogenic projectors work the opposite way, by coating the target in a substance that absorbs energy. Both can be lethal against personnel but flame weapons are more commonly used as combat assets. Cryogenic projectors are rarely encountered, but do have specialist uses. Some materials will become brittle when frozen, enabling entry to a secured area, and the function of devices and explosives may be slowed.

Projectors do not always resemble conventional firearms. They consist of a device for guiding the projection, containers for the substance to be projected, some means of projecting it, and whatever frame and tubes are required to make it all fit together. This is typically inert gas under high compression. Projectors thus have three key components.

Structure: The body of the weapon includes the nozzle and some means of holding and directing it.

Propulsion: As technology advances it becomes possible to compress propellant gases ever further, allowing more shots for the same volume of propellant or reduced size. Some projectors use chemicals which, when mixed in small quantities, create a propellant gas.

Fuel: Whilst some projectors do not project a burning fuel, all projectors use the term for convenience. In some cases the 'fuel' may be generated by a chemical reaction inside the fuel container, and this may sometimes be combined with generation of propellant.

Projectors have the Hazardous trait, typically at -6.

If directly targeted a projector may be punctured and begin to leak. See page 22 for details of the Mishap Threshold.

A projector can in theory have any amount of propellant and fuel in its tanks. However, there are practical limitations to how much bulk can be carried without making the weapon unmanageable. This is given in kilograms of payload, which is the total of fuel and propellant combined. It is possible to use oversized tanks, but the user suffers DM-2 on all physical tasks for each additional multiple of the maximum load. Thus a soldier armed with a huge flamethrower with 30kg of fuel would suffer the penalty since the normal maximum for a backpack-type flame weapon is 20kg.

Range is different with projectors than projectile weapons; the effective range of a weapon is determined by its propellant. The projected substance will travel twice as far as this but in a distinctly random manner suitable only for setting an area on fire or denying it to the enemy.

Projector Combat

Projectors are not precise weapons and cannot be used to attack just one target unless there is no-one else nearby. Projectors have the Blast trait at a level determined by their type. All targets within that area are subjected to an area fire attack. At up to half the projector's effective range this is treated as Intense. Out to its full effective range it is a Typical area fire attack and at up to the weapon's extreme range the area fire is treated as Weak.

Projector Structure

There are only so many ways to build a projector, though examples may differ somewhat depending on what species they are made for or whether they are to be worn as a pack or carried in hand. Projector structures come in three general types, which determine the general characteristics of the weapon and amount of propellant and fuel that can be carried without making the weapon unmanageable. When calculating the cost and weight of a projector frame, the designer must decide what its combined fuel/propellant capacity is to be and use these values to calculate the equivalent of a receiver cost.

Large: A large projector is normally configured as a set of tanks to be worn on the back or as a support weapon to be mounted on a vehicle or trolley, and a hand-held wand to direct the attack. A large projector can carry a maximum of 20kg of payload without being unwieldy. Its frame and mechanical parts weigh 30% of its payload maximum and cost Cr50 per kilogram of the weapon's total weight. Due to the relative lightness and mobility of the wand a large projector has Quickdraw 2, but most users would not want to be in a situation where that mattered. Large projectors are Blast 3.

Compact: A compact projector is entirely hand-held, in the manner of a rifle. A compact projector can contain a maximum of 10kg of payload without being unwieldy and weighs 20% of its combined payload weight, costing Cr100 per kg of the weapon overall. Quickdraw is 0. Compact projectors are Blast 2.

Hand: A hand projector can be very small, like the nozzle of a hand-held fire extinguisher, but projector weapons generally have a short tube to keep the payload away from the user. A hand projector has a maximum payload of 2kg and weighs 10% of the total payload weight. It costs Cr25 per kg of the weapon overall. Hand projectors have Quickdraw +2, halve the effective range of the weapon, and are Blast 1.

Propellant

Propellant determines the effective range of the weapon and sometimes certain other characteristics. Propellant is measured in terms of the amount of attacks that can be made using 1kg of propellant. Partial amounts are always possible.

Compressed Gas (TL4): Compressed gas becomes available at late TL4, making flame weapons and similar projectors possible. Compressed gas gives 4 attacks per kg, and imparts an effective range of 20m to the weapon. Compressed gas costs Cr100 per kg.

Projector Types

Type	Weight	Maximum Weight	Cost	Blast
Large	30% of payload	20kg	Cr50 per kg of total weight	3
Compact	20% of payload	10kg	Cr100 per kg of total weight	2
Hand	10% of payload	2kg	Cr25 per kg	1

Propellant

Type	TL	Attacks Per Kg	Cost per kg	Effective Range
Compressed Gas	4	4	Cr100	20m
Supercompressed Gas	7	6	Cr250	25m
Generated Gas	9	10	Cr500 per kg (machinery), Cr200 per kg (propellant)	30m

Supercompressed Gas (TL7): Supercompressed gas is available from TL7, giving 6 attacks per kg and increasing effective range to 25m. Supercompressed gas costs Cr250 per kg.

Generated Gas (TL9): Generated gas becomes available at TL9. Using a rapid chemical reaction between 'tablets' of chemicals a high-pressure gas is created almost instantly. Generated gas gives 10 attacks per kg and increases effective range to 30m. Generated gas machinery costs Cr500 per kg. The reagents cost Cr200 per kg.

Combining Fuel and Propellant

In some cases propellant and fuel are the same thing. The mechanics of creating a projector weapon require that both capabilities be paid for and a suitable weight assigned for both. In-game effects may be cinematically different but the rules are identical.

Fuel

The effects of a projector are determined by the nature of its fuel. In some cases a projector can be used for more than one purpose, such as a flamethrower converted to spray an irritant chemical. For flame weapons an ignition mechanism is necessary and it is usually possible to choose whether the fuel is ignited at the nozzle or sprayed on the target then ignited by some other means such as an incendiary grenade. 1kg of fuel is sufficient to make one attack with any projector weapon. It can be assumed that 'fuel' refers to everything needed to cause fire, which may include an oxidising agent for weapons intended to be used in oxygen-poor atmospheres.

Liquid Fuel (TL4): Liquid fuel is technically available at any Tech Level so long as a flammable liquid can be produced or obtained. It becomes usable in flame weapons at TL4 but is not very effective. Liquid fuel does Damage 3D and costs Cr25 per kg. It is Incendiary and Burn 1.

Jellied Fuel (TL5): Jellied fuel sticks to the target rather than running off, causing a more intense and longer burn. Jellied fuel does Damage 4D and costs Cr75 per kg. It is Incendiary and Burn D3+1.

Irritant (TL6): Irritant projectors throw a liquid with properties similar to tear gas. This may be volatile, quickly forming a cloud of gas. The payload has the effects of an Incapacitant (see page 55). Irritants can be improvised from readily available chemicals and water at no cost, or bought for Cr25 per kg. A volatile irritant that also produces the effect of an Incapacitant gas grenade costs Cr60 per kg.

Suppressant (TL6): Suppressant fuel has a high heat capacity and is stored in a manner that keeps it very cold. Liquid carbon dioxide is common. Suppressant projectors are used in firefighting but have some combat applications. An attack with a suppressant projector delivers Damage 2D. Effective range is halved. Suppressant costs Cr25 per kg.

Battlechem (TL8): A Battlechem projector flings a glob of thoroughly unpleasant semi-liquid at a distant target, where it scatters on impact to create a toxic cloud. Battlechem is banned in most systems but if available costs Cr300 per kg.

Advanced Fuel (TL9): Advanced fuel burns hotter and sticks better than its predecessors. Advanced fuel does Damage 5D and costs Cr150 per kg. It is Incendiary and Burn (D3+1).

Fuel

Type	TL	Damage	Cost	Traits
Liquid	4	4D	Cr75 per kg	Burn 1, Incendiary 1
Jellied	5	4D	Cr75 per kg	Burn D3+1, Incendiary 1
Irritant	6	Incapacitant	Cr25 per kg or Cr60 per kg	—
Suppressant	6	2D	Cr25 per kg	—
Battlechem	8	Battlechem	Cr300 per kg	—
Advanced	9	5D	Cr150 per kg	Burn D3+1, Incendiary D3+1
Cryogenic	10	4D	Cr100 per kg	—

Cryogenic Fluid (TL10): Cryogenic fluid makes objects brittle and inflicts damage on unprotected targets. Against sealed armour such as a vacc suit or battle dress it may render the target immobile. The target must make an Average (8+) STR check or be unable to move their limbs for 1D rounds. Cryogenic fluid costs Cr100 per kg and delivers Damage 4D to unprotected targets.

DIRECTED ENERGY WEAPONS

Energy weapons, sometimes referred to as 'directed energy weapons', project a beam or pulse of energy. To be effective as a weapon this must be tightly collimated. Even so, the beam will spread out and lose its effect. This happens more quickly the denser the atmosphere between firer and target, as the beam or pulse interacts with gas molecules along the way. Energy weapons can often be located by the trail of ionized air they create, which may produce sound, flash or scintillations.

At close range, the primary difference between energy and projectile weapons is the lack of recoil, which makes them ideal for low-gravity work. Since the energy pulse travels at lightspeed and is not affected to any significant degree by gravity, shooting at longer ranges requires a different aiming technique. It is not necessary to lead a moving target or compensate for bullet drop with a laser or other energy weapon.

By far the most common energy weapons are lasers, which rely on a tightly focused beam or pulse to deliver energy to the target. Lasers dump all their energy into the first object the pulse encounters, which makes them a poor choice for situations where there may be a need to penetrate cover or thick foliage. On the other hand, a laser can be used to burn through materials that would resist multiple bullet impacts. Microwave guns are

occasionally encountered, functionally similar to lasers but using guided electromagnetic waves rather than intense light to deliver energy to the target.

When creating an energy weapon the same three primary components are used as with firearms – receiver, barrel and stock. The barrel is a collimator or wave-guide rather than a hollow tube but its length affects the function of the weapon in the same way as a conventional firearm. Instead of ammunition, energy weapons require power. This can be stored in a powerpack or generated almost instantly by a disposable chemical cartridge. Preferences vary; powerpacks can be heavy but allow a lot more shots than a magazine of disposable cartridges, and can be recharged.

Powerpacks

When designing a laser or other energy weapon, it is necessary to specify the nature of the powerpack and whether it is integral to the weapon or connected to it by a cable. This should be done before the weapon itself is designed, as powerpack types impose some limitations. There are no 'calibres' of energy weapon as such, since the output depends on how much power is available and the beam or pulse generating machinery. However, the power source has to be capable of delivering sufficient energy and the weapon must be able to handle it. For this reason energy weapons are rated by their power output, which in turn determines the amount of shots that can be fired from a weapon using a given powerpack.

Weak energy weapons have an output of Damage 2D or less.

Light energy weapons have a maximum output of Damage 3D, plus modifiers.

Standard energy weapons have a maximum output of Damage 5D, plus modifiers.

Heavy energy weapons have a maximum output of Damage 8D, plus modifiers.

A shot from an energy weapon draws as many Power points as it delivers dice of damage.

A powerpack can withstand the power draw of its own rating or lower without being overloaded. Only enough energy for the shot being fired is drawn – a Standard powerpack in use with a Light weapon is drained of 2 points of energy per shot, for example. A powerpack that suffers an excessive energy draw gains the Unreliable trait at a level equal to the difference between its normal maximum damage output and the damage output of the weapon. Thus if the Travellers connect a Light powerpack to their heavy support laser, the weapon gains the Unreliable trait at a level determined by the difference between the weapon’s damage output – in this case 7D – and the maximum the Light pack can safely handle. This is 3D, so the weapon gains Unreliable 4. Most of the time this weapon will malfunction when fired, though most of these malfunctions will be relatively minor in nature.

The power capacity of a weapon powerpack is determined by its rating and Tech Level. Capacity is rated in shots per kilogram, and a powerpack can be constructed with any amount of capacity. The ability to jam a powerpack into a given weapon will place practical limits on the amount of firepower the weapon can offer. In practice most weapons are designed to use existing power units.

Cartridges do not have a variable output. They deliver an instant burst of energy when expended, sufficient for one shot at the relevant power level. If a cartridge generates more power than the weapon can handle, it is treated as having the Unreliable trait at a level equal to the difference between the maximum power generated by the cartridge and the damage done by the weapon. Thus a Standard cartridge (with a maximum damage rating of 5D) used to power a Light laser (with a maximum output of 3D) would impose Unreliable 2. If an underpowered cartridge is used the weapon will not be harmed but can only deliver the level of damage that cartridge is capable of producing. Attempts to use multiple cartridges at once are rarely successful. Each additional cartridge imposes a level of Hazardous and Unreliable.

Powerpack Ratings

TL	Power per Kilogram	Cartridge Maximum Output
8	100	—
9	300	Weak
10	500	Light
11	700	Standard
12	1,000	Heavy

Cost for weapon powerpacks is determined by the weapon’s maximum output.

Powerpack Costs

Type	Cost Per kg
Weak	Cr500
Light	Cr1000
Standard	Cr1500
Heavy	Cr2500

Cartridge systems can be manufactured either as static holders or in the manner of a conventional magazine. Cartridges become very hot when used, so it is standard practice to eject them from the weapon in the manner of a standard firearm. Those that retain cartridges require less moving parts but are more prone to accidents; non-ejecting cartridge energy weapons gain Hazardous -2. A cartridge holder does not have to be in the weapon, though it must be connected to it by a cable. Cartridge costs and weights are based on the type of cartridge.



Energy Weapon Cartridges

Type	Cost	Weight
Weak	Cr5	0.01kg
Light	Cr8	0.01kg
Standard	Cr10	0.02kg
Heavy	Cr15	0.025kg

Cartridges are cheaper per-shot than weapon powerpacks but a powerpack can be recharged many times whereas cartridges must be bought anew. The weight of a disposable magazine or holder is equal to the weight of the cartridges within it plus 20%. Cost is equal to the price of one cartridge. Reusable magazines cost twice this amount.

ENERGY WEAPON RECEIVERS

Energy weapons have four classes of receiver – Minimal, Small, Medium and Large. A Minimal receiver is typically nothing more than a short tube containing the collimator and laser generation equipment, which may or may not be fitted with a pistol-style handgrip. Small receivers are normally configured as pistols and medium receivers are normally longarms. Large receivers are typically used for heavy laser rifles or support weapons.

The type of receiver dictates how powerful the laser weapon can be and its base range. This is heavily modified by the barrel length. The weight of an energy weapon receiver does not include a powerpack.

When a receiver is specified, the designer can choose how much damage the weapon is capable of, in whole dice, up to the maximum power available. It is possible, though a little pointless, to create a Large receiver and set the Damage to 2D. The only advantage to this weapon would be reduced power usage.

The function of barrels and furniture is in most ways the same for energy weapons as conventional firearms. Most accessories, such as scopes and bipods, are also identical. Energy weapons do have some exclusive modifications, however.

Energy Weapon Receivers

Type	Base Cost	Base Weight	Base Range	Maximum Power
Minimal	Cr400	0.5kg	50m	Weak
Small	Cr800	1.5kg	100m	Light
Medium	Cr2500	3kg	200m	Standard
Large	Cr5000	8kg	500m	Heavy

Laser weapons with Short barrels are limited in terms of the damage they can deliver, as a result of early beam dissipation. A full-length (Rifle) barrel or longer has no upper limit on laser power, but shorter barrels waste some of the weapon's power. A Carbine or Assault barrel is limits power to 4D damage. Handgun and Short barrels have a maximum Damage 3D, and a Minimal barrel can deliver a maximum of Damage 2D. This limit applies no matter how powerful the laser pulse generator in the receiver may be. The weapon is not damaged by the extra power, but it is wasted.

All energy weapon receivers gain the Zero-G trait and base Penetration -1.

Efficient Beam Generation (TL11): Advances in laser and other energy weapon technologies allow a more efficient generation of beams and pulses. The new technology is expensive, increasing costs by 50%, but the receiver weighs 25% less and base range is increased 25%. This modification is compatible with Lightweight, Compact and so forth as those are modifications to the weapon as a whole, whereas Efficient Beam Generation affects only a few specific components.

Improved Beam Focus (TL11): Improved beam focusing becomes available at TL11. Weapons with this modification experience less energy wastage and thus deliver a little more damage than standard lasers. Improved Beam Focus adds Damage +3 to any laser doing 2D damage or more. The improved focussing crystals do not add any weight but push the cost of the weapon up by 25%.

Intensified Pulse (TL12): By shortening the wavelength, a more intense laser pulse can be created. This has the effect of increasing Penetration by +1. Intensified Pulse can be applied to any laser weapon, adding 10% to receiver weight and increasing cost by 25%.

Variable Intensity (TL10): A variable-intensity modification allows the user to set the damage dealt by each shot, up to the weapon's normal maximum. Powerpack weapons draw only enough power for the shot, but cartridges are fully expended even on a low power setting. The mechanism includes the capability to bleed off excess cartridge energy safely. Intensity variation adds 15% to the cost of the receiver and 10% to its weight.

PERSONAL AND LIGHT SUPPORT WEAPONRY

The choice of weaponry used by a mercenary formation is often dictated by what is available. Where there is a choice, general-purpose systems are usually favoured over highly specialised ones. Availability of ammunition and ease of maintenance are both important factors as well. Mercenary units would, on the whole, prefer to be equipped with reliable weaponry of modest Tech Level than high-end guns that cannot be replaced if they break down in the field. There is, however, a market for specialist and highly advanced weaponry. The TL bands noted here are often used by mercenaries as a shorthand for what weaponry they are likely to face or be able to obtain.

Low Tech (TL0-4)

There is a limit to how low-tech a unit's equipment can be without becoming ineffective, but many items can be obtained at low Tech Levels or fielded by opposing forces. A musketball or even an arrow can put a high-tech mercenary out of action if the shooter gets lucky, and in many cases a basic weapon system does not change function as technology advances. Although marketing departments at arms firms try very hard to make their version of the common field knife more desirable than others there is a limit to how much a low-tech item can vary from the baseline. Such equipment purchased by mercenaries tends to be manufactured at a much higher Tech Level but is not very different to something that could be put together by a TL1 blacksmith.

Mid-Tech (TL5-7)

Mid-tech weaponry generally echoes the functions of more advanced equipment, though less well. It allows local armed forces to fight in much the same way as starfaring mercenaries do – though technology will usually give the mercenaries an advantage. Mercenaries may well equip themselves with a few bits and pieces of mid-tech kit if it is cheap or easy to come by, and many of the forces they work alongside will be equipped to this level.

Common Tech (TL8-10)

The majority of mercenary formations use equipment mostly from the 'common tech' band – hence its name. This is mainly due to availability and ease of

maintenance. Beyond this point conventional firearms do not improve much and tend to be supplanted by gauss or energy weapons.

High Tech (TL11-12)

TL12 represents the upper end of what is commonly available to mercenaries. This is mostly a function of restrictions on advanced military-grade weapons and the difficulty of maintaining them without major support infrastructure. Those units that do rely heavily on gauss and similarly complex weapons generally invest in a solid support and maintenance capability in order to avoid dependence upon outsiders.

Advanced Tech (TL13-15)

It is rare to find mercenary formations equipped to TL13+ standards unless they are very well funded indeed. Such formations typically operate alongside or even as a spearhead for local armed forces on high-tech worlds, or as the elite of a larger mercenary formation.



HAND WEAPONS

Hand weapons never go out of fashion. Most are useful as tools and may never see use against another person, but having a knife handy can mean the difference between life and death.

FIELD KNIFE

Field knives vary from small stiletto-type knives intended primarily for thrusting and well suited to assassinating sentries, to large cutting knives designed to chop through flesh and anything else that gets in the way. The latter are better suited to use as tools than pure combat knives. Indeed, some very fine combat knives have a bad reputation as a result of being used to open coffee cans and becoming bent or blunted. A unit's preference for field knives may vary, and it is not uncommon to find a large knife/bayonet in service as a general tool and weapon, with a small stabbing knife secreted somewhere about the mercenary's person. Although the mode of use varies, performance in skilled hands is about the same.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Field Knife	1+	Melee	1D+2	0.3	Cr10	—

FIELD BLADE

The term 'blade' is used in generic fashion by mercenaries for large survival or tool knives of the Bowie type, machetes and similar heavy-bladed cutting implements, and a range of tool/fighting weapons produced at spacefaring Tech Levels. Military field blades generally feature a stirrup handguard and minimal crosspiece, but the whole array of hangars and not-quite swords falls under this distinction. Blades are favoured by mercenaries for their use as tools and ease of carry. A blade can be used by a skilled fighter to counter a sword or similar hand weapon, albeit at a slight disadvantage, and is much easier to carry.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Field Blade	1+	Melee	2D	0.8	Cr100	—

CUTLASS

Historically, the term cutlass referred to any heavy-bladed cutting tool/weapon used at sea, though over time specific weapons were produced as cutlasses. In modern times the cutlass is associated with naval boarding actions and security operations. It is a heavy-bladed cutting weapon, usually but not always curved, with sufficient hand protection to serve as a knuckle-duster in a close-quarters brawl.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Cutlass	1+	Melee	3D	1	Cr200	—

SABRES

Sabres are carried by some officers as a dress sword which might be pressed into service in an emergency. They can also be encountered in the hands of low to mid-tech cavalry. Designs and weights vary, with most having a curved blade optimised for cutting attacks. Straight-bladed weapons of a similar design might be referred to as sabres or by other titles such as backswords or broadswords. Hand protection varies from a simple stirrup hilt to an elaborate basket, with most modern designs using a shell guard or half-shell. Functionally, a sabre is not all that different to a cutlass but is less well suited to extreme close-quarters combat.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Sabre	1+	Melee	3D+1	1.2	Cr250	—

TOMAHAWK

There is little distinction between a small one-handed combat axe and a tomahawk in reality, but the term tends to be applied to lightweight combat weapons with secondary uses as a tool. Most military tomahawks have attachment points for a rope or cord for use in climbing, and a handle strong enough to be used as a prybar. A tomahawk can be thrown using the Melee (blade) skill.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Tomahawk	1+	Melee (5m)	2D+2	0.75	Cr250	—

ENTRENCHING TOOL

Moving dirt around by hand never gets any easier, but it is one of the ways a mercenary can increase their chances of survival. Entrenching tools vary only slightly in details. They have a digging blade which may or may not be positioned opposite a pick on a haft that can usually be separated from the tools for ease of carry. The haft sometimes contains holders for wire saws and other basic tools. Entrenching tools can be used with the Melee (blade) skill, and are sometimes sharpened along one end of the spade for combat purposes.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Entrenching Tool	4+	Melee	2D+3	1	Cr40	—

STEALTH DAGGER

A stealth dagger is made from low-density plastic and is very hard to detect using standard weapons scanners, imposing DM-4 on scans but not physical searches unless the weapon is somehow disguised. It otherwise functions as a standard dagger.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Stealth Dagger	8	Melee	1D+2	0.3	Cr100	—

SECURITY SHIELD

After disappearing from the low-tech battlefield, shields begin to reappear as mid-tech security equipment. The basic TL6 riot shield is usually round or rectangular and made of fireproof material. It is used in the same way as a low-tech shield but also protects the user from small flame weapons such as Molotov cocktails and adds +1 to the user's Protection against firearm attacks. At TL8 an advanced version becomes available which incorporates a single shot grenade discharger, normally loaded with an incapacitant gas grenade but could be used to deliver a flechette, baton or stun grenade. More extreme situations might call for a multiple projectile round. Advanced security shields are tougher, adding Protection +2, and can be made from corrosion-resistant materials for an additional Cr100.

Weapon	TL	Range	Damage	Kg	Cost	Traits
Security Shield	6	Melee	1D	6	Cr175	—
Security Shield, Advanced	8	Melee	1D	4	Cr250	—



BOARDING SHIELD

Boarding shields are known by various names. Planetside security often call them entry shields, whilst some are marketed under extravagant titles such as 'mobile field barricade segment'. The function of these large, slab-fronted objects is much the same in every case. A boarding shield is far too large and heavy to parry with; it is a piece of mobile cover designed to be emplaced and advanced in the face of potential or actual hostile action.

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 that two people can use 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, but the shield imposes DM-2 on opponents' attack rolls. It provides Protection +12. Most boarding shields are designed to be linked together using quick-release fittings on their sides, enabling a protected firing position to be thrown up almost anywhere. Ladder shields, costing Cr50 more than a standard boarding shield, have a series of bars across the rear enabling them to be used as a short climbing aid.

Weapon	TL	Range	Damage	Kg	Cost	Traits
Boarding Shield	9	—	—	8	Cr400	—



LOW-TECH FIREARMS

Mercenaries might face an array of low-tech firearms, which will typically be unreliable smoothbore muskets with poor accuracy and worse penetration. Better-made weapons can be surprisingly accurate in the hands of a skilled user.

CIVILIAN SHOTGUN

The typical civilian-owned shotgun is used, in rural environments at least, for vermin control or to persuade interlopers to absent themselves from property. Many designs have twin barrels, either in an over-under or side-by-side configuration. This allows two quick shots before the weapon must be manually reloaded one chamber at a time. In urban areas, those who own shotguns for home defence are more likely to buy a combat shotgun but relatively short double-barrelled shotguns – usually with a carbine-length barrel – are sometimes encountered. These weapons are not much of a threat to armoured troops, but nobody wants to be hit by one. This representative example is a full-length ‘farmer’s shotgun’ firing light smoothbore ammunition. At TL3, essentially the same weapon exists but using a flintlock mechanism, imposing the Unreliable 1 trait.



Weapon: Civilian Shotgun

Type: Longarm

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	3kg	Quickdraw 0
Ammunition Type: Light Smoothbore	-25%	-20%	Base Damage: 4D-4 Ammunition Cost: Cr125 per 100 rounds Base Range: 80m Base Ammunition Capacity: 1 Round Signature: Physical (normal) Inaccurate (-1) Penetration -1
Mechanism: Single shot	-75%	—	—
Receiver Feature: Partial Multi-Barrel (additional barrel, shared firing mechanism)	—	—	—
Receiver Totals	Cr75	2.4kg	—
Barrel: Rifle	Cr22.5	1.2kg	—
Stock: Full Stock	C7.5	0.3kg	—
Accessory: Additional Barrel	Cr22.5	0.6kg	Quickdraw -1
Totals	Cr127.5	4.5kg	

With the stock removed and the barrels sawed down, a double-barrelled shotgun becomes a deadly close-quarters weapon and an excellent tool for intimidating people. Typically weight is reduced to around 3kg.

Weapons of this sort are rarely offered for sale in reputable gun shops but are easy enough to convert from a ‘legitimate’ sporting gun. Some users produce their own exotic ammunition for such weapons.

CIVILIAN SHOTGUN

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Civilian Shotgun (pellet)	4	20m	4D-4	4.5	Cr130	1 + 1	Cr2.5	-1	Inaccurate -1, Lo-Pen 4, Physical Signature (normal), Spread 2
Civilian Shotgun, Sawed-Off (pellet)	4	5m	4D-4	3	Cr130	1 + 1	Cr2.5	+1	Inaccurate -1, Lo-Pen 5, Physical Signature (normal), Spread 3
Shotgun Sawed-Off (explosive)	6	5m	6D-4	3	Cr130	1 + 1	Cr Varies	+1	Inaccurate -1, Lo-Pen 2, Physical Signature (normal)

13MM CRUNCH GUN

The 'crunch gun' is named for its distinctive sound. The earliest models appear at late TL3, using black powder and a flintlock mechanism. By TL4 a cartridge version is available. These weapons are an upscaled version of the primitive long-range sniping rifles in use by some cultures. They are marginally effective against heavy protection such as combat armour and may be produced in large numbers by a society with no other counter to high-tech invaders. They are sometimes used for anti-materiel work such as shooting the breech block of an enemy machinegun. This representative example is not dissimilar to the anti-tank rifles used by infantry on some low-tech worlds. It is fed from a 3-round detachable box magazine and uses a manually operated bolt-action mechanism.



Weapon: 13mm Crunch Gun

Type: Longarm

Component	Cost	Weight	Other Factors
Receiver Type: Light Support Weapon	Cr1500	5kg	Quickdraw -4
Ammunition Type: Anti-Materiel	+150%	+50%	Base Damage: 5D Ammunition Cost: Cr1500 per 100 rounds. Base Range: 1,000m Base Ammunition Capacity: 30 Rounds Signature: Physical (extreme) Bulky Ammunition Capacity -60%
Mechanism: Repeater	-50%	—	Ammunition Capacity -50%
Modified Ammunition Capacity: -50%	-25%	-25%	Ammunition Capacity -50% (3 rounds)
Receiver Totals	Cr1400	5.625kg	—
Barrel: Very Long	Cr1400	5.625kg	Base Range +25%
Stock: Full Stock	Cr140	0.56kg	—
Accessory: Bipod	Cr140	1.125kg	Quickdraw -4
Accessory: Scope	Cr50	0.2kg	Scope
Totals	Cr3130	13.14kg	—

At higher Tech Levels, similar weapons are used for the same purposes, but may have enhanced effects from improved ammunition. Typically, explosive or incendiary

ammunition is used for anti-materiel work and armour-piercing is issued to tackle light armoured vehicles and personnel in combat armour.

13MM CRUNCH GUN

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Crunch Gun (ball)	4	1250m	5D	13.1	Cr3130	3	Cr75	-8	Bulky, Physical Signature (extreme), Scope
Crunch Gun (explosive)	8	1250m	6D	13.1	Cr3130	3	Cr300	-8	Bulky, Lo-Pen 2, Physical Signature (extreme), Scope,
Crunch Gun (incendiary)	8	1250m	5D + 2D following round	13.1	Cr3130	3	Cr300	-8	Bulky, Incendiary, Lo-Pen 2, Physical Signature (extreme), Scope
Crunch Gun (advanced AP)	8	1250m	5D-2	13.1	Cr3130	3	Cr210	-8	AP 3, Bulky, Physical Signature (extreme), Scope

JAZAIL

The term jazail can refer to a variety of weapons, some custom-made and others converted from more advanced weaponry. It is not uncommon to find the barrel of a modern assault rifle fitted to a beautifully carved home-made stock with a single shot flintlock mechanism. These weapons' lack of complexity make them ideal for low-tech hunters and insurgents; ammunition is easy to make and breakdowns simple to repair. Some jazails are crude things but many are objects of pride, with the ugly industrial barrel shrouded in carved wood or decorated to suit the user's preferences.



Weapon: Flintlock Jazail

Type: Longarm

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	3kg	Quickdraw 0
Ammunition Type: Black Powder Rifle	—	—	Base Damage: 3D-3 Ammunition Cost: Cr25 per 100 rounds Base Range: 125m Base Ammunition Capacity: 1 Round Signature: Physical (very high) Inaccurate -1 Unreliable 2 Slow Loader 12 Penetration -2
Mechanism: Single shot	-75%	—	—
Receiver Totals	Cr100	3kg	—
Barrel: Rifle	Cr30	1.5kg	—
Stock: Full Stock	Cr10	0.3g	—
Totals	Cr140	4.7kg	—

JAZAIL

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Jazail	3	125m	3D-2	3.2	Cr140	1	Cr0.25	0	Inaccurate -1, Lo-Pen 3, Physical Signature (very high), Slow Loader 12, Unreliable 2

SECURITY AND PERSONAL DEFENCE WEAPONS

Weapons intended for security work generally combine effectiveness at short ranges with a certain degree of intimidation. The large bore of a combat shotgun is generally more likely to dissuade a potential opponent than a rifle, even though the latter is probable more lethal. Security and self-defence weapons are generally used at close range, where a one-shot knockdown is more important than potential lethality. Ease of carry is also a factor with personal defence weaponry. Handguns and mini-submachineguns are favoured by many users, but there are other options on the market.

ADJUDICATOR

One of several unusual handguns marketed by Ailene Armament, the Adjudicator was originally produced as a deterrent weapon to be carried by government or corporate officials, or others who might need a one-shot stop in the case of a suddenly escalating confrontation. It is chambered for a non-standard long 11mm cartridge which can be loaded with a single ball round, potentially lethal pellets or lighter flechettes, or a number of specialist payloads. As a large-calibre smoothbore in a handgun frame it kicks hard and is inaccurate at any sort of distance, but its chunky and generally down-to-business air of authority adds weight to any argument. Adjudicators are favoured by some personnel who venture into the wilderness, as they can be loaded with flechettes for use as snakeshot or with signalling rounds.



Weapon: Adjudicator

Type: Smoothbore Revolver

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Small Smoothbore	-25%	—	Base Damage: 3D-2 Ammunition Cost: Cr100 per 100 rounds Base Range: 60m (ball ammunition) Base Ammunition Capacity: 4 shells Signature: Physical (high) Inaccurate -1 Penetration -1
Mechanism: Repeater	-50%	—	—
Receiver Totals	Cr65.625	0.8kg	—
Barrel: Handgun	Cr9.84375	0.12kg	Range: 12m
Stock: No Stock	—	—	—
Totals	Cr75.46875	0.92kg	—

Loaded with ball ammunition the Adjudicator is an impressive-looking weapon with modest performance and a short effective range. It comes into its own when loaded with pellet shells, giving DM+5 to hit at close range and delivering significant damage for a handgun. Performance against armour is lamentable, however. Flechette

ammunition is similarly limited, though it is hard to miss even a small rodent or snake with this loadout. Some users prefer explosive ammunition, which hits hard but cannot penetrate any hard surface or body armour – and this can make it a liability to the user. However, even a miss with an explosive round will make most assailants retreat.

ADJUDICATOR

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Adjudicator (ball)	7	12m	3D-2	0.92	Cr75	5	Cr5	+8	Bulky, Inaccurate 1, Physical Signature (very high)
Adjudicator (pellet)	—	5m	3D+1	0.92	Cr75	5	Cr5	+8	Bulky, Inaccurate 1, Lo-Pen 5, Physical Signature (very high), Spread 5
Adjudicator (flechette)	—	5m	3D3+1	0.92	C75	5	Cr5	+8	Bulky, Inaccurate 1, Lo-Pen 5, Physical Signature (very high), Spread 5
Adjudicator (explosive)	—	12m	5D+1	0.92	Cr75	5	Cr30	+8	Bulky, Inaccurate 1, Lo-Pen 3, Physical Signature (extreme)

ANHUR INDUSTRIES GA-100

Gauss assault weapons come in two general types: submachineguns and automatic shotguns. In the GA-100, bundles of needle-like projectiles are embedded in a plastic ring which disintegrates almost immediately after the bundle leaves the muzzle. The result combines the hitting power and penetration of a gauss weapon with the spread and knockdown capability of a shotgun.

With a short barrel and bullpup configuration the GA-100 is fast on target and easy to handle in a confined space. It is heavy for an assault weapon but compensates for this by delivering automatic fire with far better penetration than a conventional shotgun. Indeed, over-penetration can be a problem in a typical urban environment or within a lightly built structure.



Weapon: GA-100

Type: Gauss Assault Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Assault Weapon (gauss)	Cr600	2.5kg	Quickdraw 2
Ammunition Type: Small Gauss (gauss shotgun)	—	—	Base Damage: 3D+6 Ammunition Cost: Cr150 per 100 rounds Base Range: 100m Base Ammunition Capacity: 60 rounds Signature: Emissions (low) Penetration +2 Spread 3
Mechanism: Fully-Automatic Gauss Shotgun	+20%	—	Auto 3 Ammunition Capacity -75%
Receiver Feature; Bullpup	+25%	—	Quickdraw+2
Receiver Feature: Quickdraw	+20%	—	Quickdraw +2
Receiver Feature: High-Capacity	+20%	+10%	Ammunition Capacity +20%
Modified Ammunition Capacity: +30%	+30%	+15%	Ammunition Capacity +30% (23 rounds)
Receiver Totals	Cr1684.8	3.1625kg	—
Barrel: Assault Weapon	Cr336.96	0.94875kg	Range -50%, Quickdraw +2
Full Stock	Cr168.48	0.31625	
Totals	Cr2190.25	4.4275kg	

Gauss weapons do not suffer reduced damage due to a short barrel, as the projectile is accelerated in a very short distance within the receiver. Accuracy is affected by using an Assault barrel, but the GA-100 is a close-quarters weapon so this is rarely a problem.

ANHUR INDUSTRIES GA-100

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
GA-100	13	50m	3D+5	4.4kg	Cr2200	23	Cr55	+8	AP 4, Auto 3, Emissions Signature (low) Spread 3

ANHUR INDUSTRIES GC-24

Anhur Industries produces a range of gauss weapons for military and security use, including contracts to several governments. The GC-24 is a compact, concealable gauss pistol with minimal external projections to snag on clothing. Its lack of external moving parts or a need to eject cartridges allows the weapon to be fired from inside a pocket or bag if necessary. Users generally accept the high price tag in return for having a highly effective pocket pistol if they need one. The GC-24's high rate of fire gets through ammunition quickly, and even with a capacity of 24 rounds this is not a weapon for a sustained firefight... but that is not what it was designed for.



Weapon: GC-24

Type: Gauss Pistol

Component	Cost	Weight	Other Factors
Receiver Type: Handgun (gauss)	Cr350	1kg	Quickdraw 4
Ammunition Type: Small Gauss	—	—	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 100m Base Ammunition Capacity: 40 rounds Signature: Emission (low) Penetration +2
Mechanism: Burst-Capable	+10%	—	Auto 2
Receiver Feature: Very Compact	+40%	-20%	Ammunition Capacity -50%
Receiver feature: Increased Rate of Fire (+2)	+25%	+10%	Auto +2
Receiver Feature: Lightweight	+50%	-20%	—
Modified Ammunition capacity: +20%	+20%	+10%	Ammunition Capacity 24 Rounds
Receiver Totals	Cr808.5	0.7744kg	—
Barrel: Short	Cr81	0.078kg	Penetration -1, Range -90%, Quickdraw +6
Totals:	Cr889.5	0.8524kg	—

24-round compact magazines are not compatible with full-sized gauss rifles, but a standard gauss pistol magazine can be used in this weapon. It will protrude awkwardly from the base of the handgrip and make holstering a problem.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
GC-24	13	10m	3D	0.85	Cr890	24	Cr27	+10	AP 3, Auto 4, Emissions Signature (low)

ANHUR INDUSTRIES GS-40

Anhur Industries markets two primary variants of its flagship GS-40 gauss sidearm, both built on the same receiver and using the same magazines. The GS-40 'Army Model' has a conventional length barrel and is otherwise a standard gauss pistol. The 'Navy Model' has an extended barrel more suited to a short assault weapon, allegedly reflecting the preferences of certain world governments' navies. Purchasers of the Navy Model have the option of a detachable shoulder stock – available in high-impact polymer or gorgeously carved wood – which allows the weapon to be used as a sort of carbine. The stock has an internal compartment housing a holographic sighting device, the sensor for which is located under the pistol's barrel. How many users would seriously consider this a combat weapon is open to debate, but it has found favour in the competitive shooting community.



Weapon: GS-40 (Army Model)

Type: Gauss Pistol

Component	Cost	Weight	Other Factors
Receiver Type: Handgun (gauss)	Cr350	1kg	Quickdraw 4
Ammunition Type: Small Gauss	—	—	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 100m Base Ammunition Capacity: 40 rounds Signature: Emissions (low) Penetration +2
Mechanism: Burst-Capable	+10%	—	Auto 2
Receiver Totals	Cr385	1kg	
Barrel: Handgun	Cr57.75	0.2kg	Penetration -1, Range -80%, Quickdraw +4
Totals	Cr442.75	1.2kg	

The Navy Model variant uses an Assault barrel, increasing cost to Cr462 and weight to 1.3kg. The stock adds another Cr45 and – when fitted – 0.12kg. Penetration is slightly better using the longer barrel, and accuracy is maintained to a much greater range.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
GS-40 Army Model	13	20m	3D	1.2kg	Cr450	40	Cr25	+8	AP 3, Auto 2, Emissions Signature (low)
GS-40 Navy Model	13	50m	3D	1.3kg/ 1.42kg	Cr460/500	40	Cr25	+4	AP 4, Auto 2, Emissions Signature (low), Scope

COLVERY SOLUTIONS STOWAWAY PERSONAL DEFENCE WEAPON

Colvery's Stowaway is marketed as a concealable emergency weapon for self-defence, but in truth it is better suited to assassination. Built from exotic and expensive materials, the weapon uses caseless 'stealth' ammunition and does not need to eject cartridges. Moving parts are minimal, and all are internal. The Stowaway has grip and trigger safeties but is otherwise ready to fire the instant the trigger is pulled. There is no selector; the Stowaway empties its 6-round magazine in a single pull of the trigger, and the rate of fire is so high that no operator can stop mid-burst. All autofire attacks must be directed against the same target. The result is a near-instant dump of small-calibre bullets into the target. The inevitable slight movement of the muzzle creates a phenomenon called 'zippering', with multiple narrow wound tracks close together. This makes the resulting wound difficult to treat even though each round is not very potent.



Weapon: Stowaway

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Light Handgun	-20%	-25%	Base Damage: 2D Ammunition Cost: Cr100 per 100 rounds Base Range: 40m Base Ammunition Capacity: 12 Rounds Signature: Physical (low)
Mechanism: Fully-Automatic	+20%	—	Auto 3
Receiver Feature: Increased Rate of Fire (+3)	+50%	+20%	Auto 3
Receiver Feature: Very Compact	+40%	-20%	Ammunition Capacity – 50%
Receiver Feature: Extreme Stealth	+250%	—	Stealth (extreme), Ammunition Cost x20, Signature: Physical (minimal)
Receiver Totals	Cr1234.8	0.576kg	—
Barrel: Short	Cr123.48	0.0576kg	Range -90%, Penetration -1
Stock: No Stock	—	—	—
Totals:	Cr1358.28	0.6336kg	—

Most users carry the Stowaway as an assassination weapon rather than a combat tool. Whether their intent is to take out a selected target or put an enemy down so the Traveller can grab a more effective weapon and escape, the majority of users consider the Stowaway to be a one-shot weapon and do not carry spare

ammunition. Those that do must buy pre-loaded 6-round magazines. Ammunition is rarely sold in bulk. The enormous rate of fire of this weapon results in it emptying itself in an instant; all Auto attacks must be directed at a single target.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Stowaway	12	4m	2D	0.63	Cr240	6	Cr135	+10	Auto 2, Lo-Pen 2, Physical Signature (minimal), Stealth (extreme)

HANGUL LIBERATOR MULTI-BARREL WEAPON SYSTEM

Hangul Arms and Tactical is a division of the Hangul Corporation, which operates in a range of sectors. Its innovative Liberator was developed as a derringer-like weapon for last-ditch self-defence but has since been adapted into other forms. The derringer has four minimal barrels – so short the tips of the bullets can be seen – fired in turn by a rotating firing pin. There is no manual safety, just a grip safety and heavy trigger pull. Recoil is not excessive but the muzzle blast from this weapon is prodigious. The minimal barrel does not allow rounds to reach anything like their design velocity, limiting range, penetration and stopping power. However, as a concealed backup gun or emergency weapon to be carried in a vehicle the Liberator is viable.

Sometime after the derringer’s introduction, Hangul began marketing a variant with a much longer barrel, equivalent to a short submachinegun. This ‘Liberator Defender’ model shares the derringer’s top-break loading mechanism and carries only four rounds, but it hits hard and can be useful in an emergency. The ability to manually load the four chambers with specialist ammunition appeals to some users, though the order



in which rounds are fired cannot be altered. Liberator Defenders can be encountered loaded with distraction or snakeshot ammunition to deter local wildlife, or with more lethal loads as an emergency weapon. Even in Defender configuration the weapon is short enough to be carried in an elongated hip holster, whilst most users of the derringer conceal it in a pocket or under clothing.

Weapon: Liberator

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Heavy Handgun	+20%	+15%	Base Damage: 3D-1 Ammunition Cost: Cr100 per 100 rounds Base Range: 60m Base Ammunition Capacity: 8 Rounds Signature: Physical (normal) Bulky
Mechanism: Repeater	-50%	—	Ammunition Capacity -50% (4 rounds)
Receiver Feature: Partial Multi-barrel	—	—	—
Receiver Totals	Cr105	0.92kg	—
Barrel: Minimal	—	—	Range: 5m, Physical Signature +2, Penetration -2, Quickdraw +8
Stock: No Stock	—	—	—
Accessory; 3x Extra Barrel, Minimal	—	—	—
Totals	Cr105	0.92kg	—

Either variant can be loaded with a single round of any compatible ammunition type in a minor action, but requires four minor actions to fully reload. The derringer’s poor performance against armour can be

offset with HEAP ammunition if available. Both versions use a standard heavy pistol calibre, making access to non-restricted ammunition cheap and simple.

HANGUL LIBERATOR MULTI-BARREL WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Liberator Derringer (lo-pen)	7	5m	3D3-1	0.9	Cr105	4	Cr4	+12	Lo-Pen 3, Physical Signature (very high), Slow Loader 4
Liberator Derringer (HEAP)	7	5m	3D3-1	0.9	Cr105	4	Cr40	+12	Physical Signature (extreme), Slow Loader 4
Liberator Defender (ball)	7	30m	3D-1	2	Cr190	4	Cr4	+6	Physical Signature (normal), Slow Loader 4
Liberator Defender (distraction)	7	30m	3D-1	2	Cr190	4	Cr40	+6	Distraction (small), Physical Signature (normal), Slow Loader 4
Liberator Defender (explosive)	7	30m	5D-1	2	Cr190	4	Cr4	+6	Lo-Pen 2, Physical Signature (high), Slow Loader 4

HARRIX INDUSTRIES BODYGUARD/ POINT GUARD SHOTGUN

Combat shotguns can be produced at TL4 upwards, and are ubiquitous in the field. Despite the rather grandiose title, the 'Guard' series of shotguns are conventional pump-action weapons with a reputation for reliability in the field. They are produced at TL8 but other than the laser pointer are identical in function to lower-tech weapons. The 'Bodyguard' is the standard security

variant, with a fixed stock and full-length barrel. The 'Point Guard' version is the same weapon, greatly shortened and lacking any form of stock. It is intended for use by the lead soldier in a patrol, who may have to react quickly to a changing situation, or as a 'grab gun' for security applications. Its limited ammunition supply is offset by good knockdown power.



Weapon: Bodyguard Shotgun

Type: Longarm with variants

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	2.5kg	Quickdraw 0
Ammunition Type: Standard Smoothbore	-25%	—	Base Damage: 4D Ammunition Cost: Cr150 per 100 rounds Base Range: 100m (ball) Base Ammunition Capacity: 6 shells Signature: Physical (high) Inaccurate -1 Penetration -1
Mechanism: Repeater	-50%	—	—
Receiver Totals	Cr150	2.5kg	—
Barrel: Rifle	Cr45	1.25kg	—
Stock: Full Stock	Cr15	0.25kg	—
Accessory: Laser Pointer	Cr50	0.1kg	—
Totals	Cr260	4.1kg	—

The standard Bodyguard shotgun's rated performance is based on use of ball ammunition, but pellets are more common. This reduces penetration but improves the chance of a first-shot hit and potential knockdown due to the spread of a pellet charge. The shortened,

stockless Pointguard variant has increased pellet spread due to its assault-weapon length barrel. This adversely affects penetration but does increase the chance of a short-range hit.

HARRIX INDUSTRIES BODYGUARD/ POINT GUARD SHOTGUN

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Bodyguard (ball)	8	100m	4D	4.1	Cr260	6	Cr9	0	Bulky, Inaccurate 1, Physical Signature (normal)
Bodyguard (pellet)	8	25m	4D	4.1	Cr260	6	Cr9	0	Bulky, Inaccurate 1, Lo-Pen 4, Physical Signature (normal), Spread 2
Pointguard (pellet)	10	12.5m	4D	3.25	Cr180	3	Cr4.5	+2	Bulky, Inaccurate 1, Lo-Pen 5, Physical Signature (normal), Spread 2

INTERSTELLAR ORDNANCE STANDARDISED PERSONAL WEAPON

The bland name of this weapon belies its ability to irritate and confound skilled users. Developed as a low-cost and easy-to-use weapon for colonists and outback dwellers, it somehow morphed into an expensive and complex design with far too many safety features to be effective. The overall concept is workable – a lightweight bullpup-configuration carbine with minimal recoil, to be issued in massive numbers to colonists as a deterrent and pest-control weapon. The ‘Standard’ – as it is

generally known – is tough and well put together, but assumes the user is an idiot. In addition to a grip safety, magazine safety and a manual safety catch, there is also a second grip safety on the forearm. This weapon will not fire unless it is held correctly with an approved hand position. Many users tape some of the safeties down to reduce the amount of fiddling-about necessary to fire a shot. On the plus side the Standard is extremely reliable, very light and uses cheap ammunition.



Weapon: Standardised Personal Weapon

Type: Carbine

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	2.5kg	Quickdraw 0
Ammunition Type: Light Rifle	—	-40%	Base Damage: 2D Ammunition Cost: Cr40 per 100 rounds Base Range: 150m Base Ammunition Capacity: 36 rounds Signature: Physical (normal)
Mechanism: Semi-Automatic	—	—	—
Receiver Feature: Bullpup	+20%		Quickdraw +2
Receiver Feature: Compact	+25%	-10%	Ammunition Capacity -25% (27 rounds)
Receiver Feature: Rugged	+30%	+10%	—
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Feature: Bulwarked (2)	+40%	+20%	Bulwarked 2
Receiver Totals	Cr1638	1.4256kg	—
Barrel: Carbine	Cr407.5	0.57024kg	Range -10%
Stock: Full Stock	Cr163.8	0.14256kg	—
Accessory: Scope	Cr50	0.2kg	—
Totals	Cr2259.3	2.3384kg	—

The Standard uses 27-round magazines inserted through the underside of the polymer stock. Recoil is minimal, and along with the weapon's excessive safety features this makes it a popular first gun for children – at least, those whose parents can afford the high price tag.

INTERSTELLAR ORDNANCE STANDARDISED PERSONAL WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Standard	9	135m	2D	2.3	Cr2260	27	Cr30	+2	Bulwark 2, Physical Signature (normal)

MK 1 SEMI-AUTOMATIC PISTOL

The 'Mark 1' is not a specific weapon, but represents the typical early semi-automatic pistol developed by most cultures. Mercenaries encounter so many of these, with minor variations, that they are all lumped together as 'Mk1 handguns'. As military weapons, these guns are usually chambered in a calibre around 10-11mm which limits ammunition supply and imposes significant recoil.

Weapons of this type are often picked up as souvenirs or on a 'might come in handy' basis and left in a soldier's kit rather than being locked up in the armoury. The unit's commanders and logisticians may well know there are guns lying around but be unable to inventory or properly secure them. Some units buy large quantities of these and similar weapons for use as sidearms. They are cheap and reasonably effective, and arguably sidearms are not worth the same level of spending as primary personal weapons.



Weapon: Mk 1 Semi-Automatic Pistol

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Heavy Handgun	+20%	+15%	Base Damage: 3D-1 Ammunition Cost: Cr100 per 100 rounds Base Range: 60m Base Ammunition Capacity: 8 Rounds Signature: Physical (normal) Bulky
Mechanism: Semi-Automatic	—	—	—
Receiver Totals	Cr210	0.92kg	—
Barrel: Handgun	Cr31.5	0.184kg	Range -80%
Stock: No Stock	—	—	—
Totals	Cr241	1.104kg	—

The large-calibre subsonic ammunition used in these handguns is ideal for covert operations weapons. Many are converted to 'sentry killers', with a screw-on suppressor. Whilst not entirely silent a suppressed Mk1

can deliver a one-shot kill without alerting a whole camp or installation. The physical signature of the weapon is reduced to Small, imposing DM-4 on checks to detect or locate the sound of the shot.

MK 1 SEMI-AUTOMATIC PISTOL

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Mk 1 Handgun	5	12m	3D-1	1.1	Cr240	8	Cr10	+8	Physical Signature (normal)
Mk 1 Handgun (suppressed)	5	12m	3D-1	1.1	Cr415	8	Cr10	+5	Lo-Pen 2, Physical Signature (small)

TACLOAD ARMAMENTS POSI-9 9MM SEMI-AUTOMATIC PISTOL

The Posi-9 is one of a great many semi-automatic pistols on the market. These range from poorly made offerings formed from cheap stampings in a mid-tech workshop to more upmarket weapons like those produced by Tacload. The Posi-9 is produced at TL9, and takes advantage of advanced manufacturing techniques, but is otherwise similar to the other weapons grouped as 'autopistols' in mercenary jargon.

A burst-capable version of the Posi-9 is available, which pushes the price up to Cr435. The advantages of this modification are debated by many potential

buyers, but there are those who long for more firepower from their handguns. A burst-capable Posi-9 can be converted into a true 'autopistol' by removing the burst limiter and filing away part of the mechanism to increase rate of fire. A gunsmith might charge Cr200-300 to do this, though any decent armourer can make the modifications. Messing up this job imposes Low Quality at a level equal to the negative Effect of a failed Mechanics check. This is not an official variant and would not normally be offered for sale.



Weapon: Posi-9

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw+4
Ammunition Type: Medium Handgun	—	—	Base Damage: 3D-3 Ammunition Cost: Cr75 per 100 rounds Base Range: 50m Base Ammunition Capacity: 10 Rounds Signature: Physical (normal)
Mechanism: Semi-Automatic	—	—	—
Modified Ammunition Capacity: +50%	+50%	+25%	Ammunition Capacity +50% (15 rounds)
Receiver Feature: Advanced Projectile Weapon	+25%	-10%	Range +25%
Receiver Totals	Cr328.125	0.9kg	—
Barrel: Handgun	Cr49.21875	0.18kg	Base range -80% Penetration -1 Quickdraw +4
Stock: No Stock	—	—	—
Totals	Cr377.34375	1.08kg	—

The Posi-9 and similar weapons are sometimes encountered chambered for lighter ammunition, especially if they have been converted to automatic fire. A converted model has Recoil 5 – 3 for its damage and 4 for its high Auto score, -2 for the weight of the weapon. This makes the Posi-9 uncontrollable for those who lack the training to use it properly, and highly inaccurate in the hands of almost any user. The same can be said for almost any full-auto handgun.

TACLOAD ARMAMENTS POSI-9 9MM SEMI-AUTOMATIC PISTOL

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Posi-9 (standard)	9	12.5m	3D-3	1.1	Cr375	15	Cr15	+8	Lo-Pen 2, Physical Signature (normal)
Posi-9 (burst)	9	12.5m	3D-3	1.1	Cr435	15	Cr15	+8	Auto 2, Lo-Pen 2, Physical Signature (normal)
Posi-9 (auto)	9	12.5m	3D-3	1.1	Cr435 + conversion cost	15	Cr15	+8	Auto 4, Lo-Pen 2, Physical Signature (normal)

TACTICAL SYSTEMS INCORPORATED CREWMATE PERSONAL DEFENCE WEAPON

The concept behind the Crewmate was to create a weapon capable of delivering good firepower from a compact and easy-to-carry package, and which could share magazines with standard service weapons. It is built around a handgun type receiver, though with an internal bolt and semi-bullpup configuration. Semi-bullpup in this context means the magazine well and the firing chamber are behind the handgrip, but there is no shoulder stock. Making this configuration work requires loading from the top of the weapon, which is not intuitive for most users.

Despite its slightly odd nature the Crewmate has achieved reasonable market success. Examples are often found clipped to vehicle crewmembers' hatches, offering a chance to deliver heavy – if rather random – firepower whilst escaping from a disabled vehicle. The weapon is a bit too large to be holstered like a pistol and, with a great deal of weight at the rear and little to the front, suffers badly from muzzle climb. Some users fit a longer barrel, which increases muzzle velocity of the intermediate rifle ammunition, and find a way to create a workable stock. This essentially turns the Crewmate back into an assault rifle, which rather defeats its purpose.



Weapon: Crewmate

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Intermediate Rifle	—	-20%	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 250m Base Ammunition Capacity: 30 rounds Signature: Physical (normal)
Mechanism: Fully-Automatic	+20%	—	—
Receiver Feature: Semi-Bullpup	+20%	—	Quickdraw +2
Receiver Feature: Increased Rate of Fire	+10%	+5%	Auto +1
Receiver Feature: Rugged	+30%	+10%	—
Receiver Totals	Cr360.36	0.7392kg	—
Barrel: Handgun	Cr54.054	0.14784kg	Range -80%, Damage -1D
Stock: No Stock	—	—	—
Accessory: Scope	Cr50	0.2kg	—
Totals	Cr464.414	1.08704kg	—

The chief advantage of the Crewmate is its small size and light weight, along with the ability to use magazines from standard mid-tech assault rifles. It is most commonly encountered with an upside-down assault

rifle magazine protruding from its rather weird rear end, but a 10-round magazine is also available for users who need the weapon to fit in a small space. These cost around Cr7 if bought singly.

TACTICAL SYSTEMS INCORPORATED CREWMATE PERSONAL DEFENCE WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Crewmate	7	50m	2D	1.1	Cr465	30	Cr20	+4	Auto 4, Lo-Pen 2, Physical Signature (normal)

ASSAULT WEAPONRY

Close-assault weapons generally come in three types; high-firepower light automatic weaponry, weapons designed for a fast knockdown such as assault shotguns, and specialist weapons developed to deal with a specific threat. Some straddle the line between two or even all three of these applications.

DESPERADO 9MM SUBMACHINEGUN

Desperado is not a commercial designation, but a generic term used to refer to basic submachineguns thrown together in a workshop or built up from kits sold on the open market. Several manufacturers supply bolt-and-chamber kits along with dies and blanks for making other components. Barrels may or may not be supplied, and Desperadoes have been frequently

encountered with home-made smoothbore barrels. This imposes Inaccurate -2. Hand-carved or crudely machined wooden furniture is common. A badly made Desperado may have Unreliable 1 or Hazardous -2; occasionally both. The majority are decent enough weapons if properly looked after, and lethal in the hands of a determined – or desperate – user.



Weapon: Desperado Submachinegun

Type: Assault Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Assault Weapon	Cr300	2kg	Quickdraw 2
Ammunition Type: Medium Handgun	—	—	Base Damage: 3D-3 Ammunition Cost: Cr75 per 100 rounds Base Range: 50m Base Ammunition Capacity: 20 Rounds Signature: Physical (normal)
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver Totals	Cr330	2kg	—
Barrel: Assault Weapon	Cr66	0.6kg	Range -50%, Quickdraw +2
Stock: Full Stock	Cr33	0.2kg	—
Totals	Cr399	2.8kg	—

The typical Desperado uses a 20-round stick magazine which may be carried under the barrel or to the side depending on how the weapon was put together. Top-loading and bullpup types have been encountered, among other configurations. Ultimately the Desperado is a device for spraying medium-calibre handgun

ammunition around, and it does it well enough. A snail drum magazine, holding 50 rounds, is available for Cr20. It makes the weapon unwieldy and is prone to jamming. The standard 20-round magazine is a common pistol size and readily available for Cr4 plus the cost of ammunition.

HANGUL LIBERATOR MULTI-BARREL WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Desperado	5	25m	3D-3	2.8	Cr400	20	Cr19	+4	Auto 3, Inaccurate 1, Physical Signature (normal)

ELIMINATOR CLOSE ASSAULT WEAPON

The Eliminator was designed for people who know they should have both hands on the wheel... but really do not care. It is in some ways a standard small-calibre submachinegun, but optimised for combat at extreme close quarters. The weapon is officially aimed at those who may have to use a shield or carry out tasks with the other hand. Official marketing vids show cautious entry teams moving through buildings, with the lead soldier opening doors and carrying out all manner of tasks with the offhand, the Eliminator held ready in the other. The inevitable ambush is defeated by dramatic one-handed shooting, emphasising accuracy and precision despite having to guide a scared hostage or hold a grenade ready with one hand. If the Eliminator is bought by those who prefer to use a hand weapon – or another gun – in their other hand, Ailene Armament is not reluctant to meet their requirements.

Layout is conventional, with the magazine in front of the trigger assembly. Unusually for a close-assault weapon there is no foregrip. If the weapon is to be used in both hands the usual practice is to cup the front of the magazine well. This is effective with standard magazines but when using extended versions some users grip the magazine rather than the well and pull back, misaligning the feed system and potentially causing stoppages. The folding stock is rarely used in extended mode, but when folded acts as an elbow hook, allowing the weapon to be supported at the rear if pulled in tight. The result is a weapon that shoots much like a long pistol, but with a high automatic rate of fire.

The Eliminator is nothing special as assault weapons go when used two-handed – there are better guns available for less money. However, it is highly effective when combined with a shield for entry work, and the

marketing vids are not entirely misleading – the lead soldier in an entry team needs a hand free to move objects and open doors, and the Eliminator offers more emergency firepower than a pistol whilst doing so.



Weapon: Eliminator

Type: Assault Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Assault Weapon	Cr300	2kg	Quickdraw 2
Ammunition Type: Light Handgun	—	—	Base Damage: 2D Ammunition Cost: Cr60 per 100 rounds Base Range: 40m Base Ammunition Capacity: 24 Rounds Signature: Physical (normal)
Mechanism: Fully Automatic	+20%	—	Auto 3
receiver Feature: Increased Rate of Fire (+1)	+10%	+5%	Auto +1
Receiver Feature: Compact	+25%	-10%	Ammunition -25%
Receiver Feature: Recoil Compensation (-2)	+20%	+10%	Damage -3
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Totals	Cr715.05	2.079kg	—
Barrel: Assault Weapon	Cr143.01	0.6237kg	Range -50%, Quickdraw +2
Stock: Folding Stock	Cr107.2575	0.10395kg	—
Totals	Cr965.3175	2.80665kg	—

Recoil is a problem for many users of one-handed automatic weapons. The Eliminator has a nominal Recoil 2 when firing in fully-automatic mode, controllable for most well-trained personnel. The addition of an integral recoil compensator reduces this to zero, enabling anyone with the most basic of training to shoot full-auto without undue difficulty.

Many users prefer armour-piercing ammunition to compensate for the Eliminator's low-powered projectiles, whilst others use enhanced-wounding rounds which spread on impact. This reduces penetration but increases the chance of putting a target down with one burst.

ELIMINATOR CLOSE ASSAULT WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Eliminator (ball)	9	20m	2D-3	2.81	Cr965	24	Cr25	+4	Auto 4, Physical Signature (normal)
Eliminator (advanced AP)	9	20m	2D-3	2.81	Cr965	24	Cr68	+4	AP 3, Auto 4, Physical Signature (normal)
Eliminator (enhanced wounding)	9	20m	2D+1	2.81	Cr965	24	Cr39	+4	Auto 4, Lo-Pen 3, Physical Signature (normal)

INTERSTELLAR ORDNANCE IAW-12

The Infantry Assault Weapon, TL12, or IAW-12, is essentially a submachinegun using electromagnetic propulsion instead of a conventional firearm mechanism. It is intended for urban combat at moderate to short ranges, and emphasises firepower over accuracy. Rate of fire is high but the low recoil of gauss weapons and overall layout creates a controllable and comfortable-to-shoot weapon whose sole purpose is to get a lot of gauss needles into a target at close range, and do it in the shortest possible time.

A conventional layout was chosen, with the magazine well located between the front and rear pistol grips. This gives a balanced feeling which is excellent for hip-shooting during an assault. The only accessory provided as standard is a laser pointer; a set of iron sights is provided but most owners never use them. Safety devices are limited to the usual grip and magazine safeties, with a manual safe/semi-auto/full-auto selector, oversized to facilitate rapid action. If an ambush or emergency requires maximum response, the user can yank the selector all the way and instantly let rip, taking the time to select semi-automatic if precision is required. This setting is rarely used, though some owners obtain an after-market folding stock and add an optical sight to create a carbine of sorts.



Weapon: IAW-12

Type: Gauss Assault Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Assault Weapon (Gauss)	Cr600	2.5kg	Quickdraw 2
Ammunition Type: Small Gauss	—	—	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 100m Base Ammunition Capacity: 60 rounds Signature: Emission (low) Penetration +2
Mechanism: Fully-Automatic Gauss	+20%	—	Auto 3
Receiver Feature: Quickdraw	+20%	—	Quickdraw +2
Receiver Feature: High-Capacity	+20%	+10%	Ammunition Capacity +20%
receiver Feature: Increased Rate of Fire (+1)	+10%	+5%	Auto +1
Receiver Totals	Cr1140.48	2.8875kg	—
Barrel: Assault Weapon	Cr228.096	0.86625kg	Range -50%, Quickdraw +2
Stock: No Stock	Cr168.48	—	Quickdraw +2
Accessory: Laser Pointer	Cr200	0.1kg	—
Totals	Cr1736.576	3.84125kg	—

The standard combat magazine costs Cr20 without ammunition and holds 72 gauss needles plus a rechargeable battery. It projects a fair way out of the weapon, so some users prefer to carry the IAW-12 with a 40-round gauss pistol magazine in place. For intense

combat, a 175-round drum is available costing Cr100 without ammunition. It makes the weapon rather clumsy but is useful for situations involving a steady advance with the trigger held down.

INTERSTELLAR ORDNANCE IAW-12

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
IAW-12	13	50m	3D-1	3.85kg	Cr1750	72	Cr50	+6	AP 4, Auto 4, Emissions Signature (low)

UNIFIED SPACE INDUSTRIES PLANETSIDER

The Planetsider is slightly unusual in that it attempts to bridge the gap between close-range personal defence weapons and serious combat weaponry. It was developed as a security weapon for starship crews, balancing firepower and a reasonable effective range – for a light automatic weapon – with a short length and ease of handling. The result is a surprisingly accurate carbine-length submachinegun.

The Planetsider is heavy for a weapon of its type, but the weight is mostly at the rear which helps bring the muzzle up quickly when needed. Despite its barrel length the Planetsider is short overall, and equally suited to fast-moving operations inside a starship or combat in the open. The optical sight is rarely used in magnification mode but provides fast target acquisition at moderate ranges.



Weapon: Planetsider

Type: Assault Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Assault Weapon	Cr300	2kg	Quickdraw 2
Ammunition Type: Heavy Handgun	—	+15%	Base Damage: 3D-1 Ammunition Cost: Cr100 per 100 rounds Base Range: 50m Base Ammunition Capacity: 16 Rounds Signature: Physical (normal) Bulky
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver Feature: High-Capacity	+20%	+10%	Ammunition Capacity 19 Rounds
Receiver Feature: Rugged	+30%	+10%	Rugged
Receiver Feature: Advanced Projectile Weapon	+25%	-10%	Range +25%, Physical Signature (low)
Receiver Feature: Bullpup	+25%	—	Quickdraw +2
Receiver Feature: Quickdraw	+20%	—	Quickdraw +1
Modified Ammunition Capacity: +50%	+50%	+25%	Ammunition Capacity 28 Rounds
Receiver Totals	Cr1264	3.13kg	—
Barrel: Carbine	Cr316	1.25kg	Range -10%
Stock: Full Stock	Cr126	0.31kg	—
Accessory: Scope	Cr50	0.2kg	Scope
Accessory: Laser Pointer	Cr200	0.1kg	—
Totals	Cr1956	4.99kg	—

The weapon’s designers decided to cram in as much ammunition capacity as possible, creating a heavy SMG with almost as much capacity as a standard one. For those who require more firepower a 40-round casket magazine is available for Cr40 and a 70-round drum

costs Cr100. The latter is heavy and awkward to use, and eliminates many of the weapon’s quick-reaction advantages. With any kind of magazine in place the Planetsider’s weight absorbs recoil well, removing the Bulky trait.

UNIFIED SPACE INDUSTRIES
PLANETSIDER UNIFIED

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Planetsider	9	55m	3D-1	5	Cr1950	28	Cr48	+5	Auto 3, Physical Signature (low), Rugged

COMBAT WEAPONRY

Combat weaponry includes most weapons intended to be used in battle, where it may be necessary to engage targets across short to relatively long ranges. Preferences vary; some users like short, handy, low-recoil weapons well suited to urban combat or frequent moves in and out of vehicles, whilst others prefer hard-hitting weapons suited to longer ranges. It is not uncommon to encounter support versions of a battlefield rifle. Whilst these are not true machineguns and overheat rapidly when conducting sustained fire, they offer enhanced firepower in a configuration that can be taken over by any rifleman and usually share ammunition feed devices with the rest of the squad.

ANHUR INDUSTRIES GR-80

The GR-80 gauss rifle is manufactured at TL13 along with Anhur’s other gauss weapons, but is functionally little different to TL12 gauss weapons produced by other companies. Its bullpup design takes advantage of gauss weaponry’s lack of an ejection system, creating an ambidextrous rifle of short overall length.

The standard-configuration weapon has a carbine-length barrel and is equally well suited to the assault role or combat at battlefield ranges. The multispectral scope can be omitted, saving Cr600 and 0.5kg, though it is often replaced with a simpler optical sighting device.



Weapon: GR-80

Type: Gauss Rifle

Component	Cost	Weight	Other Factors
Receiver Type: Longarm (Gauss)	Cr800	3.125kg	Quickdraw 0
Ammunition Type: Standard Gauss	—	—	Base Damage: 4D Ammunition Cost: Cr75 per 100 rounds Base Range: 100m Base Ammunition Capacity: 90 rounds Signature: Emission (low) Penetration +2
Mechanism: Fully-Automatic Gauss	+20%	—	Auto 3.
Receiver Feature; Bullpup	+25%	—	Quickdraw+2
Receiver Totals	Cr1200	3.125kg	—
Barrel: Carbine	Cr300	1.25kg	Range -10%, Quickdraw +2
Full Stock	Cr120	0.3125	—
Accessory: Multispectral Scope	Cr600	0.5kg	Scope
Totals	Cr2220	5.1875kg	—

In addition to the standard GR-90, a light support variant is offered, built on the same receiver but using a heavy, heat-dissipating barrel. This is significantly longer than the standard carbine barrel, but in all other ways the support version is identical to the infantry

weapon. As a result any trooper in a squad can take over the support weapon at need. A 150-round extension magazine is issued to support gunners, though since the weapon can use either it is often 'borrowed' by rifle-armed soldiers when their own ammunition runs low.

ANHUR INDUSTRIES GR-80

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
GR-90 Rifle	13	540m	4D	5.2kg	Cr2220	90	Cr65	+0	AP 3, Auto 3, Emissions Signature (low), Scope
GR-90A Support Weapon	13	600m	4D	5.2kg	Cr3120	150	Cr100	-2	AP 3, Auto 3, Emissions Signature (low), Scope

INTERSTELLAR ORDNANCE ADVANCED INFANTRY WEAPON SYSTEM

The AIWS is manufactured on a modular basis, enabling users to purchase either a weapon configured to their own specifications or a collection of parts to enable various configurations to be put together as required. The system is built around a commonly available intermediate calibre round, which is normally manufactured at TL10. Near-identical ammunition is available down to TL6, though prolonged use with such less finely machined munitions will increase barrel and chamber wear.

The system uses a common receiver, with the firing chamber located in conventional manner in front of the handgrip. In standard configuration this weapon is set up with a rifle-length barrel and fixed stock, with a standard 1.5/2.5/4x optical sighting device for general combat operations. The same receiver is used in all configurations, and it is the intermediate rifle cartridge fired that determines the weapon's base characteristics.

The intent from the outset was to create a high-capacity weapon, and in this the designers succeeded. Nominal magazine size is 43 rounds, but 42 are normally loaded to prevent misfeeds. Standard magazines cost Cr14 unloaded, with an extended casket magazine available for support work. These cost Cr28 and hold 64 rounds.

- **(A) Rifle Configuration:** The standard configuration of this weapon is a lightweight assault rifle of conventional layout, with an effective range of around 300m. The variable scope/sight permits accurate fire out to much greater distances, and is rarely dismounted. Barrel and stock can be detached in a matter of moments without the use of tools. Some users prefer to use a folding stock, which reduces weight a little. The primary advantage of a folding stock is ease of handling in a confined space; with the stock folded the weapon gains Quickdraw +2.
- **(B) Carbine Configuration:** The AIWS is often configured as a carbine for use by troops whose primary speciality is not direct infantry combat. In this configuration it has a carbine barrel and folding stock, but is otherwise the same as the rifle variant.

- **(C) Light Support Weapon Configuration:** The light support weapon variant can be used by anyone trained to use the rifle. It has a heavier barrel and normally fed from extended (casket) magazines but can take any feed device compatible with the AIWS family of weapons. Drum magazines are sometimes used, but this makes the weapon clumsy and is favoured only when the support weapon is mounted on a pintle or similar mounting.
- **(D) Assault Variant:** Some users choose to configure the weapon with an assault barrel, vertical foregrip and no stock for close-assault work, removing the scope as well. This reduces effectiveness at range but is useful in urban combat or assault situations. Casket magazines are sometimes used in this role, but their extra bulk can detract from the weapon's main advantage which is getting into action quickly when hostiles are suddenly encountered.



Weapon: Advanced Infantry Weapon System

Type: Longarm

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	2.5kg	Quickdraw 0
Ammunition Type: Intermediate Rifle	—	-20%	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 250m Base Ammunition Capacity: 30 rounds Signature: Physical (normal)
Mechanism: Fully-Automatic	+20%	—	Auto 3
Advanced Projectile Weapon	+25%	-10%	Range +25% Physical Signature -1
High Capacity	+20%	+10%	Ammunition Capacity +20%
Modified Ammunition Capacity: +20%	+20%	+10%	Ammunition Capacity +20%
Receiver Totals	Cr865	2.178kg	—
Barrel: Rifle	Cr260	1.089kg	—
Stock: Full Stock	Cr87	0.218kg	—
Accessories: Modularisation	Cr173	0.218kg	—
Accessories: Scope	Cr50	0.2kg	Scope
Totals	Cr1435	3.9kg	—

INTERSTELLAR ORDNANCE ADVANCED INFANTRY WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
AIWS (rifle)	10	310m	3D	3.9	Cr1435	42	Cr35	0	Auto 3, Physical Signature (low)
AIWS (carbine)	10	280m	3D-1	3.6	Cr1434	42	Cr35	0	Auto 3, Physical Signature (low)
AIWS (support)	1+	310m	3D	5	Cr1695	64	Cr70	-1	Auto 3, Physical Signature (low)
AIWS (assault)	1+	125m	2D	3.4	Cr1211	42	Cr35	2	Auto 3, Physical Signature (low)

TACLOAD ARMAMENTS INTRUDER URBAN COMBAT WEAPON SYSTEM

'Urban Combat Weapon System' is Tacload-speak for an integrated assault rifle and breaching shotgun. The weapon is most definitely geared towards urban combat, ranging from one-block firefights to desperate scrambles on the stairwell of an office building. The receiver is constructed in bullpup configuration, with the 36-round magazine inserted through the underside of the fixed stock. Function of the rifle components is conventional, with full or semi-automatic fire available. A laser pointer and 1.5/2.5/4x magnification optical sight are fitted as standard.

A secondary weapon is fitted under the barrel. This is a very short shotgun, whose handgrip is used as a vertical foregrip when firing from an 'assault stance' – more Tacload-speak, this time a euphemism for blazing away from the hip. The shotgun is fired using the fore hand, meaning both weapons can be discharged at once – albeit with DM-2 on both attack rolls. The short

barrel of the shotgun produces a very broad spread of shot. Whilst the shotgun is intended for breaching internal doors during urban combat, it does offer good knockdown capability in an unexpected close-range encounter. The shotgun holds one shell in the breech and two in its short tube magazine.

One common variant exists, in which the under-barrel shotgun is replaced with a rail launcher for an adapted rifle grenade. Grenades cost double normal price, and have a two-stage motor. The launching charge propels the grenade far enough away from the user that the main stage does not cause injury, though the weapon can still be unpleasant to use. Commonly, HEAP grenades are used to breach heavy doors or building walls, or attack light vehicles from ambush. Other grenade types may be substituted as necessary. With a grenade fitted to the rail, the weapon weighs about the same as with the shotgun. Reloading a grenade onto the rail is a fiddly business requiring 1D+3 Minor Actions.



Weapon: Intruder

Type: Assault Rifle

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	2.5kg	Quickdraw 0
Ammunition Type: Intermediate Rifle	—	—	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 250m Base Ammunition Capacity: 30 rounds Signature: Physical (normal)
Mechanism: Fully-Automatic	+20%	—	Auto 3
Receiver Feature: Bullpup	+25%	—	Quickdraw+2
Receiver feature: High Capacity	+20%	+10%	Ammunition Capacity +20%
Receiver feature: Quickdraw	+20%	—	Quickdraw +2
Receiver Totals	Cr864	2.75kg	—
Barrel: Carbine	Cr216	1.1kg	Range -10%
Stock: Fixed Stock	Cr86.4	0.275kg	—
Accessory: Secondary Receiver (Standard Smoothbore, Complete)	Cr86.4	0.275kg	Quickdraw-1
Accessory: Secondary Barrel (Handgun)	Cr129.6	0.55kg	Spread 4, Penetration -4
Accessory: Laser Pointer	Cr200	0.1kg	—
Accessory: Optical Sight	Cr500	0.5kg	—
Totals	Cr2082.4	5.55kg	—

Some users prefer to load distraction rounds into the shotgun, giving them the potential to stun enemies just before entering a hostile room.

TACLOAD ARMAMENTS INTRUDER URBAN COMBAT WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Intruder (rifle)	8	225m	3D	5.55	Cr2085	36	Cr40	3	Physical Signature (normal)
Intruder (shotgun)	8	5m	4D	5.55	Cr2085	3	Cr5	3	Lo-Pen 5, Physical Signature (normal), Spread 4

TACTICAL SYSTEMS INCORPORATED SQUADMATE BATTLE RIFLE

Tactical Systems Incorporated markets a wide range of mid-tech weaponry, which most people believe is designed and built in-house. This is only partially true; TSI generally works from common designs found on many worlds, creating a generic all-markets version which is then commonly built under license. Quality of these outsourced weapons is generally of an acceptable level, though the occasional 'gin special' is found which appears to have been assembled by a band of drunks after a good night out. Weapons made in-house do not suffer from these quality-control issues but it can be hard to spot whether a batch has been manufactured directly or bought in.

The Squadmate is a simple and effective battle rifle design, conventionally laid out and with few noteworthy features. It uses commonly available

7.5mm battle rifle ammunition and shares magazine compatibility with a great many weapons. In comparison with the intermediate calibre assault rifles favoured by many militaries, the Squadmate hits harder and is accurate to a greater range, but heavier and carries less ammunition. As a semi-automatic weapon it cannot lay down suppressing fire in the manner of an assault rifle, but those who favour it claim this is offset by the ability to shoot precisely rather than hosepiping the countryside.

The Squadmate is used as the basis for a marksman rifle. Usually this is a matter of picking the very best examples when weapons are bench-tested, then working through an accurising process. In addition to using a longer barrel and adding a scope, rifles are hand-finished to a high standard. This drives up the cost in return for a small improvement in performance.



Weapon: Squadmate

Type: Battle Rifle

Component	Cost	Weight	Other Factors
Receiver Type: Longarm	Cr400	2.5kg	Quickdraw 0
Ammunition Type: Battle Rifle	—	—	Base Damage: 3D+3 Ammunition Cost: Cr100 per 100 rounds Base Range: 300m Base Ammunition Capacity: 24 rounds Signature: Physical (normal)
Mechanism: Semi-Automatic	—	—	—
Receiver Totals	Cr400	2.5kg	—
Barrel: Rifle	Cr120	1.25kg	—
Stock: Fixed Stock	Cr40	0.25kg	—
Totals	Cr560	4kg	—

Few variations in magazine size are encountered with these weapons, though occasionally an automatic version is fielded which may use extended magazines. The recoil associated with battle rifle calibre ammunition makes such weapons difficult to control.

TACTICAL SYSTEMS INCORPORATED SQUADMATE BATTLE RIFLE

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Squadmate	7	300m	3D+3	4	Cr560	24	Cr28	0	Physical Signature (normal)
Squadmate Marksman Variant	7	300m	3D+3	4.825	Cr1280	24	Cr28	0	Accurised, Physical Signature (normal)

LOW-G WEAPONS

Specialist weapons intended for low-gravity work are commonly built around the 'snub pistol' round and designed to minimise the positional disruption caused by firing them. Barrels are often set low compared to conventional firearms, directing recoil into the user's centre of mass rather than causing muzzle flip and rotation of an unsecured user. The relative power of snub weapons makes them attractive in some other applications as well; snub revolvers are used as emergency weapons in some groundside installations.

BERATECH SENTINEL 14MM ACCELERATOR PISTOL

A rather unusual offering from BeraTech, the Sentinel uses a fatter and shorter version of standard accelerator rifle ammunition, which is not compatible with other weapons. Spin is imparted to the projectiles by angulated thrust rather than rifling and initiation is electrical, with no external hammer or other moving parts. The whole weapon is treated to remain functional in conditions of extreme cold and vacuum.

Ammunition is carried in a revolving cylinder made of lightweight plastic. This is sufficient to withstand the very modest chamber pressure and not inconsiderable

heat developed by a rocket-powered projectile beginning its acceleration. A partially expended cylinder can be refilled with loose ammunition once or twice, but the manufacturer recommends against more than one reloading. Cylinders are intended to be disposable, and reloading is accomplished with a top-break action. If done gently this retains the cylinder in place. A sharp jerk of the barrel downward ejects the entire cylinder. Unwary users reloading a Sentinel in zero-g may be hit in the face by the cylinder, though this is unlikely to do any harm. A complete cylinder swap requires one minor action.



Weapon: Sentinel

Type: Handgun (Accelerator)

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.375kg	Quickdraw 4
Ammunition Type: Heavy Handgun (rocket)	—	—	Base Damage: 3D-3 Ammunition Cost: Cr200 per 100 rounds Base Range: 50m Base Ammunition Capacity: 5 rounds Signature: Physical (normal) Inaccurate -1
Mechanism: Repeater	-50%	—	Base Ammunition Capacity -50%
Receiver Feature: High Capacity	+20%	+10%	Ammunition Capacity +20% (4 rounds)
Receiver feature: Vacuum	+20%	—	—
Modified Ammunition Capacity: +40%	+40%	+20%	—
Receiver Totals	Cr176.4	0.495kg	—
Barrel: Handgun	Cr17.64	0.075kg	Quickdraw +4
Stock: None	—	—	—
Totals	Cr194.04	0.57kg	—

Although only holding four rounds, the Sentinel is light and extremely easy to use. Its rocket projectiles continue accelerating after leaving the barrel, so range is not affected by barrel length. Many users prefer high-explosive ammunition, oddly enough, for

safety reasons. An explosive round will detonate upon hitting almost anything, whereas most other types may ricochet and continue accelerating with entirely unpredictable results.

BERATECH SENTINEL 14MM ACCELERATOR PISTOL

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
14mm Rocket (ball)	9	250m	3D-3	0.57	Cr195	4	Cr8	8	Inaccurate -1, Physical Signature (normal), Zero-G
14mm Rocket (explosive)	9	250m	5D-3	0.57	Cr160	4	Cr48	8	Inaccurate -1, Physical Signature (normal), Zero-G

UNIFIED SPACE INDUSTRIES SHIPMATE ARMAMENT SYSTEM

Most special-purpose low-recoil ('snub') weapons are standalone designs, but Unified Space Industries has recently begun offering a configurable weapon system built around a common receiver. Weapons are available singly or in batches as a whole unit, or as a kit containing all the necessary parts to make each variant along with a single receiver. The weapon is well put together, and capable of withstanding extreme conditions including vacuum and high temperatures.

As a straightforward snub pistol the Shipmate is grossly overpriced and rather bulky, though it does offer the advantage of burst-capability. This is surprisingly controllable even in low gravity, largely due to the weight of the weapon. The primary advantage of this weapon system is the ability to purchase multiples and set up a full security armament with personnel able to carry a handgun and carbine or close-assault weapon that use the same magazines, or swap out components as the need arises.

All variants normally use the same 20-round magazines, which cost Cr10 plus ammunition cost if bought singly. A 30-round extended magazine is available for Cr15. It extends beyond the base of the magazine well and makes the weapon impossible to holster if in handgun configuration.



Weapon: Shipmate Snub Weapon

Type: Modular Low-Recoil
Weapon System

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.8kg	Quickdraw 4
Ammunition Type: Low-recoil Special-purpose	—	—	Base Damage: 3D-3 Ammunition Cost: Cr200 per 100 rounds Base Range: 40m Base Ammunition Capacity: 10 rounds Signature: Physical (normal) Inaccurate -2 Penetration -1
Mechanism: Burst-Capable	+10%	—	Auto 2
Receiver Feature: Increased Rate of Fire	+25%	+10%	Auto +2
Receiver feature: High-Capacity	+20%	+10%	Base Ammunition Capacity +20% (14 rounds)
Receiver Feature: Rugged	+30%	+10%	—
Receiver Feature: Vacuum	+20%	—	—
Receiver Totals	Cr450.45	1.0648kg	—
Barrel: Handgun	Cr67.5675	0.21296kg	Range -80%, Penetration -1, Quickdraw +4
Stock: None	—	—	—
Accessories: Modularisation	Cr45	0.106kg	—
Totals	Cr563.0175	1.38376kg	—

Handgun Configuration: The default setup for this weapon system is a heavy burst-capable handgun, typically loaded with simple ball ammunition. This weapon is quick on target with Quickdraw 8 and potentially more menacing than a conventional handgun. Standard ball ammunition is the most common loading.

Assault Weapon Configuration: By adding a folding stock and assault barrel, cost is increased to Cr610 and weight to 1.5kg. Effective range is greatly increased, to 20m, and penetration improved as well. Assault weapons are typically left in a very 'clean' condition, with few or no accessories to snag during a quick deployment. The example here is rated using ball ammunition in a standard 14-round magazine.

Carbine Configuration: Using a fixed stock and carbine-length barrel, the Shipmate is converted into a weapon capable of engaging targets at a modest range – such as aggressors storming across a starport landing area. It is usually equipped with a basic optical combat sight giving the Scope trait. Cost is increased to Cr610 and weight to 1.6kg, while range is increased to 45m. Whilst not capable of counter-sniper work the carbine is an effective local defence weapon with a useful burst fire capability.

UNIFIED SPACE INDUSTRIES SHIPMATE ARMAMENT SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Shipmate Handgun	9	8m	3D-3	1.4	Cr560	14	Cr35	6	Auto 4, Inaccurate -2, Lo-Pen 3, Physical Signature (normal), Zero-G
Shipmate Assault Weapon	9	20m	3D-3	1.5	Cr610	20	Cr50	4	Auto 4, Inaccurate -2, Physical Signature (normal), Zero-G
Shipmate Carbine	9	45m	3D-3	1.6	Cr610	20	Cr50	0	Auto 4, Inaccurate -2, Physical Signature (normal), Zero-G

UNIVERSAL SECURITY SOLUTIONS TEN-SIX SNUB REVOLVER

The Ten-Six (10mm calibre, six shots) is in most ways a conventional snub pistol. It is a top-break revolver designed for rapid reloading using speedloaders, even when wearing vacc suit gloves. Its vacc suit-friendly design also includes an enlarged trigger guard and wrist lanyard, along with a general lack of projections to snag on or – in a worst-case scenario – rip a suit. The Ten-Six is produced at TL9 using advanced projectile weapon technologies, creating a weapon with a slightly longer accurate range than is typical of snub handguns. Whether this is worth the extra cost is a factor debated by many potential buyers.

Where the Ten-Six departs from conventional design is the addition of a second barrel under the primary one. This is a single shot smoothbore, operated by pushing a lever to move the firing pin then triggered with the primary mechanism. The original intent was to allow the lower barrel to function as an emergency line-gun, firing a self-adhesive fixing round followed by 10m of fine wire. This version was not very successful and the feature was subsequently reinvented as a secondary combat capability. Many users will carry a distraction round in the lower barrel,

either to shock intruders or permit a warning shot that no court can claim went unnoticed. Flechette ammunition, carried to deal with small vermin, is also popular. More gung-ho users may prefer to load a pellet shell. This removes the Zero-G trait when used, and cannot be fired at the same time as the primary barrel. The weapon's very short barrel renders pellets ineffective beyond point-blank range but their spread makes it difficult to miss.



Weapon: Ten-Six Snub Revolver

Type: Handgun

Component	Cost	Weight	Other Factors
Receiver Type: Handgun	Cr175	0.75kg	Quickdraw 4
Ammunition Type: Low-recoil Special-purpose	—	—	Base Damage: 3D-3 Ammunition Cost: Cr200 per 100 rounds Base Range: 40m Base Ammunition Capacity: 10 rounds Signature: Physical (normal) Inaccurate -2 Penetration -1
Mechanism: Repeater	-50%	—	Base Ammunition Capacity -50%
Advanced Projectile Weapon	+25%	-10%	Range +25% Physical Signature -1
High Capacity	+20%	+10%	Ammunition Capacity +20%
Receiver Totals	Cr131.25	0.7425kg	—
Barrel: Short	Cr13	0.075kg	Range -90%, Physical Signature +1, Penetration -1
Stock: None	—	—	—
Accessories: Secondary Receiver (Light Smoothbore, Single Shot, Complete)	Cr13	0.07425kg	—
Accessories: Additional Short Barrel	Cr13	0.037125kg	Quickdraw -1
Totals	Cr170.25	0.928875kg	—

Performance with ball ammunition is modest, so most users prefer to load HEAP. This offsets the weapon's lamentable performance against armour but cannot

make up for its low muzzle velocity. On the plus side, the Ten-Six is a very short weapon and easy to use at close quarters, even in conjunction with a riot shield.

UNIVERSAL SECURITY SOLUTIONS TEN-SIX SNUB REVOLVER

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Ten-Six (ball)	9	5m	3D-3	0.93	Cr170	6	Cr12	7	Inaccurate -2, Lo-Pen 3, Physical Signature (normal), Zero-G
Ten-Six Smoothbore (pellet)	9	2m	4D-3	0.93	Cr170	1	Cr1.25	7	Inaccurate -1, Lo-Pen 3, Physical Signature (normal), Spread 4

LIGHT SUPPORT WEAPONS

Light support weapons are designed to be integrated at the squad level, giving a unit some measure of self-support capability. Weapons such as light missile launchers and grenade launchers are sometimes referred to as 'problem solvers' – whether the problem is a sniper shooting from a window or a heavily fortified machinegun nest. Some unit commanders frown on the use of expensive guided weapons to take out an infantry position, but the cost of recruiting and training replacement personnel might be much higher.

Direct-fire support weapons such as machineguns offer much the same options a rifle squad already has – but more of it. Some light support weapons are built on a rifle receiver and in truth are little more than overgrown rifles, but these weapons are limited by their ability to dissipate heat. Dedicated support weapons are generally much more capable of sustained fire and have the capacity to change barrels, allowing one to cool whilst another is in use.

BERATECH GUARDIAN 10MM HEAVY ACCELERATOR WEAPON

Accelerator weapons are not universally admired; lasers and low-velocity conventional projectiles are generally preferred. Those militaries that use the accelerator weaponry have long lamented the lack of support versions, prompting BeraTech to introduce the Guardian heavy accelerator weapon. Essentially a large-calibre, fully-automatic variant of the accelerator rifle, the Guardian has been adopted for support work by forces that would otherwise not even look at accelerator weapons.

Layout is conventional, with a detachable magazine loading in front of the trigger assembly. The weapon has a long barrel but no bipod, as it is intended to be used

on the move. The most likely combat environment is low gravity or microgravity, fighting on moons or aboard vessels and space installations. In standard gravity this weapon would be heavy and unwieldy, but whilst it still has considerable inertia a skilled user learns to make use of the stately swing of the barrel in much the same way a sporting shotgunner might favour a heavier gun for its steadiness on the traverse.

One advantage of accelerator weapons is the lack of barrel heating compared to conventional firearms. Rockets will heat the barrel eventually but sustained fire can be maintained as much as five times as long without causing a malfunction.



Weapon: Guardian

Type: Support Weapon (Accelerator)

Component	Cost	Weight	Other Factors
Receiver Type: Light Support Weapon	Cr1500	5kg	Quickdraw -4
Ammunition Type: Heavy Rifle (Rocket)	+25%	+10%	Base Damage: 4D Ammunition Cost: Cr500 per 100 rounds Base Range: 250m Base Ammunition Capacity: 30 rounds Signature: Physical (normal) Inaccurate -1 Zero-G
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver feature: Vacuum	+20%	—	—
Receiver Totals	Cr2700	5.5kg	—
Barrel: Long	Cr1350	4.125kg	Range +10%
Stock: Full Stock	Cr270	0.55kg	—
Accessory: Scope	Cr200	0.1kg	—
Totals	Cr4520	10.275kg	—

Ball ammunition is available for the Guardian, but it is more commonly employed with explosive or HEAP. Nominal ammunition capacity is 30 rounds, but Guardian gunners tend to use a 75-round drum in the

weapon and 45-round casket magazines for reloading. Drums are large and clumsy, so it is rare to see them carried as spare ammunition unless the unit has a munitions robot available.

TACTICAL SYSTEMS INCORPORATED SQUADMATE BATTLE RIFLE

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Guardian (ball)	9	275m	4D	10.3	Cr4520	45	Cr270	-4	Auto 3, Inaccurate -1, Physical Signature (normal), Zero-G,
Guardian (explosive)	9	250m	6D	10.3	Cr4520	45	Cr1400	-4	Auto 3, Inaccurate -1, Lo-pen 2, Physical Signature (normal), Zero-G
Guardian (HEAP)	9	250m	4D	10.3	Cr4520	45	Cr2300	-4	AP 4, Auto 3, Inaccurate -1, Physical Signature (high), Zero-G

DIVERSIFIED MILITARY SYSTEMS

SOLO GAUSS SNIPER RIFLE

Like many weapons from DMS, the Solo is a 'problem-solver' – in this case the problem being armoured troops and light vehicles. It is very finely made at TL14, to the closest tolerances and with great attention to detail. The designers wanted to create a powerful and accurate weapon that retained its effectiveness even when in the field for extended periods. Lightness was also an important factor, as the user might have to get into awkward spaces.

Unusually for a sniping weapon, the Solo is capable of fully-automatic fire. It is rarely used in this manner, though sometimes bursts can help in getting a round on target when making a marginal shot. The very low recoil and lack of internal moving parts associated with gauss weapons makes this a viable strategy. The rugged design allows the weapon to retain accuracy whilst being banged around in the field, but ultimately it is battery life that limits effectiveness. Sighting and propulsion both draw heavily on the weapon's batteries, imposing a limitation not faced by conventional sniping weapons.



Weapon: Solo

Type: Gauss Rifle

Component	Cost	Weight	Other Factors
Receiver Type: Longarm (Enhanced Gauss)	Cr800	3.125kg	Quickdraw 0
Ammunition Type: Enhanced Gauss	—	—	Base Damage: 5D Ammunition Cost: Cr50 per 100 rounds Base Range: 650m Base Ammunition Capacity: 90 rounds Signature: Emission (low) Penetration +2
Mechanism: Fully-Automatic Gauss	+20%	—	Auto 3.
Receiver Feature: Very Compact	+40%	-20%	Ammunition Capacity -50% (45 rounds)
Receiver Feature: Rugged	+30%	+10%	Rugged
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Feature: Accurised	+100%	—	Accurised
Receiver Feature: High Quality	+100%	—	High Quality
Receiver Totals	Cr10483.2	2.2kg	—
Barrel: Long	Cr5241.6	1.65kg	Range +10%.
Full Stock	Cr1048.32	0.22kg	—
Accessory: Holographic Sight	Cr750	—	Scope
Totals	Cr17522.9	4.07kg	—

Penetration is good, as with all gauss weapons, but many users choose to carry at least one magazine of armour-piercing ammunition in case of an encounter with battle dress-equipped troops.

DIVERSIFIED MILITARY SYSTEMS

SOLO GAUSS SNIPER RIFLE

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Solo (ball)	14	715m	5D-2	4.1kg	Cr17525	45	Cr200	+0	AP 6, Auto 3, Emissions Signature (low), Scope
Solo (advanced AP)	14	715m	5D-5	4.1kg	Cr17525	45	Cr275	+0	AP 15, Auto 3, Emissions Signature (low), Scope

JERVAUX AEROSPACE RELIANT

5MM LIGHT MACHINEGUN

As a primarily aerospace company, Jervaux produces only a few firearms and most of those are intended for the starship-security marketplace. The Reliant is no exception, but has found its way into the arsenals of numerous mid-tech governments seeing a solution to the problem of penetrating the armour worn by planetary raiders or higher-tech enemies.

The Reliant is by no means a cheap weapon but is effective in a support or general combat role. Its shortened barrel and folding stock are intended to

make movement in and out of vehicles – or within starships – easier but also lend themselves to using the weapon like a heavy assault rifle. Nominal magazine capacity is 37 rounds, but magazines of this size are rare. Instead, a 50-round extended magazine is favoured by almost all users. This, combined with an increased rate of fire, makes the Reliant an unexpectedly good close-assault weapon. It is still a light machinegun, however, and cannot react to threats as quickly as a rifle or assault weapon.



Weapon: Reliant

Type: Light Support Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Light Support Weapon	Cr1500	5kg	Quickdraw -4
Ammunition Type: Intermediate Rifle	—	—	Base Damage: 3D Ammunition Cost: Cr50 per 100 rounds Base Range: 250m Base Ammunition Capacity: 50 Rounds if using magazine feed Signature: Physical (normal)
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver Feature: Advanced Projectile Weapon	+25%	-10%	Range +25% Reduced Signature: Physical (low)
Receiver Feature: Compact	+25%	-10%	Ammunition -25%
Receiver Feature: Increased Rate of Fire (+1)	+10%	+5%	Auto +1
Receiver Totals	Cr3093.75	4.2525kg	—
Barrel: Carbine, Heavy	Cr773.4375	1.701kg	Range -10%, Quickdraw -1
Stock: Folding Stock	Cr464	0.212625kg	—
Scope	Cr50	0.2kg	—
Totals	Cr4425.19	6.366125kg	—

Users who fear attack by heavily armoured raiders or pirates typically use the Reliant with advanced armour-piercing ammunition as standard. This gives a roughly 8% chance of penetrating TL10 combat armour on any

given hit. The weapon's high rate of fire ensures a lot of hits which, even if not particularly damaging, are likely to cause raiders to reconsider their lifestyle choices.

JERVAUX AEROSPACE RELIANT 5MM LIGHT MACHINEGUN

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Reliant (ball)	9	280m	3D	6.4	Cr4425	50	Cr110	-5	Auto 4, Physical Signature (low), Scope
Reliant (advanced AP)	9	280m	3D-1	6.4	Cr4425	50	Cr180	-5	AP 4, Auto 4, Physical Signature (low), Scope

JIMPY-G

'Jimpy-G' is mercenary slang for 'General-Purpose Machinegun, Generic'. Perhaps the commonest of all direct fire support weapons, GPMGs are a staple of mid-tech military forces. GPMGs that use magazines

are subject to the ammunition capacity reduction (or increase) for their calibre, whilst those that are belt-fed can use any length of belt. Changing a belt takes longer than swapping a magazine; typically 4 minor actions.



Weapon: Jimpy-G

Type: Light Support Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Light Support Weapon	Cr1500	5kg	Quickdraw -4
Ammunition Type: Battle Rifle	—	—	Base Damage: 3D+3 Ammunition Cost: Cr100 per 100 rounds Base Range: 300m Base Ammunition Capacity: 40 Rounds if using magazine feed Signature: Physical (normal)
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver Totals	Cr1800	5kg	—
Barrel: Long, Heavy	Cr900	7.5kg	Range +25%
Stock: Full Stock	Cr180	0.5kg	—
Bipod	Cr180	1kg	Quickdraw -2
Totals	Cr3060	14kg	—

The typical Jimpy-G is belt-fed, with belt lengths of 40-50 rounds typically set up prior to beginning a mission. Disintegrating-link belts can be made in any length, but most weapons of this type use a drum, box or bag to prevent the belt from swinging around whilst on the

move. This limits belt sizes to what will fit in the box. Commonly GPMG teams are made up of three soldiers, with each of the loaders carrying lengths of belt and a spare barrel. A standard length of belt weighs about 1.5kg, with a spare barrel at 7.5kg.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Jimpy-G	5	375m	3D+3	14	Cr3060	50	Cr50	+4	Auto 3, Physical Signature (normal), Slow Loader 4

SPECIALIST WEAPONS

A variety of specialist weapons are available to mercenaries who feel a need for them. Most have a limited range of applications and may not be considered worth the effort needed to transport them, but for other units a particular capability might be a must-have.

KRABBINE HEAVY INDUSTRIES MF-61 INDIVIDUAL FLAME WEAPON

The Military Flame-61 has been in service for many years and has become an industry standard in easily portable flame weapons. Cheap copies continue to appear, some of which are quite good and others a hazard to everyone involved. The Krabbine weapon looks like a chunky rifle, which is an advantage as flame weapon gunners tend to attract a lot of enemy fire if identified. It is fed from a combined fuel/propellant tank loaded through the stock in the manner of a bullpup assault rifle. If other members of a unit carry spare tanks the flame weapon can be kept in action almost constantly since reloading is extremely quick and simple.

The MF-61 stands out from its rivals for having additional safety features, which drives up the price but reassures the soldiers selected to use it. With a Mishap Threshold of 5, flame weapons such as this one are potentially a danger to their users. The weapon's armour helps prevent a penetrating shot whilst its extensive safety features reduce the chance of a catastrophic fuel ignition.



Weapon: MF-61

Type: Flame Projector

Component	Cost	Weight	Other Factors
Receiver Type: Compact Flame Weapon	Cr528	5.28kg	Quickdraw 0 Propellant Capacity: 0.4kg Fuel Capacity: 4kg Blast 2 Hazardous -6
Ammunition Type: Advanced Fuel	—	—	Base Damage: 5D Ammunition Cost: Cr150 per kg Base Range: 30m
Propellant: Generated Gas	Cr200	—	Propellant Cost: Cr200 per kg
Receiver Feature: Armoured	+20%	+10%	Armour +2
Receiver Feature: Bulwarked	+60%	+30%	Bulwarked 3
Totals	Cr1397.76	7.5504kg	—

The MF-61 carries enough fuel and propellant for four attacks, and is reloaded using bulky 4.4kg en-bloc fuel modules. Although heavy and blocky the weapon is easy to handle and generally reliable. Its fuel contains an additive that produces heat upon exposure to air,

self-igniting with no need for a flame at the nozzle. This does mean the MF-61 cannot be used for ‘hose and ignite’ applications, but it is a combat weapon rather than one intended to destroy property.

KRABBINE HEAVY INDUSTRIES
MF-61 INDIVIDUAL FLAME WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
MF-61	9	30m	5D	7.55	Cr1400	4	Cr700	0	Blast 2, Bulwarked 3, Burn (D3+1), Emissions (signature ,extreme) Hazardous -6, Incendiary

UNIFIED SPACE INDUSTRIES
COMBAT CRYOJET

The Cryojet was not intended to be used as a weapon, and for the most part it is not. It is a backpack-fed projector device developed for spacecraft emergency crews. The projector’s cryogenic fluid can be used to extinguish fires or make doors and sections of wreckage brittle, enabling them to be easily shattered or punctured. Security crews occasionally found the projector useful against intruders or hijackers, though use on personnel targets is vaguely ‘advised against’ by the manufacturer. Over time the Cryojet became a recognised tool in the arsenal of some military forces, though it remains primarily a breaching aid rather than a weapon.

The combat Cryojet is a weaponised version of the rescue/firefighting system. In addition to armoured and bulwarked tanks it mounts a large-calibre smoothbore weapon under the cryogenic nozzle. This can be used to deliver shotgun rounds for emergency self-defence, but is more commonly employed with specialist ‘breaker’ ammunition. It is a tremendously heavy and bulky device, and normally employed by specialists who breach an area then step back to allow their more agile comrades to enter. It is a deadly implement however, and can be a nasty surprise for those who think heavy armour makes them invulnerable.



Weapon: Combat Cryojet

Type: Cryogenic Projector

Component	Cost	Weight	Other Factors
Receiver Type: Large Cryogenic Weapon	Cr650	13kg	Quickdraw +2 Propellant Capacity: 1kg Fuel Capacity: 9kg Blast 3 Hazardous -6
Ammunition Type: Cryogenic Fluid	—	—	Base Damage: 4D Ammunition Cost: Cr100 per kg Base Range: 30m
Propellant: Generated Gas	—	—	Propellant Cost: Cr200 per kg
Receiver Feature: Armoured	+20%	+10%	Armour +2
Receiver Feature: Bulwarked	+40%	+20%	Bulwarked 2
Additional Receiver (Longarm Repeater)	Cr200	2.5kg	Base Ammunition Capacity 5 rounds
Ammunition: Heavy Smoothbore	—	—	Ammunition Capacity -20%
Barrel: Assault Weapon	Cr40	0.75kg	Range -50% (smoothbore only)
Totals	Cr1332	20.41kg	

Breaker shells launch a pattern of small explosive charges with an adhesive head, which detonate almost instantly upon fixing to the target. They can be fired as a combat round but more commonly they are used to shatter something made brittle by the cryogenic fluid. If

a breaker round is used with the cryogenic fluid, this is treated as a single attack. Alternatively the breaker can be launched after the target has been given a thorough hosing with cryogenic fluid. Either way, the end result is to double the damage delivered by the cryogenic fluid.

UNIFIED SPACE INDUSTRIES COMBAT CRYOJET

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Cryojet	10	30m	4D (8D with breaker)	20.41kg	Cr1332	9	Cr2200	+2	Blast 3, Bulky, Bulwarked 3, Burn (D3+1), Hazardous -6, Incendiary
Breaker Rounds	10	15m	3D	20.41kg	Cr1332	4	Cr70	+2	Bulky, Inaccurate 1, Lo-Pen 3

LASER WEAPONS

Lasers are by far the commonest directed energy weapons on the battlefield. Their main drawback is an inability to penetrate foliage and other minor obscurants, along with near-uselessness in heavy rain, dust or mist. This has prevented lasers from being universally adopted, though they are popular with forces primarily operating in a low-g environment.

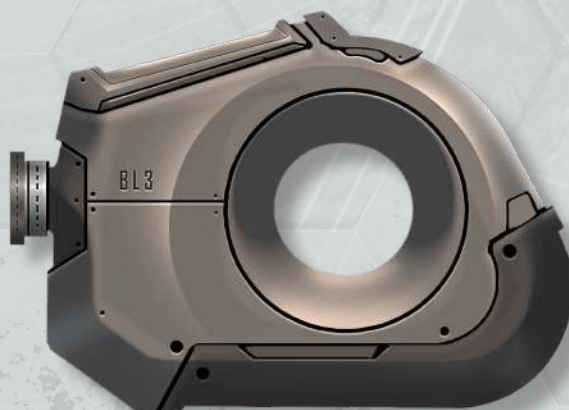
BL-3 EMERGENCY DEFENCE WEAPON

Marketed by Personal Security Solutions, the BL-3 is not intended for combat. It is a semi-covert weapon for self-defence, favoured by corporate executives who like to pretend they are important enough to be in danger. Those that enter the mercenary marketplace are typically bought by personnel who must interact with questionable clients.

The BL-3 has a short cylinder, usually of plain stainless steel with a band around its circumference near one end. This has a concealed section which acts as a trigger when pushed with the thumb. Whilst not actually disguised the BL-3 does not look like a weapon and may not be noticed among paraphernalia on an officer's desk or in an attaché case. It delivers three

laser shots – hence its full name of ‘Bottled Lightning’, using disposable energy cartridges. These are held in a screw-out section at the rear of the weapon and can be replaced individually or all together. The process takes a few minutes and is rather fiddly, however.

Although not a powerful weapon, the BL-3 has the advantage of being almost completely silent. This may enable the user to take additional enemies by surprise if they do not realise what happened to the first target. Marketing vids for this weapon depict a suave secret agent effortlessly taking out four enemies – the last by hurling the BL-3 at his head – but realistic users' expectations are more modest. Nevertheless, as a silent holdout weapon the BL-3 does have its uses.



Weapon: BL-3

Type: Personal Defence Laser (TL9)

Component	Cost	Weight	Other Factors
Receiver Type: Minimal Laser	Cr400	0.5kg	Quickdraw 4 Maximum Power: Weak Laser (2D) Base Range: 50m Damage: 2D Power Per Shot: 2
Receiver Totals	Cr400	0.5kg	
Barrel: Minimal	—	—	Range: 50m, Quickdraw +2, Penetration -2
Stock: No Stock	—	—	—
Accessory: Weak Energy Cartridge x3	Cr15	0.03	—
Totals	Cr415	0.53kg	—

As a non-ejecting cartridge laser weapon, the BL-3 can become hot or suffer a malfunction due to sudden and intense power draw. Accidents are rare, however.

BL-3 EMERGENCY DEFENCE WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
BL-3	9	5m	2D	0.5	Cr415	3	Cr15	+10	Emissions Signature (normal), Hazardous -2, Lo-Pen 4, Zero-G

M-84 LASER WEAPON SYSTEM

The M-84 designation for this weapon was assigned by one of the larger interstellar powers during trials, and has become the standard identifier despite the fact it was not adopted for service. The basic concept was to create a battlefield laser weapon which could be configured as a carbine, full-sized rifle or specialist weapon. The resulting design required compromises but has found favour with a number of low-g-trained forces. It also serves as a personal weapon for some forward observers, functioning as a designator as well as combat carbine.

The weapon is supplied without a complex sighting system, since some users choose to fit a holographic sight rather than a physical one, and others have differing preferences depending on the weapon's intended role. The design is not modular in the sense that it is not possible to remove and replace the barrel in a few moments without tools. Mounting a different barrel in a laser weapon is a delicate process requiring a workshop, not difficult but requiring calibration. A badly mounted barrel can absorb some of the laser's energy – in effect the weapon shoots itself. This can have catastrophic results, making modular laser weapons distinctly rare.



Weapon: M-84

Type: Laser Longarm (TL11)

Component	Cost	Weight	Other Factors
Receiver Type: Medium Laser	Cr2500	3kg	Quickdraw 0 Maximum Power: Standard Laser (5D) Base Range: 200m Damage: 5D Power Per Shot: 5
Receiver Feature: Efficient Beam Generation	+50%	-25%	Range +25%
Receiver Feature: Improved Beam Focus	+25%	—	Damage +3
Receiver Totals	Cr4687.5	2.25kg	—
Barrel: Carbine	Cr1171.875	0.9kg	Range: -10%
Stock: Folding Stock	Cr703.125	1.125kg	—
Accessory: Internal Powerpack	Cr150	0.1kg	Power 70
Totals	Cr6712.5	4.375kg	—

The M-84 has an internal power reserve good for 14 shots, but this is not sufficient for sustained combat. Typically the weapon is used with a 3kg power pack carried low on the user's back. This provides 2,100 Power, or 420 shots, which is likely to be more than enough. A 1kg belt pack good for 140 shots is also available for Cr1500.

When set up as a carbine the M-84 is limited by the length of its barrel to 4D damage. Each shot still costs 5 Power. If configured as a rifle, usually with a full stock, the weapon does 5D damage and has a greater effective range. The rifle variant costs the same as the carbine but weighs 5kg.

M-84 LASER WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
M-84 (carbine)	11	225m	4D+3	4.4 + 1 or 3	Cr6750	14 plus 420 or 140	Cr4500 or Cr1500	0	Emissions Signature (normal), Lo-Pen 2, Zero-G,
M-84 (rifle)	11	250m	5D+3	5 + 1 or 3	Cr6750	14 plus 420 or 140	Cr4500 or Cr1500	0	Emissions Signature (normal), Lo-Pen 2, Zero-G,

NEFERTEM PERSONAL DIRECTED ENERGY WEAPON

Named after an ancient god of the first sunlight, the Nefertem ‘Personal Directed Energy Weapon’ is an entry-level laser pistol designed to be used in conjunction with an external powerpack. Weapons of this type are sometimes installed in spacecraft for the defence of specific points, with power outlets located at intervals. The concept is unpopular with most users, since being tethered to a single location or trailing a long power cord around can be a problem in combat. However, as a means of saving the weapon’s powerpack for mobile use it has some advantages.

The Nefertem weapon is standard as laser pistols go, though it has a longer than usual barrel. Range is limited, as with all short-barrelled laser weapons, and stopping power is at best modest. Nevertheless, the weapon is sufficiently popular with merchant starship security crews that it has become a household name in the entry-level energy weapons market.



Weapon: Nefertem

Type: Laser Pistol (TL9)

Component	Cost	Weight	Other Factors
Receiver Type: Small Laser	Cr800	1.5kg	Quickdraw 4 Maximum Power: Light Laser (3D) Base Range: 100m Damage: 3D Power Per Shot: 3
Receiver Totals	Cr800	1.5kg	—
Barrel: Assault Weapon	Cr160	0.45kg	Range: -50%, Quickdraw +2
Stock: No Stock	—	—	—
Totals	Cr960	1.95kg	—

The standard powerpack for this weapon is a 1kg belt-mounted unit with a capacity of Power 300. These are drained at the rate of 3 per shot. The powerpack is designed to plug into any standard power outlet for charging. Aboard a starship or military vehicle this will not cause any problems but civilian power systems

are not designed to support multiple lasers charging at once. The power drain may be noticed or could trip safety devices. Many hotels have a ‘no laser charging’ rule, and signs indicating this are popular souvenirs among Travellers who have broken this rule.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
Nefertem	9	50m	3D	2.6+1	Cr960	100	Cr1000	+6	Emissions Signature (normal), Lo-Pen 2, Zero-G

LAUNCHERS

Some launcher weapons are extremely simple, especially low-tech ones designed for use with ‘dumb’ projectiles, and in some cases can be thrown together in a blacksmith’s workshop. More advanced weapons incorporate electronics or use complex materials that drive up their purchase price considerably. Ultimately, however, it is the warhead that counts. Everything else is dedicated to getting it to the target.

KRABBINE HEAVY INDUSTRIES IP-2 STANDOFF INCENDIARY WEAPON

The IP-2 is a disposable one-shot unguided rocket launcher constructed from lightweight polymers. Its sole purpose is to send a 50mm rocket-propelled grenade on its way. The latter has a white phosphorous warhead which creates a dense cloud of white smoke and may pose a hazard to any personnel within the burst radius. It is officially marketed as a ‘battlefield concealment

and anti-materiel’ weapon to get around laws against using such weapons on personnel targets. Damage reflects the possibility of being hit by small fragments of phosphorous. In the incredibly unlikely event of a person suffering a direct hit from this weapon damage would be 6D and Burn duration increased to 6.



Weapon: IP-2 Disposable Incendiary

Weapon

Type: Disposable Launcher

Component	Cost	Weight	Other Factors
Receiver Type: Disposable Launcher	—	0.25kg	Quickdraw -8 Bulky
Ammunition Type: Incendiary Rocket-Propelled Grenade	Cr75	0.5kg	Base Range: 500m Base Ammunition Capacity: 1 Rocket Signature: Physical (normal)
Totals	Cr75	0.75kg	—

Disposable launchers of this type are purchased with the rocket sealed inside. Parts of the launcher are destroyed or ejected during launch, rendering it impossible to refurbish and reuse.

Weapon	TL	Range	Damage	Kg	Cost	Traits
IP-2	8	500m	2D	0.75	Cr75	Blast 15, Burn 2, Incendiary

SPIGOT MORTAR, GENERAL-PURPOSE

A spigot mortar is one of the most basic methods of launching a rocket-propelled grenade, and is typically referred to simply as 'RPG' even though the term properly applies to the projectile rather than the launcher. The device itself is nothing more than a hollow post with handles and a basic optical sighting device. A rocket-propelled grenade is fitted to the front of the weapon and launched in a shallow arc or flat trajectory. Devices of this kind are typically used for direct fire against armoured vehicles or infantry

positions, but can pose a threat to grav vehicles and aircraft. Dedicated RPG launchers of this type are common among mid-tech forces that face a threat from higher-tech militaries, and may be issued in disproportionate numbers. The concept is reinvented at TL8, when a basic guided version becomes available. 'Dumb' RPGs can still be launched from this weapon. The standard spigot mortar costs Cr500 and weighs 10kg with a grenade in place. The guided variant costs Cr1000 and adds the Smart trait.



Weapon: Spigot Mortar

Type: Reusable Launcher

Component	Cost	Weight	Other Factors
Receiver Type: Reusable Launcher, Light	Cr500	10kg	Quickdraw -8 Bulky
Ammunition Type: Rocket-Propelled Grenade	Cr150	5kg	Base Range: 500m Base Ammunition Capacity: 1 Rocket-Propelled Grenade Signature: Physical (normal)
Totals	Cr650	15kg	—

The cost and weight of the weapon are calculated with one anti-armour grenade in place, which is the usual configuration. It is unusual, but not unknown, for users to carry a mix of grenade types. However, the standard

role of these weapons is to engage armoured vehicles and every grenade of another type is extra weight to carry which does not serve that purpose.

Weapon	TL	Range	Damage	Kg	Cost	Traits
Spigot Mortar	6	500m	10D	10	Cr650	AP 12, Blast 4, Inaccurate -2

WHAITE INDUSTRIES 30MM LIGHT MUNITIONS LAUNCHER

The Light Munitions Launcher is a magazine-fed semi-automatic grenade launcher developed for riot control and security work, but which sees action in a variety of roles. Its short barrel and bullpup configuration are well suited to close-quarters work, and the limited effective range of 100m is irrelevant in its intended application. The weapon is fed from a three-round detachable magazine inserted through the stock, plus one round

ready in the chamber. A magazine cut-off allows a single round to be loaded directly into the breech, leaving those in the magazine in reserve. ‘One gas, three baton’ is a standard rapid-fire response to an advancing crowd, though some entry teams prefer one distraction and three multiple projectile rounds for room clearance. Most light cartridge grenades can be launched from this weapon, but RAM grenades cannot.



Weapon: Light Munition Launcher

Type: Semi-Automatic Cartridge Grenade Launcher

Component	Cost	Weight	Other Factors
Receiver Type: Semi-Automatic Grenade Launcher, Light	Cr400	2.5kg	Quickdraw -8
Ammunition Type: Light Cartridge Grenade	—	—	Base Range: 200m Base Ammunition Capacity: 3 Rounds Signature: Physical (normal) Bulky
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Feature: Bullpup	+25%		Quickdraw +2
Receiver Totals	Cr750	2kg	—
Barrel: Assault Weapon	Cr112.5	0.6kg	Quickdraw +2, Range 100m
Stock: Fixed	Cr75	0.2kg	—
Totals	Cr940	2.8kg	—

Light cartridge grenades are primarily useful for anti-personnel work or security operations. It is rare to find a grenadier with a mixed load – usually all grenade carried

are ‘security’ types or all are lethal types. The exception is distraction rounds which have tactical applications in both situations.

WHAITE INDUSTRIES 30MM LIGHT MUNITIONS LAUNCHER

Weapon	TL	Range	Damage	Kg	Cost	Traits
Light Cartridge Grenade, Incapacitant Gas	7	200m	-	0.5	Cr125	Blast 3
Light Cartridge Grenade, Baton	7	200m	Stun 1D	0.3	Cr13	Lo-Pen 3
Light Cartridge Grenade, Distraction	7	200m	Distraction (typical)	0.3	Cr30	—
Light Cartridge Grenade, Multiple Projectile	7	200m	5D	0.4	Cr25	Lo-Pen 3, Spread 2

INTERSTELLAR ORDNANCE 42MM ADVANCED SQUAD SUPPORT WEAPON

Based on a traditional rotary magazine-fed RAM grenade launcher design, Interstellar Ordnance offer a six-shot semi-automatic weapon with squad guidance. The launcher can be used with standard cartridge grenades of almost any type, but comes into its own when launching guided RAM grenades. The weapon weighs

in at a hefty 6kg when unloaded, increasing to just over 9kg when fully loaded. Some users consider launchers of this sort to be a form of assault weapon, sweeping a room with multiple projectile rounds to clear out unarmoured opponents.



Weapon: Advanced Squad Support Weapon

Type: Semi-Automatic RAM
Grenade Launcher

Component	Cost	Weight	Other Factors
Receiver Type: Semi-Automatic Grenade Launcher, Standard	Cr500	3.5kg	Quickdraw -8
Ammunition Type: Standard RAM or cartridge Grenade	—	—	Base Range: 300m Base Ammunition Capacity: 3 Rounds Signature: Physical (normal) Bulky
Receiver Feature: Rugged	+30%	+10%	—
Receiver Totals	Cr6500	3.85kg	—
Barrel: Rifle	Cr1950	1.925kg	—
Stock: Fixed	Cr975	0.385kg	—
Accessories: Fixed Drum	Cr325	(3kg)	Ammunition Capacity 6 Rounds
Totals	Cr9750	6.16kg	—

The two commonest loadouts for this weapon are either guided antipersonnel fragmentation grenades or multiple projectile shells. Loading is rarely mixed as the grenades are launched in sequence, though a squad preparing to breach a room or position might

try to set up a pre-selected sequence to maximise their advantages. In such a situation a distraction grenade immediately followed by gas then baton rounds might be used to subdue a room's occupants, or a stun grenade followed by multiple fragmentation rounds for overkill.

INTERSTELLAR ORDNANCE 42MM ADVANCED SQUAD SUPPORT WEAPON

Weapon	TL	Range	Damage	Kg	Cost	Traits
RAM Grenade, Guided Fragmentation	9	300m	5D	0.5	Cr90	Blast 3, Lo-Pen 2
Cartridge Grenade, Multiple projectile	7	200m	6D	0.9	Cr40	Lo-Pen 3, Spread 4
Cartridge Grenade, Distraction	7	200m	Distraction (potent)	0.6	Cr150	—
Cartridge Grenade, Incapacitant Gas	7	200m	Varies	0.5	Cr125	Blast 3
Cartridge Grenade, Baton	7	200m	Stun 2D	0.5	Cr25	—
Cartridge Grenade, Stun	7	200m	Stun 3D	0.5	Cr75	Blast 9

XEIRBIN COMPONENTS TACTICAL MULTIROLE MISSILE SYSTEM

One of the lightest TAC missile launchers available, Xierbin's TMMS is designed to be carried by a team of two infantry soldiers, one with the launcher and one carrying a loaded missile magazine. Additional missiles or magazines can be shared out among the squad. The weapon is fed from a 2-round over-under magazine located at the rear of the receiver. Launch takes place directly from the magazine, which then rotates on a pivot to present the second weapon. Once both have been launched can be ejected and replaced with a fully loaded magazine, or reloaded with loose missiles.

The TMMS is designed to engage vehicles and aircraft using a multimode warhead 'smart' missile, but can launch unguided rockets if the need arises. A magazine can contain two different types of missile – for example one anti-personnel and one anti-armour – and can switch between the two by triggering the magazine rotate function. A magazine with two missiles aboard typically weighs 13.2kg.



Weapon: Tactical Multirole Missile System

Type: Light TAC Missile Launcher

Component	Cost	Weight	Other Factors
Receiver Type: Magazine-Fed, Light	Cr750	12kg	Quickdraw -8
Ammunition Type: Light Tac Missile	—	—	Base Range: 1,000m Base Ammunition Capacity: 3 Rounds Signature: Physical (normal) Bulky
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Feature: Very Compact	+40%	-20%	Ammunition Capacity – 50%
Receiver Feature: Guidance System	+50%	—	May launch smart missiles
Receiver Totals	Cr1127.9	7.68kg	—
Totals	Cr1125	20.88kg	2 missiles in magazine adds 13.2kg

A range of missiles are available, most with performance similar to the AV-7 missile described on the following page.

XEIRBIN COMPONENTS TACTICAL MULTIROLE MISSILE SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Traits
AV-7 Missile (contact mode)	10	1,000m	6D	6	Cr12000	AP 12, Blast 4, Smart
AV-7 Missile (proximity mode)	10	1,000m	4D	6	Cr12000	AP 8, Blast 12, Smart

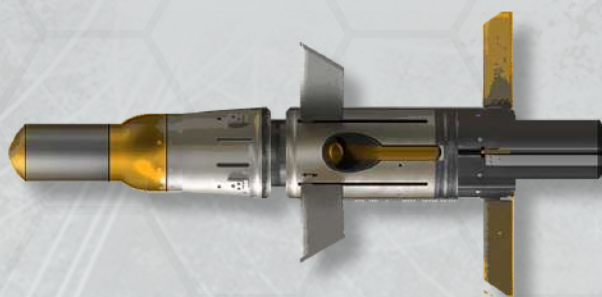
GRENADES AND WARHEAD DELIVERY SYSTEMS

Grenades and warhead weapons tend to fall into four categories. Those intended to directly inflict casualties are generally of an explosive type, either as anti-personnel or anti-armour weapons, though other options are available. Those intended to degrade the capabilities of an enemy typically use gas, flash or noise, possibly in the form of a stunning concussion effect, and might be termed distraction grenades. The third type of grenade alters the tactical situation, usually by obscuring vision or making laser-based devices ineffective. Smoke can also be used for signalling. Signalling grenades typically use colours or – at higher Tech Levels – laser-reflective particles that can identify one platoon of smoke from another. Signalling grenades cost the same as a smoke grenade of the type but are little use as obscurants.

AV-7 MISSILE (TL10)

A typical light guided TAC missile, the AV-7 is designated Tactical, Light, Multipurpose Anti-Vehicular in most military directories. Its guidance electronics and supporting sensors are capable of tracking fast-moving targets at high and low altitude, though in order to intercept fast-crossing targets the operator must provide the missile with considerable lead. The multimode warhead can be detonated as a fragmenting charge to give the best chance of a hit on an aircraft, or as a shaped-charge against armoured targets. The fragmentation effect is not intended for use against personnel; it produces multiple large fragments rather than a hail of smaller ones, and is likely to miss

something as small as an individual soldier. Proximity detonation grants an additional DM+2 to hit vehicular targets but significantly reduces damage. Missiles weigh 6kg and cost Cr12000.



Weapon	TL	Range	Damage	Kg	Cost	Traits
AV-7 Missile (Contact Mode)	10	1,000m	6D	6	Cr12000	AP 12, Blast 4, Smart
AV-7 Missile (Proximity Mode)	10	1,000m	4D	6	Cr12000	AP 8, Blast 12, Smart

GRENADE, ANTI-ARMOUR

A low-tech solution to the problem of armoured vehicles, the anti-armour grenade also offers marginal capability against combat armour and battle dress. The hand-thrown version is a weapon of utter desperation against such opponents as it requires getting very close and hoping the weapon hits cleanly. Even then, the focussed plasma jet created by its shaped-charge warhead is generally ineffective, but enough of these weapons can make the battlefield unhealthy for armoured troops. A hand-thrown anti-armour grenade costs Cr50 and weighs 0.5kg. The rifle grenade version, with much better range and accuracy, costs Cr100 and weighs 0.625kg.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Anti-Armour Hand Grenade	6	20m	4D	0.5	Cr50	AP 8, Blast 1
Anti-Armour Rifle Grenade	6	100m	4D	0.625	Cr100	AP 8, Blast 1

GRENADE, MINI, MULTI-PURPOSE ANTI-PERSONNEL

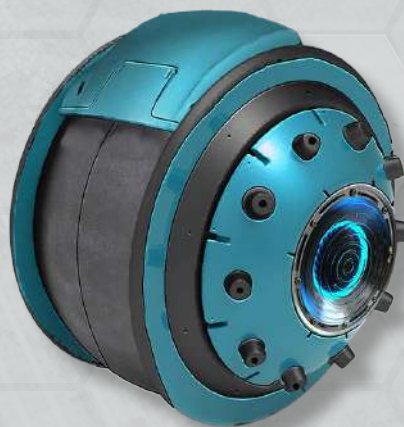
A small grenade with advanced fusing, these weapons are often carried in threes. The advanced fuse allows the grenade to be impact-fused or set to detonate one to ten seconds after impact, or after a one to ten second delay. A 'mine' setting also permits a grenade to be emplaced as a booby trap, detonating if disturbed. Depending on the sensitivity chosen this may require a sharp knock or something as minor as being tapped by a door as it opens. The detonation power can also be selected. Normally full power is chosen, creating a blast type anti-personnel effect with small amount of fragmentation. Damage can be selected as 1D, 2D or 3D, or the grenade can detonate in distraction mode in which case it causes a Typical level distraction but no damage. Multi-purpose grenades are expensive but considered worth it by some users. A single grenade weighs 0.3kg and costs Cr35.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Multipurpose Mini-Grenade	9	30m	1D to 3D or Typical Distraction	0.3	Cr35	Blast 4, Lo-Pen 2

GRENADE, MINE DELIVERY

Mine delivery grenades are unusual, but sometimes used to deploy anti-personnel mines at a distance or in inaccessible places. A mine delivery grenade is simply a canister with a basic self-righting mechanism. Once in place it can be remotely triggered or set to respond to a certain level of vibration. This is a little random at times but in theory a mine will activate when a person walks within 2m of it. Anyone who knows what to look out for can easily spot grenade-delivered mines in the open, but even then their presence can impose delay. They are commonly used as an early-warning system more than a serious defence. The warhead can be any mini-grenade type, though fragmentation and distraction types are most common. Mine delivery grenades are only available in standard cartridge and RAM grenade sizes.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Mine-Delivery Grenade	9	200m	As payload	0.6	Cr15 plus payload	—

GRENADE, SMART-RAM, PLASMA

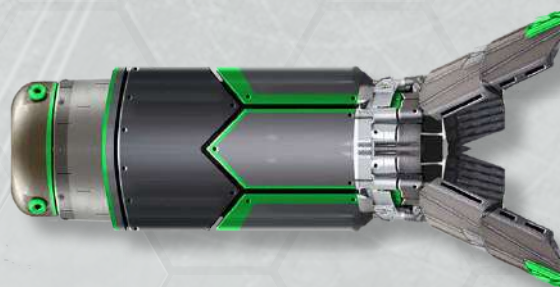
Plasma grenades are rare among troops not equipped with battle dress or combat armour, but sometimes encountered as emergency weapons or extreme room-clearance devices. The Smart-RAM grenade is designed to be launched by one soldier and designated or actively guided by another, though it can also be preprogrammed to travel to selected detonation point. The grenade is capable of limited manoeuvre, so must be sent on a trajectory that will bring it close to the intended destination for the guidance to be effective.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Plasma Smart-RAM Grenade	12	300m	8D	0.8	Cr200	Blast 6, Incendiary 4, Lo-Pen 2, Smart

RIFLE GRENADE, GUIDED

The humble rifle grenade makes a resurgence once cheap guidance kits become available. Basic guided grenades are programmed with a location and launched in a high arc, using inertial location or feeds from a satellite communications network to alter their trajectory using movable fins. A more advanced version is available for use against armoured targets. This is guided to the general target location the same way, but then seeks the outlines and signatures of a selected class of target. Usually this will be lightly armoured vehicles but grenades can be programmed to seek battle dress-equipped infantry. A top-attack profile makes these weapons useful against lightly armoured vehicles, and at least they will force commanders to button up and stay behind armour. Basic guidance adds Cr50 to the price of the grenade; terminal seeking adds another Cr100 on top.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Guided Rifle Grenade	8	100m	As payload	Varies	Cr50 or Cr150	Smart

ROCKET-PROPELLED GRENADE, ANTI-ARMOUR

A cheap and often marginal solution to the problem of armoured vehicles and fortified positions, an RPG typically carries a shaped-charge warhead capable of damaging lightly armoured vehicles. Grenades of this type are cheaply made in mid-tech factories and generally bought in large numbers. Accurate shooting with an unguided rocket weapon is problematic, making short-range ambush or massed fire the best tactic. An anti-armour RPG costs Cr150 when bought singly and weighs 5kg.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Anti-Armour RPG	6	500m	5D	5	Cr150	AP 10, Blast 4, Inaccurate -2

C H A P T E R - S I X

PERSONAL EQUIPMENT

Personal equipment ranges from humble boots to advanced electronic devices. The variations on offer can be bewildering, but mercenaries typically avoid gimmicky one-trick-pony items and extremes of high

and low price. Cost-effectiveness is usually the deciding factor in choosing what equipment to issue to a unit, though individuals may decide to provide themselves with something a little more capable.

DEVICES

Many of the devices used by mercenaries are also found in specialist industries where protection or specific capabilities are needed. Others are unique to the military marketplace. Civilians outside specialist industries may find it difficult to obtain these devices, but they are generally available from mercenary outfitters.

EXTERNAL THERMAL REGULATION UNIT (‘CHILL CAN’)

Thermal regulation units are built into some advanced armour, but more commonly available as a separate item. Typically carried on an equipment belt and connected to an environment suit or advanced field dress, a thermal regulation unit acts as a heat sink most of the time. It contains a gel with an extremely high specific heat capacity, which can store thermal energy taken from a suit or piece of equipment. Devices of this kind can be used to cool suitably adapted weapons, allowing protracted periods of rapid fire, or can reduce the thermal signature of a soldier wearing appropriate clothing.

If used to reduce thermal signature, a chill can is good for around four hours, during which time the user's thermal signature is reduced almost to background levels. This imposes DM-4 on attempts to detect, track or target the individual using thermal sensors. By the end of the period the unit is saturated and thermal suppression is lost. The gel does not reach high temperatures; little more than the user's body temperature, but a can could be deliberately ruptured to create a thermal decoy. The unit can

protect the user against unpleasantly hot conditions rather than reducing thermal signature, and in an emergency a reverse reaction can be triggered which introduces an additional chemical into the gel. This produces a modest amount of heat which can be put back into a suit to protect the user from cold.

If a chill can is used as a heat sink for weapons, it has a capacity of 100 points of Heat. Each 25 points of Heat reduces the duration of thermal signature reduction by 1 hour.



Item	TL	Kg	Cost
External Thermal Regulation Unit	10	1	Cr50

FARADAY WEAVE

Faraday weave is a web of ultrafine metallic threads within or under the fabric of a garment, camouflage net or covering. The threads are too fine to provide any protection from electromagnetic pulse; the induced current will make them hot, possibly sufficiently so to set fire to the garment or harm the wearer. However, lower-intensity electromagnetic waves will be absorbed and dissipated, concealing whatever is underneath. The weave will also conceal low-level electromagnetic emissions from equipment. Faraday weave is quite expensive, costing Cr250 to install in a set of clothes or a 3x3m covering. A small belt-mounted power and control device, costing Cr500, adds an additional capability; whereas faraday weave normally blocks waves and conceals what is behind it – but is itself very obvious – the control device can be set to match the incoming emissions, effectively rendering whatever it is covered in invisible to radar and similar sensors. This is not perfect but imposes DM-4 on attempts to detect the user with radar and similar emissions.



Item	TL	Kg	Cost
Faraday Weave	12	—	Cr250
Faraday Weave Control Device	12	0.4	Cr500

MATCH TARP

A match tarp is a one-use camouflage device. Before use it is a dull matte grey colour but when spread on the ground its underside scans the terrain beneath and triggers chemical changes in the upper side to match it almost perfectly. A person or object placed under the tarp will be almost perfectly concealed, and the tarp will

also spread out any thermal signature to make it far less obvious. Once activated, the changes are permanent but the tarp remains effective in the same terrain. A 3m square tarpaulin – which is also weatherproof – costs Cr250, whilst a smaller version large enough to cover a prone sniper and weapon costs Cr150.



Item	TL	Kg	Cost
Match Tarp	11	1.5	Cr250 or Cr150

THERMAL REGULATION COVERING

A thermal regulation covering is supplied in a form that can be used as a blanket or poncho, as half of a field shelter, a groundsheet or a thermal camouflage device. As a shelter or poncho it is normally worn with the ‘cool’ side outward, keeping the wearer warm whilst reducing their thermal signature. Turned around, the covering will leech heat away from the user and radiate it outside. This has a cooling effect and can also be used as a distress or target-marking beacon. A heat source placed under a thermal regulation covering will create a large share of high thermal radiation unlikely to be missed by sensors.

On its own a thermal regulation covering passively provides thermal protection and dispersion sufficient to provide DM+2 on all checks to resist harm from cold or hot conditions, and DM-2 to attempts to spot or target the user if used as camouflage. When used with a small (pocket-sized) battery pack it can create a warm shelter for some days, and with a chill can will reduce the wearer’s thermal signature to match the surroundings. A standard thermal regulation covering costs Cr50, with versions intended to fit a particular environment or to match a sniper’s camouflage costing up to Cr150.



Item	TL	Kg	Cost
Thermal Regulation Covering	10	1	Cr50 or Cr150

CLOTHING AND ARMOUR

It is rare for any but the largest mercenary units to use custom-made equipment, and this applies equally to clothing and armour. Day-to-day items like t-shirts and socks can be obtained commercially or ordered from a local supplier, whilst uniforms tend to be selected from a range of items offered by mercenary outfitters. By selecting a combination of clothing items, colours and configurable insignia, a unit can create a distinctive uniform without going to the expense of setting up a bespoke outfit.

Most mercenary units have clothing for different occasions. Working dress is worn most of the time, and typically consists of coveralls in the unit's style. Field dress is similar but more attention may be paid to camouflage. Field dress is intended to be worn with body armour and combat equipment, and usually has attachment points for the unit's standard field equipment. Most, but by no means all, units have a formal uniform. Mercenaries are rarely concerned with ceremony but may need to look presentable to impress a client or when working with one under non-combat conditions. Full mess dress uniform is very rare among mercenary units. The largest sometimes use it, as do some highly pretentious formations, but as a rule a unit whose combat reputation does not justify frippery will attract ridicule.

DISCREET OPERATIONS UNIFORM

Although commonly referred to as a uniform, discreet operations clothing can be tailored in almost any style. Operators may need to pass as ordinary civilians, or to wear formal uniform but be ready for action. A discreet operations uniform is tailored from light ballistic cloth and has pockets suitable for concealing a handgun and some small items of equipment. It is favoured by officers who have to do a lot of liaison work and cannot be seen to be armed or mistrustful of their clients, but also sees considerable use by covert-operations forces.

The uniform grants Protection +2 without appearing to do so, and can be paired with what is inevitably known as an 'indiscreet operations kit' consisting of a flak jacket and associated supporting equipment. This is normally black or green, but can be produced in other colours. At a distance, someone wearing the full kit might not attract notice but anyone taking a proper look at the wearer will notice magazine pouches and an obvious military styling even if the wearer does not have a visible weapon. When paired up with the flak jacket the kit offers Protection +6.



Armour Type	Protection	TL	Rad	Kg	Cost	Required Skill
Discreet Operations Uniform	+2	10	—	1	Cr100	None
DOU with Combat Kit	+6	10	—	4	Cr600	None

ENVIRONMENT SUIT

An environment suit is not necessarily a piece of military equipment. Hazardous-environment workers use them, since they bridge the gap between full vacuum protection and exposure to airborne hazards. An environment suit is a coverall-like garment with detachable boots and gloves. It includes a hood which seals to a face mask to give complete protection but is often paired with a full helmet and/or chest unit.

On its own, an environment suit affords the wearer Protection +3 against conventional threats and an additional Protection +3 against heat or cold attacks. Its belt unit has space for an air bottle, rebreather unit and up to two external thermal regulation units. With these in place the suit can be made active, increasing its defence against heat and cold to a total of Protection +12. The suit can also be tuned to be thermally neutral, or close to it, with respect to its surroundings. This feature is rarely used in industry but is useful to mercenaries.

A shoulder-and-helmet unit is available to pair up with the suit. This is a full, sealed helmet which provides better head and neck protection than the flexible hood, and is heavier but more comfortable than a mask. Most users have devices mounted on the shoulder piece such as flashlights, cameras and sensors which display their information on the inside of the user's faceplate. A chest piece is also available, increasing armour to Protection +6 and housing an array of tools or weapon pouches.



Armour Type	Protection	TL	Rad	Kg	Cost	Traits
Environment Suit	+3 (+6 vs heat and cold)	11	—	4	Cr2000	Corrosion-Resistant (+3)
Environment Suit with Hood and Mask	+3 (+12 vs heat and cold)	11	—	5	Cr2000	Corrosion-Resistant (+3)
Environment Suit with Chest Piece and Full Helmet	+9 (+12 vs heat and cold)	11	—	8	Cr2800	Corrosion-Resistant (+3)

FIELD DRESS, ADVANCED

Advanced field dress is a more technologically advanced version of enhanced field dress. It offers Protection +1 and DM+2 to resist chemical agents. Thermal protection is increased to DM-2 for attempts to detect the user, and if an external thermal regulation unit is in use the suit can offer additional benefits.

Armour Type	Protection	TL	Rad	Kg	Cost	Required Skill
Advanced Field Dress	+1	10	—	2	Cr250	None



FIELD DRESS, ENHANCED

Field dress bought in bulk tends to be serviceable and hard-wearing but offers few benefits beyond that. Enhanced field dress incorporates technological advances to protect the user, including a technique known as ‘thermal dulling’ whereby the wearer’s thermal signature is reduced and made fuzzy. This imposes DM-1 on attempts to detect or target the wearer using thermal systems. In addition, a suit of enhanced field dress provides Protection +1 which stacks with other armour worn over the top. Enhanced field dress is not entirely impervious to airborne chemical agents but does provide DM+1 to resist the effects of skin-absorbed agents. The wearer needs an enclosed helmet or breathing system to receive this protection from airborne agents but would benefit from it when dashing through a contaminated area without breathing, or in case of a chemical splash.

Armour Type	Protection	TL	Rad	Kg	Cost	Required Skill
Enhanced Field Dress	+1	8	—	—	Cr100	None

UNIFORM BUNDLE

Commonly sold as a pack to individual mercenaries or provided in bulk to units, a uniform bundle contains three sets of working dress, two sets of field dress and one formal uniform to the unit's specifications. Formal shoes and field boots are included along with headgear and any minor accessories such as cap badges, rank insignia and so forth. Costs can vary but typically a bundle of this sort will cost around Cr50 depending on the source and complexity of the outfits.

Item	TL	Kg	Cost
Uniform Bundle	Varies	—	Cr50



ELECTRONICS

Military electronics tends to be more robust and resistant to hazards like electromagnetic pulses than civilian devices, though usually capabilities are about the same. Indeed, once the device is opened up it may well be exactly the same as a civilian model, just housed in a milspec rugged case with a matte green finish. Military electronics systems are always more expensive than their civilian counterparts, so units on a budget will often make do with those. However, all military systems have at least some basic protection against hacking and electronic warfare – and perhaps more importantly they have interoperability protocols which allow them to interface with other standardised military systems.

A military portacomp can be plugged straight into an information or systems control net and used as soon as the security protocols are satisfied. A civilian model would require additional software and possibly an external drive containing the necessary operating system patches and interfacing software. Milspec electronics almost always has a set of security protocols that impose a negative DM on attempts to hack or interfere with the system equal to 1 plus 1 per 2 full Tech Levels above the intruding system. This is in addition to any anti-intrusion software

AUTOHACK

Autohacks are palm-sized devices designed to crack commonly available electronic security systems. They are not creative or clever, but programmed to recognise common security systems and automatically apply exploits or make a targeted attack. Some systems require all software producers to leave a backdoor for the security services, in which case a properly authorised autohack need do no more than input a request code. Autohacks are useless against any system they do not know but extremely useful in getting past mass-market security software that would otherwise pose a significant problem.

Possession of autohacks is highly restricted, with black market devices commanding high prices. Mercenary units can usually obtain a license for the standard autohack without undue difficulty, though their use will occasionally be audited. A preprogrammed autohack might be provided for a particular mission, in which case it will have been set up to defeat the target's security even if it would normally be immune.

For example, a mercenary unit has been hired to retrieve certain items from the evidence lockers of a local police force. The cops are using a commercially available security system – quite a good one in fact. A standard autohack will defeat the security on most personal devices found in the building, as these use common systems 'known' to the unit, but it does not have the tools to attack the specialist system at the police station as its vulnerabilities are not widely known. However, the client has obtained enough information to put together a package that should be able to defeat the system, and added it to a standard autohack. The mercenaries now have a single autohack that can get them through doors or into inventory systems. If it is not available at any point they will have to use conventional intrusion methods to get into the computer system or parts of the building.

Autohacks require no skill to operate. They will normally be able to interface with nearby electronic systems without contact, but systems that do not communicate wirelessly require access to the network. This may require finding a suitable port, but from TL10 upwards autohacks can use a close-contact induction system to communicate with electronics that are not well shielded. Military systems are generally immune to this form of attack, but most commercially available networks are not. A single action, such as opening a locked door or gaining control over a camera, takes 1Dx10 seconds if it is possible at all. Only one attempt can be made at any one system – either the autohack can get in or it cannot. Its chance of doing so is based on Tech Level but may be modified for good or bad system security. If the Autohack is of lower TL than the security system an additional DM-1 applies for each TL below.



AUTOHACK

TL	Cost	Difficulty
8	Cr5000	Very Difficult (12+)
9	Cr5000	Difficult (10+)
10	Cr7500	Average (8+)
12	Cr10000	Routine (6+)
14	Cr15000	Easy (4+)

Item	TL	Kg	Cost
Autohack	8-14	0.1	Varies

COMM SCRAMBLER

A comm scrambler is a small device usually fitted inside the case of a standard personal comm or into a port on a civilian portacomp. Normally, civilian devices transmit and receive a standard code and style of encryption for the network. This includes sufficient encryption to secure comms against casual intrusion but a comm scrambler provides much greater security by making the signal indecipherable to the system's own software. Another scrambler or a military device with the correct decryption codes can read signals, but anyone else would have to undertake a serious decryption effort. More advanced units provide greater security; DM-1 applies to any attempt to decrypt scrambled comms per Tech Level the scrambler is above the decryption system.



Item	TL	Kg	Cost
Comm Scrambler	8	—	Cr75

INTERFACE BOX

Interface boxes are a cheap and simple way to make civilian electronic devices compatible with military equipment. An interface box fits to an external port on the device and allows physical and electronic connection to a military network. The device contains a small computer which translates signals going in and out of the civilian device, essentially acting as a translator. The interface box provides some measure of electronic security to the device, but if it can be bypassed the civilian device behind it is still vulnerable to intrusion whereas a full military unit has integrated protection.



Item	TL	Kg	Cost
Interface Box	8	—	Cr125

MILITARY PORTACOMP

A military portacomp is housed in a lightly armoured case which will provide Protection +6 to the contents or anyone hiding behind it. Cases are usually 'security black' or 'military green' but do come in other 'tactical' colours. The case is ruggedised, as are the internal components, and it will act as a faraday cage when closed. If a Traveller has time to slam the portacomp shut it will survive all but the most powerful electromagnetic pulse attacks. A military portacomp has interface systems for most standard equipment so can be used to control or program a point defence system, or undertake intelligence analysis work. Capabilities are not dissimilar to civilian equipment of the same Tech Level.



TL	Processing	Mass	Cost
7	Computer/0	8kg	Cr1500
8	Computer/1	5kg	Cr750
9	Computer/1	2kg	Cr500
10	Computer/2	1kg	Cr1000
11	Computer/2	1kg	Cr750
12	Computer/3	1kg	C2500
13	Computer/4	1kg	Cr5000
14	Computer/5	1kg	Cr10,000

MULTIFUNCTION ELECTRONIC DEVICE

A Multifunction Electronic Device, or MED, is a small wrist-mounted computer capable of being programmed to interface with all common battlefield electronics. Depending on the user's needs it can be set up to control Smart-RAM grenades in flight, display sensor data from a drone, monitor remote sensors, detonate a charge on command, or all of those. An MED has a modest amount of processing power and can run guidance programmes, but typically acts as an interface rather than handling complex tasks itself.

Item	TL	Kg	Cost
Multifunction Electronic Device	9	0.1	Cr125



TACTICAL RELAY NETWORK

It is possible to coordinate the actions of a small unit using personal communications equipment, but as the size of a force increases this becomes problematic. At its most basic a tactical relay network organises radio traffic into groups and channels. At TL6, when the system first becomes available, this is done by a manual operator but the role is soon taken over by dedicated electronic systems.

A tactical relay network operates as a set of local nodes, with members of different groups having access to some or all available channels; members of first section have their own internal comms, as does the support section. Section leaders are tied in to the platoon command net, and the platoon commander is in the company command group. Automated systems can devolve access if a sub-unit's command transmitted goes offline, and most networks have an emergency override that allows any member to transmit right across the network if necessary. The technological sophistication of the relay limits the level of the Tactics skill that can be applied using it, though a commander who can communicate directly is not so limited. Thus the leader of a squad can always use their full Tactics ability, but a commander two kilometres away can only assist to the level permitted by the network.

From TL8, visual information is shared in real time, and in addition to radio sets the unit's members are given body-worn or helmet cameras, and/or gun cameras. These have provided a great deal of evidence at inquiries over the years, and have useful applications as training and debrief aids. TL9+ units also project a holographic map of the battle zone with individuals and groups marked by their transponder codes. It takes a skilled user to make sense of all the data but a commander can – in theory at least – see where everyone is, how much ammunition they have left, and whether they are injured.

A tactical relay network consists of a central relay unit, housed in an 8kg backpack, and personal equipment to be issued to each member of the unit. The cost of the central unit depends on the size of the network desired.

Platoon Network: Up to 50 users, Cr25000

Company Network: Up to 250 users: Cr100000

Battalion Network: Up to 1,000 users: Cr 250000

Increasing technological sophistication improves performance rather than bringing cost down, and individual-issue equipment must be purchased for every user.



TL	Information Relayed	Max. Tactics Level	Additional Cost Per Unit Member
TL6	Audio only	Tactics 1	Cr50
TL8	Audio and visual	Tactics 2	Cr100
TL10	A/V, transponder location, basic equipment status, Computer/0	Tactics 3	Cr200
TL12	A/V, detailed medical readings and equipment status, Computer/1	Tactics 5	Cr350

Item	TL	Kg	Cost
Tactical Relay Network	6-12	8	Varies

SENSORS AND TARGETING AIDS

Beyond immediate 'point and shoot' combat, one of the most decisive factors in battle is the quality of sighting aids. Those that fit on a weapon are considered to be weapon accessories, but more sophisticated equipment is often carried on the soldier's person, receiving input from sensors on the soldier's own weapon and possibly remote sensor feeds too. Typically the resulting images and prompts are displayed on a helmet visor or similar physical surface but can be projected as a hologram at a location designated by the user.

BALLISTIC LOCATION SENSOR

This detects the sound of a gunshot or similar weapon and attempts to pinpoint its location using a map of the surrounding area. Multiple echoes off the walls of an urban area can complicate the process, but the system can 'learn' the sound patterns of its surroundings to make zeroing in on the location easier with successive shots. Once set up the operator can make an Average (8+) Electronics (sensors) check to locate the source of a weapon discharge by using its physical signature. The check is modified by the weapon's signature level and any other factors such as acoustically complex terrain. A cumulative DM+1 applies to subsequent from the same position by a weapon of similar type.

Item	TL	Kg	Cost
Ballistic Location Sensor	8	2.5	Cr1500
Return Fire Unit	9	3	Cr5000

At TL9, an improved version becomes available which can automatically control an attached weapon. The weapon must be on a tripod or support mount to which the auto-aiming device is attached. It can be set to automatically return fire with a single shot, multiple attacks or not at all depending on the user's preferences at the time. It does not include a weapon or mount for one.



BATTLEFIELD COORDINATION UNIT

A battlefield coordination unit is a backpack-sized communications and administration centre. Its holographic display can project maps and images as well as sensor input, and the unit can undertake limited analysis to suggest likely meanings of data. For example, the unit can cross-reference incoming passive sensor information on the emissions of an enemy unit with other known data to produce an estimate of the formation's composition and state of readiness. A battlefield coordination unit grants DM+1 on Tactics checks and related tasks, such as requesting artillery fire on a very precise location. The whole unit weighs 6kg, or about twice that if stands, folding stools and other comfort accessories are included.

Item	TL	Kg	Cost
Battlefield Coordination Unit	9	6	Cr12000
Battlefield Coordination Unit with Field Furniture	9	13	Cr13500



BIOMASS SIGHTING AID

Using the thermal signature of a target and a densitometer, this device 'fills in' the outline of targets on its display. Although occasionally spectacularly wrong, a biomass sighting aid reduces the DM for cover by 2 and can 'see' through up to 20cm of inorganic material. The TL12 version is more sophisticated and can eliminate a DM due to cover by 4 points. The sighting aid can be mounted on a weapon or operated separately.



Item	TL	Kg	Cost
Biomass Sighting Aid	10	1	Cr250
Biomass Sighting Aid	12	0.5	Cr750

INTEGRATED WEAPON SCANNER

Various means of detecting weapons are available at lower Tech Levels, but an integrated weapon scanner offers all their capabilities and more. Taking the form of a hand-held device it searches for magnetic signatures and chemical traces as well as emitting soft ultrasound which can reveal the shape of objects under clothing. This does not guarantee a weapon will be found but permits the user to make an Average (8+) Investigate check to spot anything untoward. This check is modified for stealthy equipment or disguised weapons.



Item	TL	Kg	Cost
Integrated Weapon Scanner	10	0.6	Cr900

LASER DESIGNATOR

A basic laser designator becomes available at TL6. It 'paints' a target by projecting a laser onto it, allowing a guided munition to home in on the reflected radiation. Much depends on the ability of the user to keep the weapon on target; the munition will follow a moving spot as best it can. Designators also act as rangefinders. At TL9, a much smaller designator is available, which can be mounted on a personal weapon.



Item	TL	Kg	Cost
Laser Designator, Handheld	6	5	Cr5000
Laser Designator, Weapon Mounted	9	0.2	Cr1000

NBC ANALYSIS/ALERT UNIT

More basic versions of NBC (Nuclear, Biological, Chemical) detection equipment are available at lower Tech Levels, but the TL9 alert/analysis unit provides greater accuracy and more useful information. The database contains key signs of various agents and pathogens, and can provide information on protection and treatment of casualties; it is not a full biological analysis unit capable of analysing an unknown disease or infection and can register false conclusions if it encounters what appears to be a known substance. It is designed to be carried on a belt or pack strap but can be attached almost anywhere.



Item	TL	Kg	Cost
NBC Analysis/Alert Unit	9	0.1	Cr250

PERSONAL HEADS-UP DISPLAY/HUD

A personal HUD provides the user with data as well as a targeting prompt. It is usually controlled from a wrist-mounted device, with some pre-set voice commands. The device can project any data available to it, and if a communications net is available it can interrogate nearby civilian databases or communicate with them. On the battlefield its primary function is to provide a targeting prompt in the form of an aim point superimposed on an image of the target. Various display

devices are available, ranging from a helmet visor to a pair of designer shades. A HUD grants DM+2 on attack rolls at all ranges, for any weapon it is keyed to. It costs Cr1500 and weighs 0.5kg, and comes with pickups for one weapon. A set for an additional weapon requires an hour or so to fit and calibrate. There is no real limit on how many weapons can be calibrated to one HUD. At TL11 the HUD is a holographic projector and no obvious visual device need be worn.



Item	TL	Kg	Cost
Personal HUD	9	0.5	Cr1500
Personal HUD	11	—	Cr2500

SUPPORT WEAPONRY

Support weaponry includes weapons too large and/or heavy to be carried and operated by a single infantry soldier without the assistance of powered armour. It

ranges from heavy machineguns and similar weapons to light artillery and aerospace defence equipment.

CLOSEGUARD SEMI-AUTONOMOUS POINT DEFENCE SYSTEM

The Closeguard system is designed to provide short-range defence against ground, air and missile threats. It is aimed at the mid-price market, and sacrifices top-end capability for reliability and ease of maintenance. Although constructed at TL9 the system has the ability to use lower-tech components in most areas if necessary. The unit is housed in a robust but unarmoured cylindrical mounting which has three detachable legs allowing it to be emplaced in the field. If these are removed, the unit can be installed in a vehicle or aboard a watercraft with a minimum of hull penetrations. This takes up 1 Space. A standardised connector block allows power to be fed to the unit and command signals to be received, but the internal batteries are good for 36 hours or more of deployed use with no external power feed. The unit can be programmed or directly controlled with a dedicated portacomp, either by direct cable connection or local-area radio link. The latter has the disadvantage of being vulnerable to electronic warfare.

The Closeguard unit has its own short-range radar and thermal sensors mounted atop the receiver block of the primary weapon. This is usually a rapid-fire twin-mounted machinegun with an augmented cooling system, but variants do exist. A pair of TES-12 laser support weapons, usually set up to fire an instant apart to increase the likelihood of a hit, is a popular upgrade for those units that can afford the extra Cr40000 or so, or a twin rapid-fire heavy machinegun can be mounted instead. Closeguard is popular as a cheap anti-missile unit but has a loyal following as a 'homicidal sentry that never sleeps'. Units that employ it in this mode can set exemptions so their own people will not be attacked providing they carry the correct IFF transponder. The unit may still open fire on large passing wildlife, though its targeting parameters are generally good enough that it can tell a deer from a human.

The Closeguard unit has Point Defence 2; it can engage two targets of the same general type – ground, high airborne or low airborne – in a given round. Its automatic targeting system provides DM+2 to hit.



CLOSEGUARD SEMI-AUTONOMOUS POINT DEFENCE SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Closeguard (machinegun)	9	375m	3D+3	32	Cr123000	50	Cr50	Auto 3, Physical Signature (normal), Slow Loader 4
Closeguard (twin RF heavy machinegun)	9	550m	7D	110	Cr175000	50	Cr750	Auto 3, Bulky, Signature (hight, Slow Loader 4
Closeguard (twin laser support weapon)	9	625m	8D	45	Cr160000	125	Cr5000	Bulky, Emissions Signature (low), Zero-G

MDD INFANTRY SUPPORT WEAPON SYSTEM

The origins of the term 'Ma Deuce' for a heavy machinegun date back to old Earth, where the definitive heavy machinegun was designated M2. More advanced weapons fulfilling the same role ended up being referred to by the same nickname, until eventually a whole family of similar but more advanced weapons emerged. These are known as the 'MDD family', from 'Ma Deuce's Daughters'. Governments have their own designations for specific members of the family, but to the typical mercenary they are all the Beautiful Daughters of Old Lady Deuce. This in turn leads to jargon that can seem incomprehensible to the average civilian, but a mercenary who hears 'Mike Two Delta on the field!' knows there is a heavy automatic weapon nearby. Whether that is a good thing depends on which side is using it.

The most common form of the MDD type is a heavy automatic weapon in the 12-15mm range. Most users have standardised on 15mm as the standard light anti-vehicle/anti-materiel/heavy antipersonnel weapon. It is just about possible for an infantry squad to lug a dismantled MDD-15 into position, though normally they are emplaced or mounted on vehicles. 50-round lengths of belt are standard when setting up a weapon, but any length can be produced by fixing sections together.



Weapon: MDD-15

Type: Support Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Support Weapon	Cr3000	10kg	Quickdraw -8 Base Ammunition Capacity 50 rounds
Ammunition Type: Anti-Materiel	—	—	Base Damage: 5D Ammunition Cost: Cr1500 per 100 rounds Base Range: 500m Ammunition Capacity -60% Signature: Physical (extreme) Bulky
Mechanism: Fully Automatic	+20%	—	Auto 3
Receiver Totals	Cr3600	10kg	—
Barrel: Long, Heavy	Cr3600	15kg	Range +10% Quickdraw -1
Stock: Support Mount	Cr900	10kg	—
Accessory: Scope	Cr50	0.2kg	Scope
Totals	Cr9050	35.2kg	—

A version of the MDD-15 with a powered feed system is a common primary weapon mounting for light vehicles or as an anti-personnel weapon aboard larger ones. Auto is increased to 4, increasing weight to 56.7kg and cost to Cr28100. Some users twin-mount such weapons,

effectively creating a rapid-fire machinegun. The single-mount version will fit on a pintle or ring mount, but the bulk of a twin-mount system requires an open mounting equivalent to a small turret.

MDD INFANTRY SUPPORT WEAPON SYSTEM

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
MDD-15 Heavy Machinegun	8	550m	5D	35.2	Cr9050	50	Cr750	-9	Auto 3, Bulky, Scope
MDD-15 Chain Gun	8	550m	5D	56.7	Cr28100	50	Cr750	-9	Auto 4, Bulky, Scope
MDD-15 Twin Chain Gun	8	550m	7D	113.4	Cr56200	50	Cr750	-9	Auto 4, Bulky, Scope

MDS ANTI-MATERIEL RIFLE

A variant of the MDD support weapon, the MDS is about the heaviest projectile weapon a human can carry. Nicknamed 'Ma Deuce's Sister' in mercenary jargon, the weapon uses a lightened version of the support weapon's receiver, modified to take magazines. It uses

an artillery recoil system and measures to reduce its enormous kick but is still not a weapon for the faint-hearted. The MDS is often encountered as an anti-battle dress weapon.



Weapon: MDS-15

Type: Support Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Support Weapon	Cr3000	10kg	Quickdraw -8 Base Ammunition Capacity: 50 rounds
Ammunition Type: Anti-Materiel	—	—	Base Damage: 5D Ammunition Cost: Cr1500 per 100 rounds Base Range: 500m Ammunition Capacity -60% Signature: Physical (extreme) Bulky
Mechanism: Semi-Automatic	—	—	—
Receiver Feature: Compact	+25%	-10%	Ammunition Capacity -25% (15 rounds)
Receiver Feature: Rugged	+30%	+10%	—
Receiver Feature: Lightweight	+50%	-20%	—
Receiver Feature: Recoil Compensation (-2)	+20%	+10%	Damage -3
Receiver Feature: Accurised	+100%	—	Accurised
Receiver Feature: High Quality	+100%	—	High Quality
Modified Ammunition Capacity -50%	-25%	-25%	Capacity 7 Rounds
Receiver Totals	Cr26325	6.54kg	—
Barrel: Long	Cr17550	4.905kg	Range +10% Quickdraw -1
Stock: Full Stock	Cr3510	0.654kg	—
Accessory: Scope	Cr50	0.2kg	Scope
Accessory: Bipod	Cr3510	1.308kg	—
Totals	Cr59720	13.607kg	—

The MDS-15 is a very heavy weapon but one with excellent striking power. It is sometimes used to disable vehicles by shooting the engine or power plant, and can penetrate most personal armour on a clean hit. A modified version is occasionally encountered, with

the long barrel substituted for an assault-length one. Typically used with a mix of explosive and multiple-projectile ammunition, this weapon is virtually uncontrollable for anyone not wearing battle dress but can devastate a small area with indiscriminate fire.

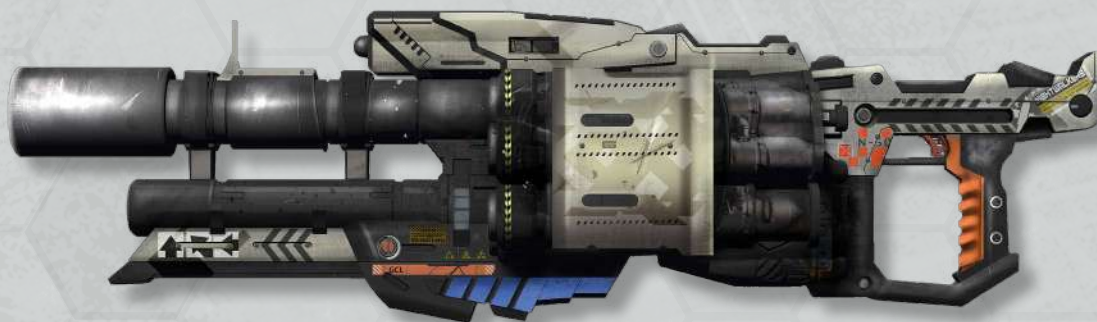
MDS ANTI-MATERIEL RIFLE

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
MDS-15	8	550m	5D-3	13.61	Cr59720	7	Cr150	-9	Bulky, Scope
MDD-15 (advanced AP)	8	550m	5D-5	13.61	Cr59720	7	Cr480	-9	AP 6, Bulky, Scope
MDS-15 (cut down, explosive)	8	250m	7D-3	10.76	Cr47435	7	Cr650	-9	Bulky, Lo-Pen 2
MDS-15 (cut down, pellet)	8	250m	5D-3	10.76	Cr47435	7	Cr150	-9	Bulky, Lo-Pen 4, Spread 3

PORCUPINE RIFLE GRENADE DISCHARGER

The 'Porky' consists of a baseplate weighing 3kg, with fittings for two rows of six rifle grenades. The baseplate can be angled to set up a spread of grenades aimed at a rough point 50-100m from the launcher. No grenades are supplied, but typically explosive warheads are preferred. Used with 'dumb' grenades the Porcupine is primarily a defensive or ambush

weapon, which can be relied upon to saturate an area with explosives. Grenades can be launched singly or in any combination, and will generally scatter quite badly. As a result the Porcupine is rarely seen in use with dumb grenades by forces with access to higher-tech equipment. When paired with more advanced grenades it can be very deadly.



Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Porcupine	7	100	As Grenade	8	Cr2500	12	As Grenade	As Grenade

TES-12 LASER SUPPORT WEAPON

TES-12 is an acronym for Targeted Energy Support, TL12. This weapon is often encountered as an infantry support/designation system and aboard vehicles for anti-personnel work. It is long and heavy, and not well suited to fluid actions, but hits hard for a laser weapon. The near-instantaneous arrival of the laser bolt is useful in some sniping situations, and the weapon can be used as a designator whether delivering damaging fire or purely as an artillery direction system. If used purely as a designator the power drain is negligible.

The TES-12 has an internal powerpack good for around 125 shots, which is enough for a short action, but is often used with a 3kg external power unit. This costs Cr 7500 and has Power 3,000. It may be carried by the weapon's user if operating solo but more commonly the support weapon gunner is provided with a spotter/security team of 1-2 additional personnel who carry additional powerpacks. These may be equipped with laser carbines, allowing 'buddy' recharging of their weapons from the support gun's power unit.



Weapon: TES-12

Type: Laser Support Weapon

Component	Cost	Weight	Other Factors
Receiver Type: Large Laser	Cr5000	8kg	Quickdraw -8 Maximum Power: Heavy Laser (8D) Base Range: 500m Damage: 8D Power Per Shot: 8
Receiver Feature: Efficient Beam Generation	+50%	-25%	Range +25%
Receiver Feature: Improved Beam Focus	+25%	—	Damage +3
Receiver Totals	Cr9375	6kg	—
Barrel: Long	Cr4687.5	4.5kg	Range +10% Quickdraw -1
Stock: Full Stock	Cr937.5	0.6kg	—
Accessory: Scope	Cr50	0.2kg	Scope
Accessory: Bipod	Cr937.5	1.2kg	—
Accessory: Internal Power Pack (1kg)	Cr2500	1kg	Power: 1000
Accessory: Laser Designator	Cr1000	0.2kg	—
Totals	Cr19487.5	13.7kg	—

A variant of the TES-12, designated TEA-12 (for Targeted Energy Assault) is fitted with a carbine barrel and folding stock. This greatly reduces weight

and enables a strong soldier to use it as a rifle-like weapon. Whilst very powerful, the TEA-12 is not at all quick on t

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Quickdraw	Traits
TES-12	8	625m	8D	13.7	Cr19500	125	Cr2500	-9	Bulky, Emissions Signature (low), Lo-Pen 2, Scope, Zero-G,
TEA-12	8	450m	8D	10.01	Cr17500	125	Cr2500	-4	Bulky, Emissions Signature (low), Lo-Pen 2, Scope, Zero-G,

C H A P T E R - E I G H T

SUPPORT EQUIPMENT

A great variety of support equipment is available to mercenary units. Generally multipurpose equipment is preferred but some problems require a specific solution. Whilst many pieces of supporting equipment are readily

carried by one person, larger items are normally either mounted on a vehicle or carried in one and deployed to a static position.

PERSONAL AND GENERAL EQUIPMENT

There is a limit to how much personal equipment a mercenary can carry in the field. Those who try to bring along device for every occasion find themselves overloaded and unable to function properly. On the other hand, there are some situations that cannot be resolved without the correct tools. Choosing the correct equipment for the task at hand is one of the hidden skills required by successful mercenaries.

AUTOMEDIC, PERSONAL, MILITARY VARIANT

Automedics are used by some civilians in hazardous environments and by dignitaries who may face threats to their lives. These devices are part monitor, part autoinjector. They monitor the user's life signs and blood chemistry, and can provide detailed information to a physician if needed. Under certain specific circumstances the unit can inject painkillers, antidotes to common toxins, stimulants, sedatives or whatever else the user needs. Specialist drugs are often delivered this way, such as regular doses required to keep a chronic condition at bay or stop a medical episode early.

Military automedics take this function a stage further. Like the civilian variant they must be tailored to a specific individual but can carry requirements of other members of a unit as a backup. This 'buddy system' allows treatment of others if necessary. In addition, the automedic can be preconfigured to react to external stimuli, for example delivering an antidote to tranq gas as soon as it is detected in the air rather than waiting for it to enter the user's system. Military automedics can also administer combat drugs either at the command of the user or – if access has been granted – from a remote location.

They are configured to dispense a single dose of Fast 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 Fast drug if available and there is no risk of overdose. The user can manually activate the drug at any time if needed.



Item	TL	Kg	Cost
Military Automedic	11	0.2	Cr17500

SUPPORT COOLING UNIT

Although primarily associated with support weaponry, the ‘SCU’ has become a ubiquitous piece of equipment. Some use replaceable consumables whilst others are based on more conventional heat exchangers. A consumable based unit weighs 5kg plus 1kg per ‘chill can’ it can hold. Using a forced heat exchange, the SCU removes heat from a weapon or an area and stores it in the disposable cans. Removing the expended cans and burying them – or sending them off for environmentally friendly recycling, depending on the unit – is a simple and not very onerous task which is nevertheless despised by most military personnel.

Conventional SCUs use a high-capacity heat storage fluid which can, in an emergency, be dumped and replaced with fresh fluid. Depositing large quantities of hot semi-liquid gel creates a large heat signature which can be useful as a decoy if well positioned, or even as a booby trap. More commonly, heat is dissipated through

a system of radiators, allowing the gel to return to liquid form and be reused. A conventional SCU weighs 10kg and can hold 50 Heat per kg of cooling fluid. This is stored in tanks which must be purchased separately.

An SCU doubles the rate at which heat is removed from a weapon with an advanced cooling system, providing it is properly connected. Dissipating heat through the system’s radiators is at the rate of 1 Heat per minute per set of radiators, but this does create a significant thermal signature. Reducing the rate by a factor of five allows the thermal plume to be largely concealed.

SCU units can be used to heat an area using residual stored heat or to cool one, and heat thus obtained can be stored for an extended period rather than dissipating. For this reason SCUs have become a standard climate control system for living areas and work spaces which need a constant temperature.



Item	TL	Kg	Cost
Support Cooling Unit, Consumables Variant	9	5	Cr2500
Support Cooling Unit Consumable Receptacle (per chill can capacity)	9	1	Cr500
Support Cooling Unit (Conventional)	9	10	Cr5000
Support Cooling Unit Fluid Tanks (per 50 heat capacity)	9	1	Cr100
Support Cooling Unit Fluid (per 50 heat capacity)	9	1	Cr250
Additional Radiators	9	1	Cr1000

EXPLOSIVES AND DEMOLITION CHARGES

Explosives come in two basic types, known as high and low explosive. High explosives detonate very quickly, creating a cutting action when emplaced correctly. Low explosives may not explode as such, but instead deflagrate; that is, they burn very quickly producing a pushing action. Both are useful to mercenaries who know how to emplace charges correctly.

BREACHING CHARGE

A breaching charge typically takes the form of a light frame which can be unfolded and stuck to a wall or door with self-adhesive pads. Upon command it detonates in a manner that cuts the target, causing a hole large enough to move quickly through. A charge is sufficient to breach a section of domestic wall or an internal door but will not significantly damage heavier structures.



Item	TL	Kg	Cost
Breaching Charge	7	2	Cr100

DEMOLITION BLOCK

Explosives are typically issued in convenient amounts, with training geared to how many blocks are to be used for any given task rather than requiring precise calculations. A demolition block is composed of plastic explosive that can be moulded to any shape needed. It is extremely stable and cannot be detonated by impact or heat. A small explosion such as that provided by a detonator is required. Two blocks, applied correctly, are sufficient to sever a 30cm steel I-beam.

If used as a grenade, a demolition block explosive produces a small blast effect which is destructive in a modest radius. Properly tamped or used to project loose debris, the effect is far more deadly. An explosive charge does Damage 1D plus 1D per two additional demolition blocks. Blast trait is 1 plus 1 per 2 full dice of damage, or 1 plus 1 full dice of damage if used to project debris as a booby trap or pipe bomb.



Item	TL	Kg	Cost
Demolition Block	7	0.5	Cr100

DEMOLITION CHARGE

A standard demolition charge consists of 12 demolition blocks plus detonators, wires and basic electronic timers/receivers allowing a range of charges to be put together. It is supplied in a carrying satchel with a few basic tools. If used as a weapon, for example thrown into an enemy foxhole, the charge as a whole would do 6D damage with Blast 4. If detonated in a confined space or in contact with an object, for example thrown onto the engine deck of a tank or under it, damage to the target is doubled.

Item	TL	Kg	Cost
Demolition Charge	7	5	Cr1000



DEMOLITION CHARGE, NUCLEAR

Nuclear demolition charges are not commonly available but may be improvised by mercenaries or issued under desperate circumstances. A nuclear demolition charge is sometimes called a 'suitcase nuke', though it is too big to fit in one. Yield is normally in the 0.1kt range – equivalent to around 100 tons of conventional explosive – which is sufficient to totally destroy most buildings or small installations.

Item	TL	Kg	Cost
Demolition Charge, 0.1kt Nuclear	8	20	Cr250000



MINES AND MINE MODIFICATIONS

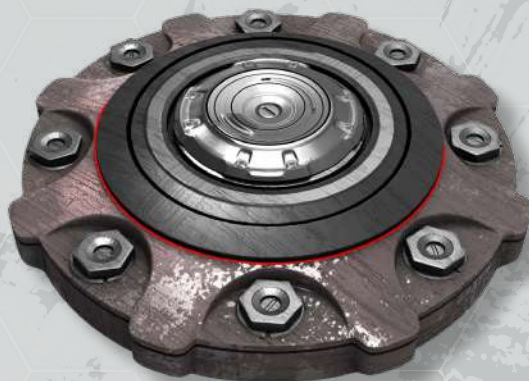
Basic anti-personnel mines become available at TL4-5, but those purchased by the typical mercenary unit are rather more advanced. Advanced mines are more difficult to detect and more reliable both in terms of triggering and effect. Mines can be set to detonate after a random period or instructed to do so by remote signal, making clearance operations dangerous, or can be command detonated. More commonly they are simply left lying around for the unwary to step on, and can usually be rendered safe by a remote encoded signal.

A variety of modifications are available for land mines. The commonest involve means of delivery and construction. FASCAM (field artillery scattered mines) are designed to be launched from an artillery piece, and air-dropped versions are similar. Delivery is rather random but a wide danger area can be created with multiple shells. Converting mines for remote delivery adds 25% to their cost.

Low-observable (stealth) mines use non-magnetic materials and, in extreme cases, exotic explosives to reduce the chance of detection by chemical sniffers. The Stealth modifications found on page 35 can be applied to mines, imposing a negative DM to anyone trying to detect them.

MINE, ANTIPERSONNEL

Anti-personnel mines can be small, intended to injure a foot, or a more lethal type which flings a fragmentation charge up, detonating at a height likely to cause the greatest injury. Variants include the cascade mine, which flings a cluster of microgrenades up when triggered. These detonate at random between 0.5-2.5m from the ground, creating a lethal fragmentation zone. Micro mines are intended to deter pursuit. They are armed by striking a resilient surface such as the ground, and detonate either a pre-set time later or upon contact with the next person passing. Micro mines are not very powerful but can seriously injure a foot. Alarm mines do not have a lethal payload but either launch a flare or detonate a distraction round equivalent to a small grenade. This has the joint effect of alerting sentries that something is amiss and startling an intruder, thus making them slow to react to whatever the sentries decide to do.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Antipersonnel Mine, Small	8	Contact	2D	1.5	Cr200	Blast 1
Antipersonnel Mine, Large	8	Contact	3D	2.5	Cr250	Blast 3
Antipersonnel Mine, Cascade	8	Contact	As microgrenade	3	Cr400	As Grenade
Antipersonnel Mine, Micro	8	Contact	1D	0.75	Cr100	—
Antipersonnel Mine, Alarm	8	Contact	Distraction or Flare	1	Cr75	—

MINE, ANTI-VEHICLE

Anti-Vehicle mines are intended to attack a vehicle passing over them. Smaller examples are dangerous to light vehicles and may disable a track but cannot seriously harm a tank. Large directional mines can blast right through the belly armour of an AFV.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Anti-Vehicle Mine, Small	8	Contact	8D	6	Cr750	AP 4, Blast 3
Anti-Vehicle Mine, Large	8	Contact	16D	15	Cr1250	AP 12, Blast 5

MINE, DIRECTIONAL

Directional mines are designed to fling small projectiles – typically ball bearings – in a cone out from the mine's 'danger' face. Blast radius in this case refers to the area in which its explosive effect will endanger anyone nearby. Range is the distance projectiles will travel downrange. A directional mine is treated as a Typical Area Fire attack.



Weapon	TL	Range	Damage	Kg	Cost	Traits
Directional Mine, Small	8	100m	4D	1	Cr900	Blast 10
Directional Mine, Large	8	250m	6D	2	Cr1400	Blast 16

DEFENSIVE EQUIPMENT

A variety of defensive equipment is available for the protection of troops in the field. Most are advanced versions of concepts that have been in use for centuries, updated either for ease of deployment and use or greater effectiveness.

FACKLES

Fackles – a term derived from 'field obstacles' – are tubes approximately 1m long and weighing 10kg each. When deployed, three sets of spikes are unfolded from the centre and points 1/3 and 2/3 along the tube. This can be done manually but in an emergency a fackle can be flung down, causing its spring-loaded spikes to unfold violently. This does cause the device to jump unpredictably before settling, so is not a preferred option. Short chains housed inside the tube allow multiple fackles to be fixed together, creating a barrier held in place by its own weight or fixed down with additional spikes driven into the ground.

Fackles are primarily useful in creating a secured area or breaking up an assault headed for a position – essentially functioning like barbed wire or archaic chevaux-de-frise. A determined person can bypass the spikes by making an Average (8+) Athletics (dexterity) check, but this requires either careful movement or a reckless jump. Failure inflicts Damage 2D and may leave the victim stuck. Some fackles have a small

sensor unit which serves primarily as a security alarm to detect anyone clambering over the fence. It can also be tied into a battlefield sighting system to indicate the chest height of a person moving between the spikes, granting DM+2 on attempts to shoot someone as they cross the barrier.



Item	TL	Kg	Cost
'Dumb' Fackle	8	10	Cr250
'Sensor' Fackle	8	10	Cr300

SENSORFENCE

A sensorfence consists of a set of six posts that can be driven into the ground or stood on their removable bases. The posts mount small sensor arrays including thermal and optical cameras, vibration sensors and magnetic anomaly detectors. If positioned no more than 20m apart they communicate with one another and with the control station. Additional posts from another kit can be added to network if necessary.

In passive mode the fence will detect and track movement nearby and alert the user. Data can be used to accurately target an intruder with any weapons tied into the sensor net. This includes detonating a grenade directly above them or perhaps bracketing them with flashbangs. In active mode the fence has more options. It can project an 'ultrasonic fence' between the posts that will discourage most animals from approaching and makes some people feel a sense of unease. Weapons can also be set up to automatically fire on anyone in the fence's protected zone who lacks the correct transponder.



Item	TL	Kg	Cost
Sensorfence	9	4	Cr500

DRONES

Drones differ from robots in that they do not have complex control mechanisms. Some drones are capable of limited decision-making whilst others require control from a remote operator, but even the most sophisticated drones require specific programming or the selection of pre-programmed options and cannot decide to deviate from their instructions. Most have a 'please advise' function triggered by an unexpected situation or one in which none of the drone's programmed options applies, but even so drones are notorious for blindly carrying on a mission despite totally changed circumstances.

SKYSPOTTER

SkySpotter is one of a great many very basic reconnaissance drones available from TL7 upwards. It carries forward and sideways looking optical and thermal cameras, but little else. SkySpotter takes the form of a hand-thrown miniature aircraft powered by a 'pusher' propeller. It is quiet and fairly small but tends to be rather obvious to anyone looking out for such craft. The drone can be directly controlled using a selected-waypoint system which requires no special skill beyond a familiarisation period, or can fly a pre-set course. Its batteries are good for about 2 hours of operation.

A control station is available but a SkySpotter drone can be controlled from any personal computer using software that comes free with every drone.



Item	TL	Kg	Cost
SkySpotter Drone	7	2	Cr50
SkySpotter Control Station	7	0.5	Cr200

AERODAGGER

Aerodagger is a ground-launched drone using rocket propulsion to reach an altitude of up to 1km. It then guides itself using stub wings and, like other non-grav drones, can only function in a Thin or denser atmosphere. The drone's sole purpose is to deliver a warhead to a suitable target, which must be within 10km of the launch site. This can be pre-programmed, but the user has an option to set target selection criteria. These are fairly basic, with options such as personnel, light vehicle, transport vehicle, artillery weapon and electronic equipment. Aerodagger is not very cost-effective when attacking personnel but can be used to harass hostiles or attack otherwise hidden enemies. It can deliver a warhead equivalent to any standard grenade, which must be bought separately. Targeting software is adequate, giving DM+1 to attack any target that can be identified by its optical and thermal outline.

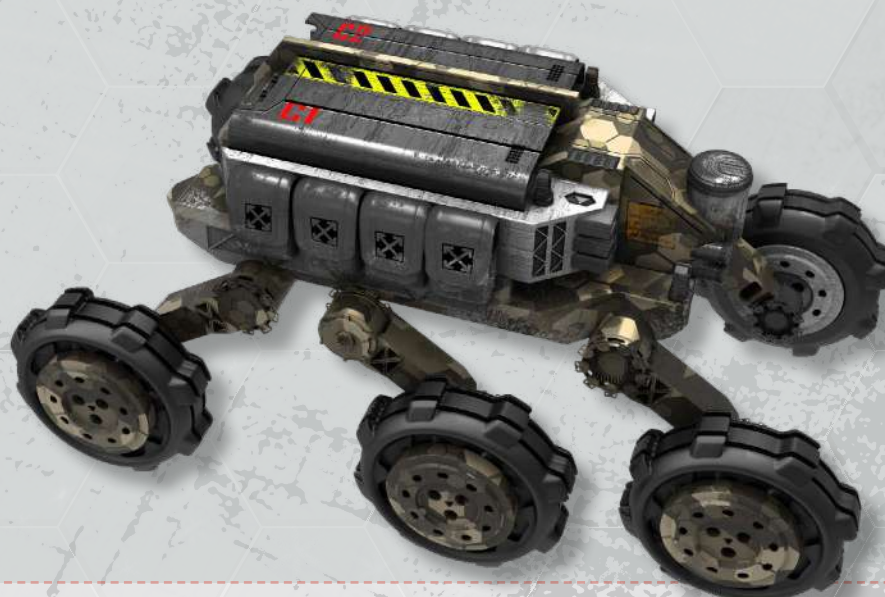


Item	TL	Kg	Cost
Aerodagger Drone	8	2.5	Cr500
Aerodagger Cluster (6)	8	12	Cr2000

BATTLE MULE

Battle Mule is one of several supply-and-reloading drones on the market. It takes the form of a low, lightly armoured box with six large balloon tyres similar to those of an all-terrain vehicle. It can cross calm water without preparation using its tyres for buoyancy and is agile enough to deal with rough terrain. Battle Mule has two internal compartments. The larger one is purely cargo stowage and can carry 50kg of ammunition or various supplies. The smaller compartment can be configured for cargo by removing the automatic reloading equipment, but is

more commonly used as a field loader when in direct support of a unit. The auto-reloader carries 1,000-2,000 rounds of ammunition, depending on calibre, in its ready hopper. It can reload standard magazines for up to three different weapons or ammunition types at once. Actual reloading takes one combat round but inserting an empty magazine or taking a full one out is a minor action for the soldier. The ammunition hopper can be reloaded using pre-packaged or loose ammunition. A box of 1,000 rounds typically weighs around 10kg.



Battle Mule can be used to conduct semi-autonomous resupply operations to forward positions or even troops on the move, or can accompany a force in the field. It is a large target, and despite programming to use terrain as cover Battle Mules tend to be put out of action on a frequent basis. The drone has Protection +12 and takes 40 hits to disable. A variant has recently reached the maetplace which trades the cargo and reloading areas for a very cramped operator station. The operator kneels with their legs inside the cargo space and most

of their torso sticking out. A raised, folding shield is fitted to the front and sides, which can be swung out to provide mobile cover for two infantry soldiers on each side. Some units have attempted to fit a light support weapon for the operator to use, but this has achieved little success. Despite looking ridiculous the shielded variant can provide cover during an advance and has seen success with some starport security formations. The shield adds Protection +8 against attacks from the side it is facing.

Item	TL	Kg	Cost
Battle Mule Drone	9	250	Cr40000

DESIGNATOR

DesiGnator is a grav-mobile drone about the size of a tennis ball, equipped with a laser designator/rangefinder and a battery of thermal and optical cameras. Range is about 15km, assuming the operator wants the drone to be able to return to its launch point for recovery and recharging. DesiGnator does not move much faster than a jogging human but is a difficult target, with Small (-4), Protection +2 and 6 hits. Its name is derived from 'gravitic propelled designation drone' but DesiGnators are more commonly used for reconnaissance.

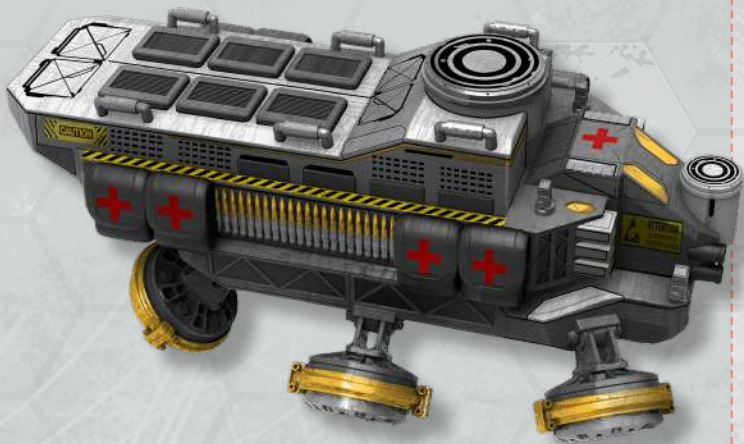
Item	TL	Kg	Cost
DesiGnator Drone	10	0.2	Cr10000
DesiGnator Control Station	10	2	Cr2000



GRAV MULE

Grav Mule is an enlarged and grav-mobile version of the Battle Mule drone intended for resupply and casualty evacuation missions. When configured for resupply operations the unit can carry 300kg of supplies, with one or more field reloading kits slotted into place. Equipment bays along the sides allow quick deployment of necessary items or can carry additional systems such as sensor jammers, decoy launchers and the like. Using high-speed nap-of-earth flight the Grav Mule can get supplies to a surrounded unit under conditions where a crewed vehicle would face too much risk.

Alternatively, the drone can be set up for casualty evacuation. A pair of slide-out stretchers are always fitted, and a life-support pack for each can be quickly installed. Once in place, two casualties can be slid into a Grav Mule's armoured box and transported – safely but claustrophobically – to the rear for treatment. The Grav Mule has Protection +16 and can take 50 hits before being disabled.



Item	TL	Kg	Cost
Grav Mule Drone	10	220	Cr250000

GRAV PIONEER

Grav Pioneer is an obstacle-clearance drone taking the form of a 1m radius disc. It uses grav propulsion which eats up power, requiring recharging every 1-2 hours of use. The primary function of Grav Pioneer is to clear mines and improvised explosive devices. It carries an array of sensors for the purpose, and can detonate mines with a specialised weapon located in a turret on the underside of the disc. The usual projectile is a heavy penetrator or a small explosive charge, though a multiple projectile round is available for certain applications. Grav Pioneer is not programmed to fire on personnel but can be tricked by a skilled operator or hacked and reprogrammed. Some units use their pioneers as security bots in this manner, but unfortunate incidents do occur as a result of incomplete or buggy coding. If firing on personnel the weapon is treated as a heavy smoothbore firing pellet ammunition, which was developed for the safe destruction of explosive devices.

Grav Pioneer has Protection +8 and can take 20 hits before being disabled. Its grav drive is programmed to 'make the drone light' in the event of a pressure wave such as that caused by an exploding mine. This means the drone is more likely to be tossed about than damaged, and takes half damage from blast effects. A pair of retractable arms, one ending in powerful cutters, allows the clearance of wire and similar light obstacles. Heavier obstructions can sometimes be reduced by firing all the drone's explosive ammunition into them in the hope of shaking the obstacle apart



Item	TL	Kg	Cost
Grav Pioneer Drone	10	20	Cr120000

HEAVY WEAPONRY

Heavy weaponry is the province of either small, specialist units that do nothing but serve a single big weapon or large forces that can afford the expense not only of obtaining and maintaining it but also transportation. As with small arms, mercenaries

typically prefer general-purpose weaponry over highly specialised equipment. The exception is units providing very specific high-end capabilities, who can get away with charging a premium because they have the only battlefield meson accelerator for hire in the subsector.

DIRECT-FIRE WEAPONS

Direct-fire weapons are typically used for fire support and bunker-busting as well as engaging enemy vehicles. The line between 'support' and 'heavy' in this context can be blurry, but as a rule weapons in this category are too large to be operated by infantry. They are typically encountered aboard vehicles and in installations.

AC-25 AUTOMATIC CANNON

The AC-25 is very much the industry standard for light autocannon in the interstellar marketplace. Numerous variants, copies and similar weapons exist. Light autocannon become available at TL6, but by TL8 they have reached their peak. Ammunition feed is usually by disintegrating-link belt carried in a box, drum or basket. Ball ammunition is uncommon, with most weapons combat-loaded with three high explosive rounds followed by two armour-piercing, the pattern repeated throughout the belt.

AC-25s can be encountered almost anywhere, providing inexpensive fire support or anti-aircraft defence. A semi-autonomous ground mount is available, which can be slaved to a set of perimeter sensors or a manual control system. The weapon can be switched between auto-response mode and soldier-in-loop operations as the need arises, allowing a single skilled operator to run an entire perimeter defence system with multiple weapons.

COMBAT LOADING

It is common practice to combat-load light autocannon ammunition, and the practice can be followed for some other weapons if desired. When firing a combat-loaded weapon, the referee should apply damage per the most destructive type and the best AP and other features possible. This only applies when making an autofire attack that will use enough rounds to guarantee a mix. Otherwise it will be necessary for the Travellers to keep track of the order in which rounds are fired in order to determine what comes next.



A standard AC-25 suitable for installing in a vehicle or bunker costs Cr10000. The semi-autonomous version, complete with controls and a heavy-duty tripod mounting, costs Cr25000.

AC-25 AUTOMATIC CANNON

Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
AC-25 (explosive)	8	2.5	9D	100	0.25	1	Cr10000	Cr6000	Auto 3, Blast 3, Lo-Pen 2
AC-25 (AP)	8	2.5	6D-3	100	0.25	1	Cr10000	Cr4000	AP 7, Auto 3

AC-40 MEDIUM AUTOMATIC CANNON

Like its smaller cousin, the AC-40 is an industry standard weapon capable of fulfilling a range of roles from air defence to light anti-vehicle work. AC-40s typically use a short-belt feed system, with pre-prepared lengths of belt carried in reusable container/guides which can be 'chained' almost indefinitely if space allows. Ammunition is typically pre-fragmented high-explosive dual-purpose, with reasonable penetration characteristics and a modest burst effect. Canister ammunition is sometimes available for infantry defence or foliage clearance. The AC-40 is very much a jack-of-all-trades and is superseded in most roles by weapons specifically tailored to the circumstances, but offering good all-round capability at an affordable price.

AC-40s are rarely encountered outside a vehicle or permanent emplacement. The basic weapon costs Cr25000 but many users buy a package which includes the mountings, traverse mechanism and power unit to allow standalone operation, plus a basic track-and-target sensor system which allows 'click and shoot' engagement of air or ground targets. The whole package costs Cr45000 and requires mounting on a vehicle or building into a permanent installation.



Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
AC-40 (HEDP)	8	10	9D	100	0.5	2	Cr25000	Cr9000	AP 3, Auto 3, Blast 6
AC-40 (canister)	8	0.2	10D	100	0.5	2	Cr25000	Cr9000	AP 3, Auto 3, Blast 4, Lo-Pen 2

AC-60H HEAVY AUTOCANNON

The AC-60H is an industry standard for heavy automatic cannon and used on a wide range of vehicles as well as occasionally being found in installations or protecting the ground approaches to a starport. Firing in 3-round bursts, the AC-60H can deliver anti-armour rounds capable of penetrating light armoured vehicles or fragmentation warheads for anti-personnel or anti-aerospace work. Ammunition feed is by way of a powered disintegrating-link belt, and the magazine can be opened to attach a new section of belt whenever the weapon is not firing.



Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
AC-60H (frag)	9	3	1DD	50	1	4	Cr50000	Cr12000	Auto 3, Blast 10
LC-60H (anti-armour)	9	3	1DD	50	1	4	Cr50000	Cr12000	AP 10, Auto 3, Blast 5

BLACKJACK GUN/MISSILE SYSTEM

The Blackjack weapon system is designed to permit combat vehicles to launch guided missiles or fire conventional shells depending on the current requirement. The weapon is a lightweight 150mm cannon not compatible with standard artillery ammunition. It cannot tolerate the immense chamber pressures generated by high-velocity ammunition so is primarily used in an infantry support role, firing explosive or smoke rounds. A canister round is also available for anti-personnel work, along with a variety of experimental ammunition types. Notable among these is a multiple-submunition penetrator round intended to offset the gun's low muzzle velocity by using rocket assistance and a small HEAP warhead. It is of limited effectiveness but has found a niche as a defence against infantry equipped with powered armour.

The Blackjack can launch a variety of anti-tank and anti-aerospace missiles providing they are pre-loaded into a container designed to fit within the gun. Loading a missile into the weapon requires swinging the breech aside and inserting the missile container before closing up ready to fire. A properly trained gunner can load and ready a missile in 3 combat rounds, whilst the gun normally uses a revolver-type autoloader. This contains 6 shells which can be selected in any order, and requires 2 combat rounds per shell to reload.

The Blackjack weapon system is normally purchased with mountings. Its standard mount is equivalent to an 8-Space large turret, with room for a gunner, loader and some ready ammunition. The mounting can be supplied enclosed or open, and will normally be protected to the same level as the vehicle it is mounted on. Armour cost and mass are assumed to be part of the vehicle's design.



BLACKJACK GUN/MISSILE SYSTEM

Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
Blackjack (explosive)	8	1	10D	6	0.75	3	Cr80000	Cr3000	Blast 12
Blackjack (canister)	8	1	8D	6	0.75	3	Cr80000	Cr2400	Blast 5, Lo-Pen 2
Blackjack (rocket assisted penetrator)	8	1.2	4D	6	0.75	3	Cr80000	Cr6000	AP 16, Blast 2

LC-85 LOW-PRESSURE CANNON

A common weapon on fire support vehicles, the LC-85 is an 85mm smoothbore cannon capable of delivering explosive, smoke or anti-armour rounds. A canister round is also available for anti-personnel work. The LC-85 is designed to be as compact as possible to allow it to fit in a variety of mounts, and has relatively low recoil for a vehicle-mounted projectile weapon. It is fed either by manually loaded single shells or from a rotating 6-shell magazine which can be reloaded whilst the weapon is not firing. Each shell takes 2 rounds for a crewmember to load but an autoloader is available – which consumes 1 Space and costs Cr50000 – which will load the empty chamber as it passes, effectively allowing the cannon to fire every round until the ready ammunition runs out.



Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
LC-85 (high explosive)	8	1.5	8D	6	1.5	6	Cr125000	Cr3000	Blast 15
LC-85 (anti-armour)	8	1.5	8D	6	1.5	6	Cr125000	Cr4500	AP 15, Blast 5

VRF-3 VRF GAUSS SUPPORT WEAPON

Designated a Very Rapid Fire (VRF) weapon, the VRF-3 is constructed on a modular mounting to permit installation on a vehicle or in a fixed position. VRF gauss guns are common support weapons among well-funded forces with access to high-tech equipment, and all must deal with the problem of heating. This is not so pronounced as with chemical propellants but the electromagnetic acceleration process does produce a considerable amount of heat. A common solution is to use a jacket containing cryogenic fluids to cool the chamber, but this has the



problem of requiring additional support in the field. The VRF-3 instead uses a triple-barrel arrangement, each with its own acceleration chamber. Whilst less efficient than a cryogenic cooling unit the arrangement requires only physical maintenance and no handling of dangerous

fluids. The end result is an extremely high rate of fire which can be sustained for 9 consecutive combat rounds before overheating makes a cooling cycle necessary. Ammunition uses standard gauss rifle needles.

VRF-3 VRF GAUSS SUPPORT WEAPON

Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
VRF-3	12	1.5	4D	1000	2	8	Cr175000	Cr5000	AP 5, Auto 6

MPS-22 GAUSS AUTOCANNON

Marketed as a self-contained unit, the MPS-22 is a heavier version of the standard gauss cannon found on many vehicles. Although it is built at TL12 and requires high-technology spare parts it is designed to be fitted on a 'black box' basis into any standard heavy weapon mounting so long as sufficient power is available. In the mercenary marketplace the weapon is popular as a cost-effective tank-killer for those forces able to afford it.

Firing 22mm penetrator darts in bursts of six, the cannon carries sufficient ammunition internally most engagements, and can be reloaded in a matter of seconds from a suitably equipped support vehicle. It is marginally effective against aircraft, since the high-speed darts require very little aim-off, but tends to over-penetrate without causing much harm unless a critical component is struck. Anti-personnel use is also limited, but light to medium armoured vehicles – including grav vehicles – are easy victims.



Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
MPS-22	12	3	16D	150	1.5	6	Cr175000	Cr1000	AP 16, Auto 3

ARTILLERY WEAPONS

Artillery weapons fire in an indirect arc, sometimes on a very high trajectory. Some can engage directly, 'over open sights' as the saying goes, but others are entirely useless once the enemy gets close enough.

AGGRESSOR 90MM MULTIPLE MORTAR

The Aggressor is essentially a cluster of three rifled 90mm infantry mortar tubes mounted on a rotating base plate suitable for installation aboard most vehicles or in an installation. Reloading is accomplished by releasing the breech lock and swinging the muzzles down on a pivot. A single barrel can be loaded with a projectile, but more commonly three are loaded at once from an autoloader. The weapon is then returned to firing position and the breech locked. The Aggressor can be fired manually but is more commonly used in conjunction with remote sensors to deliver precise fire even without guided projectiles. One, two or three barrels can be fired at once with the same or different payloads.

The single-barrelled version of this weapon is soldier-portable once broken down into frame, tube and baseplate, but the triple-barrelled version is too heavy and bulky to be moved more than a few metres in this manner. Both versions can be remotely traversed and elevated, though it is traditional to train for manual operation of such weapons.

Typical projectiles are high-explosive dual-purpose, with both blast and fragmentation effects. Smoke and incendiary rounds are also common. Operators willing to pay for guided munitions usually tie their mortars into a designator network, though a click-to-bombard inertial guidance system is included as standard. A homing round is also in widespread use, which can

be set to seek the parameters of enemy vehicles or a specific target installation. Once in the target area the warhead deploys a parachute to slow its descent, seeking a suitable target before launching a powered submunition which will almost always strike the top of the target.



Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Aggressor Infantry Mortar (single barrel, HEDP)	8	4	3D	40	Cr3500	1	Cr250	Artillery, Blast 8
Aggressor Infantry Mortar (triple barrel, HEDP)	8	4	3D	150	Cr10000	3	Cr750	Artillery, Blast 8
Aggressor Infantry Mortar (triple barrel, incendiary)	8	4	3D	150	Cr10000	3	Cr4500	Artillery, Blast 4, Burn 3, Incendiary 2
Aggressor Infantry Mortar (triple barrel, guided anti-armour)	8	4	3D	150	Cr10000	3	Cr9000	Artillery, Blast 4, Smart

DOMINATOR 200MM SIEGE MORTAR

Mortars are, by definition, short-barrelled and relatively low-velocity artillery weapons. Most are simple infantry support types, but superheavy mortars are popular bombardment weapons. The Dominator, like many similar designs, is a smoothbore breech-loading design capable of firing approximately once every minute if ready ammunition and an autoloader are available.

The Dominator is intended to be mounted on a vehicle, and is manufactured in such a way as to make this as easy as possible. Despite this, it is more commonly encountered as a defensive weapon. Dominators and similar weapons are highly effective at denying a narrow approach or choke point such as a mountain pass to enemy forces, and those built into installations are always pre-sighted on critical points.

Airburst-fragmentation rounds are commonly used for anti-personnel work, but a parachute-retarded anti-armour shell is a common backup. This seeks a suitable target as it falls, launching a penetrator submunition at enemy ground vehicles. It is not particularly effective against grav vehicles even when they are flying very low, as their speed and agility makes a hit problematic. However, as a relatively cheap way of getting heavy artillery to the battle area, the Dominator has seen considerable market success.



An autoloading unit is available for an additional Cr100000, adding 0.5 tons to the weapon's weight.

Weapon	TL	Range	Damage	Tons	Cost	Magazine	Magazine Cost	Traits
Dominator	8	10	4DD	4	Cr400000	1	Cr20,000	Artillery, Blast 20

FA-150 GUN-HOWITZER

Despite advances in technology, tube artillery remains a cost-effective way of delivering fire support on the battlefield. Gun-howitzers offer a balance between long-range fire (and effectiveness at shorter ranges when firing over open sights) and the lightness of a short-barrelled howitzer. The FA-150 is typical of the type. Firing a medium-calibre shell it has limited usefulness as a direct-fire weapon against armoured vehicles but is highly effective against soft targets and light fortifications, and can put several rounds into the air in rapid success from its 6-round rotary magazine. This allows a time-on-target salvo, though without an autoloader the magazine is laborious to refill. The weapon itself costs Cr450000, with an autoloader costing Cr75000 and taking up an additional 2 Spaces in a vehicle.



When using indirect fire the gun-howitzer has a range of 25km, though accuracy is not great at this distance without guided shells. Direct engagement range is around 3km using a modest arc. A loaded magazine allows a theoretical rate of fire of 10 rounds per minute

in either mode, with manual reloading of one shell taking around 6 seconds for a well-trained crew. This gives a sustained fire rate of 5 rounds per minute until the crew become fatigued.

FA-150 GUN-HOWITZER

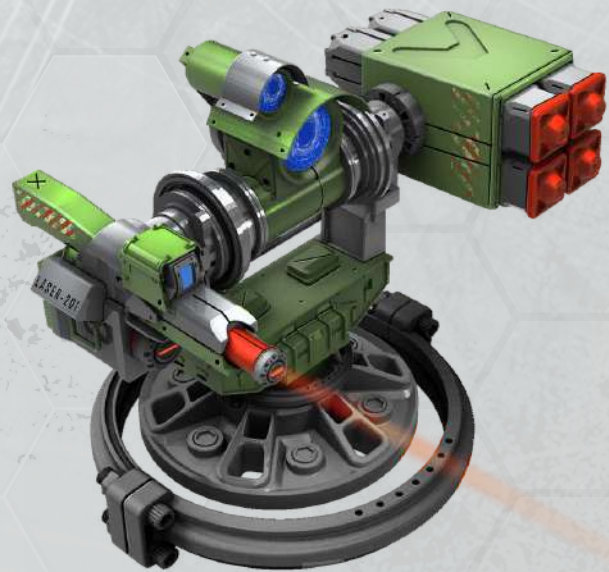
Weapon	TL	Range	Damage	Magazine	Tons	Spaces	Cost	Magazine Cost	Traits
FA-150 (frag)	9	25	1DD	100	1	8	Cr450000	Cr10000	Blast 15
FA-150 (HESH)	9	3000m	1DD	100	1	8	Cr450000	Cr12000	AP 25, Blast 5

MISSILE AND ROCKET WEAPONS

By convention, guided weapons are typically referred to as missiles whilst unguided ones are termed rockets. In practice there is considerable crossover between the two since the addition of a basic guidance system can turn a rocket into a precision weapon. Missiles and rockets fly relatively slowly and are vulnerable to interception.

AIRSPACE DEFENCE SYSTEM

The AirSpace system is a common fit on light vehicles. Configured on an unarmoured gun-over-hull basis it consists of a light laser cannon and quad-mounted light anti-aerospace missile system mounted coaxially on a rapid-slewing base. The base is the equivalent of a large turret in most ways, but does not carry a crewmember and has no armour protection for the weapons. They are unlikely to suffer a hit even if the vehicle is directly fired upon, due to their small size relative to the hull.



Weapon	TL	Range	Damage	Tons	Spaces	Cost	Magazine	Magazine Cost	Traits
Airspace (laser)	10	2	8D	2	+8	Cr60000	—	—	—
Airspace (missile)	10	5	6D	1	+4	Cr20000	4	Cr2500	One-Use, Smart

ASA-40 HEAVY AEROSPACE DEFENCE MISSILE SYSTEM

The ASA-40 is a common large aerospace defence missile system, manufactured under license on multiple worlds. It is designed to be operated from an installation or a vehicle, though trailer-mounted variants are not uncommon. The system consists of a launch rail on a slewing/elevating base, control station and sensor/antennae complex that can be mounted on the launch vehicle or separately.

The ASA-40 has various designations depending on where it is in service. Most users obtain missiles on the open market, so typically a missile will be of standard design and with well-known capabilities. The usual choice is a two-stage weapon with a fast-burn main stage to get the missile into the target vicinity or to altitude quickly. After this is jettisoned the attack stage can coast for some time before activating its own engines. This stage is agile but has difficulty targeting grav vehicles that make rapid and violent direction changes. It is capable of intercepting most aircraft and has no difficulty with spacecraft.

The standard missile used with this weapon system is the HighStrike long-range aerospace missile. Its warhead is capable of self-selecting between impact detonation and close-pass proximity burst. If an impact can be achieved the missile does 2DD damage with a small blast area. A proximity burst reduces damage to 12D with a much greater radius. The missile is capable of endangering small spacecraft with a direct hit.

The launch and control system costs Cr750000 and weighs 3 tons with a missile in place. Missiles typically cost Cr100000, or more depending on warhead. Additional missiles are loaded with the assistance of a hoist on the loader, a process that takes around 20 minutes. Each spare missile weighs approximately one ton with its protective packaging.



Weapon	TL	Range	Damage	Spaces	Cost	Magazine	Magazine Cost	Traits
ASA-40	10	100	2DD/12D	12	Cr750000	1	Cr100000	Blast 8/25, Smart

P-12 VEHICULAR SUPPORT WEAPON (PLASMA)

The P-12 vehicular plasma gun is a standard Plasma-C gun mounted in a remotely controlled blister turret. This is designed to be fitted on the top, sides or underneath a vehicle depending on its role. The mountings are universal, with only control and power feeds required. It is designed to vent plasma outward if the firing chamber is breached, rather than into the vehicle, and considered one of the safest plasma weapons available on the open market.



Weapon	TL	Range	Damage	Tons	Spaces	Cost	Magazine	Magazine Cost	Traits
P-12	12	10	2DD	4	16	MCr1.5	—	—	AP 30

RESGAW-220 ROCKET ARTILLERY SYSTEM

Cheaply manufactured at TL7, the Resgaw system is a common large-calibre rocket artillery system designed to be retrofitted to almost any vehicle. At its core is a traversable carrier/launcher rail system which carries eight 220mm unguided artillery rockets. These typically deliver high explosive warheads or an airbursting fragmentation payload for area attacks. In open configuration the system takes up 9 Spaces and costs Cr25000, carried outside the structure of a vehicle – and thus unprotected by. An enclosed version, protected by the vehicle's armour, costs Cr40000 and consumes 12 Spaces. Vehicle-mounted systems can make use of an autoloader, which can be carried on the same vehicle or another in support. The autoloader takes up 4 Spaces plus 4 more for every 8 missiles carried and costs Cr25000. Standard warheads cost Cr2500 each. Range of this weapon is not great but it can be fitted to light trucks or similar vehicles to create a powerful, if short, barrage capability. At TL8, a simple guidance system can be fitted at the cost of Cr100 per missile. This does not home in on precise targets but does grant DM+2 to attack rolls.



Weapon	TL	Range	Damage	Tons	Spaces	Cost	Magazine	Magazine Cost	Traits
Resgaw-220	7	10	2DD	2.25/3	9/12	Cr25000/40000	8	Cr20000	Blast 16, One Use

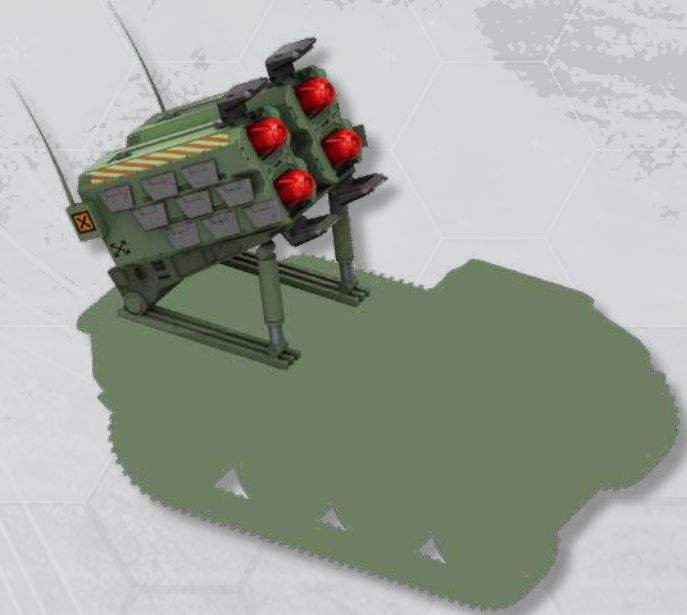
TAC-150 MISSILE SYSTEM

The TAC-150 missile system is named for its role and general size. The bus, propulsion system and most of the electronics are common to all missiles in the family, with warheads and any specific components fitted as a single unit. TAC-150 missiles can be launched from a Blackjack gun/missile system or any other launcher capable of carrying missiles in the 150mm diameter range. If mounted on a post a pair of missiles consume 1 Space.

The commonest variants are the TAC-150AA and TAC-150AT, intended for anti-aerospace and anti-armour work respectively. The AA version is designed for proximity detonation and uses a warhead surrounded by tungsten cubes for maximum effect, whereas the AT variant is fused for impact or close-standoff detonation. The latter is intended to defeat reactive armour by positioning the plasma jet formed by its shaped-charge warhead in such a way as not to be disrupted by exploding reactive armour. Designated TAC-150ATS, this warhead is expensive but ignores any reactive armour a target vehicle may have. Other mechanisms intended to impair shaped-charges, such as mesh or bars, are similarly ineffective.

An antiradiation weapon designated TAC-150AR, is also available. Normally used to seek enemy radar and similar sensor equipment, this warhead can analyse emissions and determine the nature of sensors and communications equipment. It can be directly

controlled or permitted to autonomously seek targets of the correct nature. If a radar or communications array is turned off the missile will attack its last known location unless directed to another target. Antiradiation weapons gain DM+4 to attack emitting sensors or communications equipment, and if home-on-jam mode is selected they gain DM+6 to attack active jammers and similarly powerful emitters. An attack on a shut-down target is made without these DMs but the missile still gains the usual modifier for being a smart weapon.



Weapon	TL	Range	Damage	Tons	Spaces	Cost	Magazine	Magazine Cost	Traits
TAC-150AA	9	5	6D	0.25	1	Cr10000	2	Cr10000	Blast 12, One-Use, Smart
TAC-150AT	9	5	8D	0.25	1	Cr12000	2	Cr12000	AP 12, Blast 4, One-Use, Smart
TAC-150ATS	9	5	8D	0.25	1	Cr22000	2	Cr22000	AP 12, Blast 4, One-Use, Smart
TAC-150AR	9	5	6D	0.25	1	Cr16000	2	Cr16000	Blast 12, One-Use, Smart

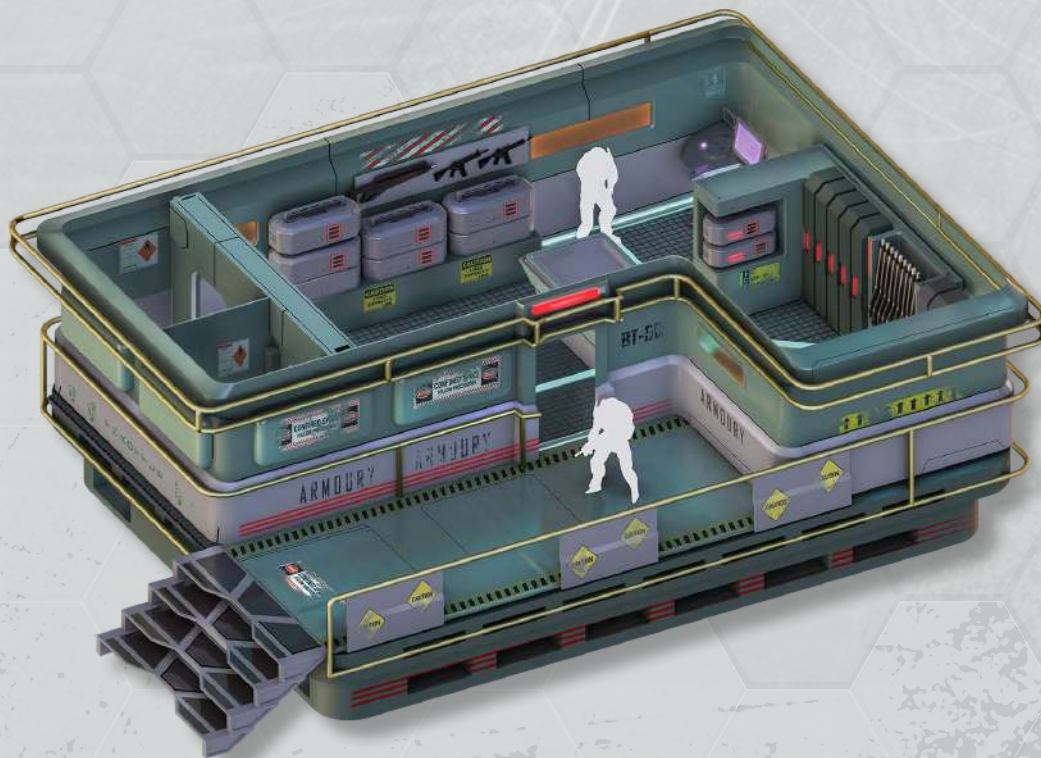
HEAVY EQUIPMENT

Heavy equipment is normally carried aboard a vehicle or installed in a facility. Small mercenary units are unlikely to be able to afford much in the way of heavy equipment, but if an item is considered necessary enough the money will be found... somehow.

FIELD ARMOURY

A field armoury is a modular structure designed to provide maintenance and secure storage for weaponry and ammunition. Lower-tech variants are available but the TL10 version is equipped to maintain energy weapons and similar high-tech equipment in at least a basic fashion. A field armoury can hold sufficient small arms

for a company-sized unit along with body armour, light support weapons and a modest quantity of ammunition. Dismantled, it takes up 8 Spaces in a vehicle and weighs 4,000kg. The armoury unit can be built into a vehicle, in which case it consumes 24 Spaces.



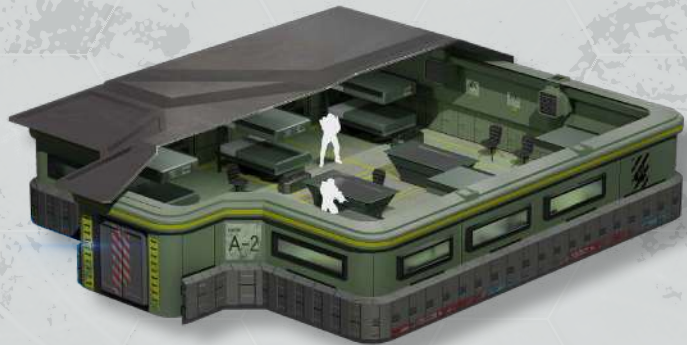
Item	TL	Kg	Cost
Field Armoury (energy weapon capable)	10	4,000	Cr10000
Field Armoury (non-energy capable)	7	4,000	Cr2000

FIELD BARRACKS

A field barracks is somewhere between a large and well-insulated tent and a prefabricated building. Each structure has a modular base, a framework that can be configured various ways and sections of flexible covering along with a rather minimal set of shower and washing facilities. The standard setup is a six-person sleeping area, a general-purpose working space and a small 'field fresher' which is served by a modular set of power and water connectors. A furniture kit capable of being put together as six field bunks, a table and stools is also provided, along with a heating/air conditioning unit which makes the shelter liveable under a wide range of conditions.

Multiple modules can be combined to create a base. It is not uncommon to find accommodation structures made up of most of two kits, with the left-over parts used for mess, command or briefing facilities. Although nothing like as good as a permanent structure, a field barracks can be set up almost anywhere and prevents

the inevitable degradation of morale that comes with living in inadequate facilities. The modular nature of the kits takes some getting used to – to the point that knowing how to erect or strike a camp of this sort is considered an essential skill by many mercenary units. When broken down each module takes up 6 Spaces aboard a vehicle.

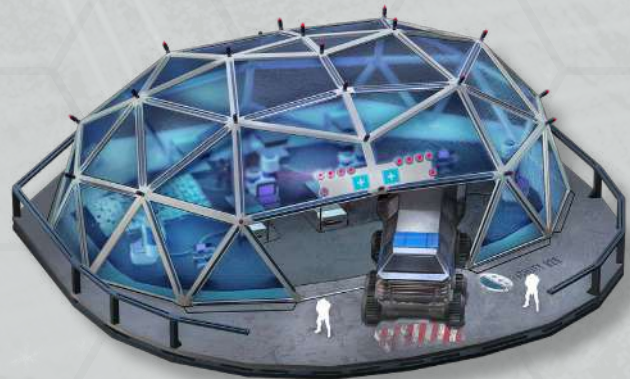


Item	TL	Kg	Cost
Field Barracks Module	9	120	Cr25000

FIELD MEDICAL UNIT

A field medical unit is designed to be carried aboard one or more vehicles and deployed to the ground, but can be installed inside vehicles instead. It contains two emergency operating units and two non-surgical aid stations along with a central sanitisation and general-stores area. If deployed to the ground, each of the five modules is protected by a translucent 'bubble' of light polymer on a collapsible frame. Perfectly sterile conditions are hard to come by in the field, but a unit of this sort comes close. If carried aboard a vehicle for deployment groundside, the unit takes up 20 Spaces. Installed in a manner that permits surgery to be carried out inside a vehicle, Space requirements increase to 40, which is usually split between two or three vehicles. The TL9 version relies on medical professionals with

some automated assistance. At TL32 a variant is available which contains two autodocs in place of the surgical units. A live medic can still use these but they are typically programmed for automatic treatment of common injuries.



Item	TL	Kg	Cost
Field Medical Unit	9	2,500	MCr1.5
Field Medical Unit (automated)	13	2,500	MCr1.75

FIELD NUCLEAR DAMPER

Although nuclear weapons are rarely used in the sort of conflicts mercenaries get involved in, the threat is always present. Nuclear dampers render nuclear warheads inert, more or less, and are typically deployed to protect major troop concentrations, headquarters and field bases. A field nuclear damper is sufficient to protect an area 1km in radius from tactical nuclear weapons and to nullify radiation attacks. It will thus provide protection from the radiation associated with plasma, fusion and particle weapons. One can also be used to make an irradiated area somewhat safer, but contact with contaminated material will still pose a severe hazard.

A field nuclear damper requires so much power that it will normally be carried aboard a vehicle or in an installation with its own fusion reactor. Although smaller than the units used aboard starships, portable dampers consume 12 Spaces in a vehicle.



Item	TL	Kg	Cost
Field Nuclear Damper	12	3,000	Cr500000

FIELD SURVEILLANCE SYSTEM, MULTISPECTRAL

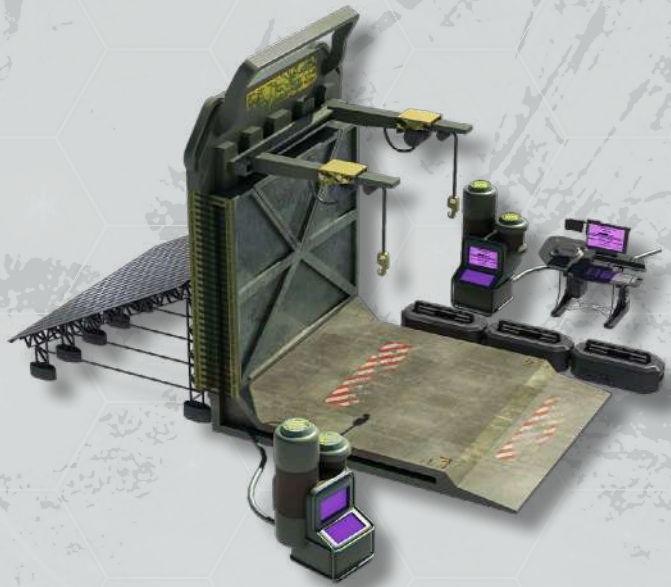
A field surveillance system consists of a central operator station – little more than a military portacomp, a stand for it and a folding chair – plus a tripod mounted multispectral sensor array. This includes a passive emissions detector, active radar, a laser mapping and rangefinding system on a rotating platform, and thermal and optical sensors. Additional ground sensors in the form of small discs are included. These detect acoustic, magnetic and seismic traces. The unit provides monitoring and alerts over an area 1-1.5km in radius, depending on the terrain, and can be linked into a larger network. Its fuel cells are good for around 72 hours of operation, significantly reduced if active radar is used. The system provides DM+2 to Recon checks within its area of coverage.



Item	TL	Kg	Cost
Field Surveillance System	9	8	Cr6000

FIELD WORKSHOP

Units that have more than one or two vehicles soon find they become a maintenance burden in the field. Repairs and maintenance can be improvised at need, and some units do this on a constant basis. A field workshop allows work that could otherwise not be undertaken to be carried out almost anywhere. The workshop includes hoists and frames to support them, heavy tools and some fabrication equipment which allows parts to be adapted or wrangled back into shape. It requires a crew of two mechanics at a minimum to make use of the facilities, and can be used by up to six. The unit as a whole is designed to be carried in several crates aboard a vehicle, and takes around four hours for a 4-person crew to deploy. One large or two small vehicles can be worked on at once. The workshop takes up 16 Spaces when carried as cargo in a vehicle, and can be broken down between vehicles if necessary. The TL10 version has provision for repair of grav vehicles.



Item	TL	Kg	Cost
Field Workshop	8	4,000	Cr250000
Field Workshop (grav capable)	10	4,000	Cr400000

MILITARY SATELLITE LAUNCHER

Satellite reconnaissance is a luxury for most mercenary units unless their clients can provide coverage. Those forces that can afford one can buy a self-contained launcher and control unit which can be fitted to a vehicle or carried aboard one and emplaced in the field. The unit contains an erector-launcher which consumes 12 Spaces aboard a vehicle either fitted or as cargo, and a ground control and preparation station which takes up another 4 Spaces. A single rocket takes up 24 Spaces. A satellite already mounted on the rocket takes up no Spaces; additional satellites take up one Space and weigh 250kg.

Rockets can be built if a decent workshop is available, though fuel handling is hazardous. These military satellites are capable of conducting communications relay work, mapping and ground monitoring with a variety of sensors. Duration in orbit is fairly short; typically 3D days plus the Effect of an Electronics (remote ops) check.



Item	TL	Kg	Cost
Military Satellite Launcher	9	4,000	MCr1.2
Rocket	9	6,000	Cr100000
Short-Duration Military Satellite	9	150	Cr50000

MOBILE FUSION REACTOR

Using the term ‘mobile’ for a fusion reactor is something of a stretch, but this unit is as close as it is possible to get. A field reactor is derived from the units fitted to many military vehicles, but is designed to be carried as cargo in a vehicle rather than forming an integral part of its structure. The reactor and its associated control and monitoring stations consume 14 spaces if carried in a vehicle. The unit can power a modest-sized base including heavy laser weapons, and recharge grav vehicles at the same time. Power draw limits recharging to half a dozen vehicles and will be halted whilst heavy current drain is experienced, such as when firing aerospace defence lasers powered by the unit.

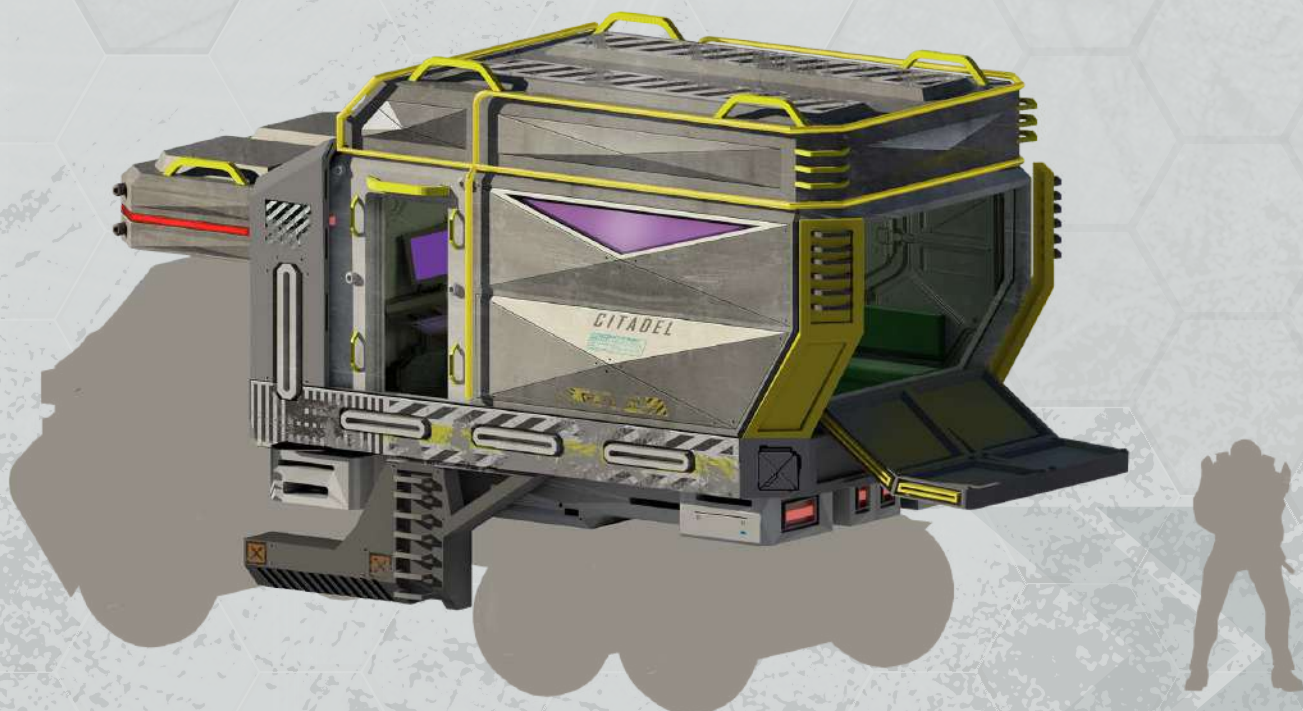


Item	TL	Kg	Cost
Mobile Fusion Reactor	10	3500	MCr1.75

VEHICULAR CITADEL

A vehicular citadel is an armoured chamber within a vehicle. Normally installed around a crew area, a citadel could in theory protect computers and electronic equipment or a propulsion system. A citadel consumes one Space plus one additional Space for every four full Spaces contained within it. It provides additional armour protection for the occupants or contents and can be combined with NBC protection to create a refuge within the vehicle. A weapon that penetrates the outer

armour and would strike something protected by the citadel must get through its armour to do so. Ideally enough of the weapon’s force is spent on breaching the outer armour that the citadel can withstand what is left, though the vehicle’s interior will most likely be wrecked even if the crew and critical systems survive.



A basic citadel is essentially a steel box with a door but as technology advances it is possible to add additional features. From TL8 upwards citadels offer additional protection and are fitted with a cooling system which will allow the occupants to survive a serious fire in the vehicle. Shaped-charge warheads that detonate against

the outer hull of a vehicle will not be well positioned to penetrate the inner citadel. Such weapons lose all AP traits and do half damage to the citadel. The cost of a citadel is per Space contained within it, including the Space the citadel itself consumes.

Item	TL	Spaces	Cost per Space	Armour
Vehicular Citadel	6	1+1 per 4	Cr10000	10
Vehicular Citadel	8	1+1 per 4	Cr25000	15
Vehicular Citadel	10	1+1 per 4	Cr35000	20
Vehicular Citadel	12	1+1 per 4	Cr50000	25

VEHICULAR NBC PROTECTION

It is possible to protect the occupants of a vehicle from biological or chemical attack, and from radioactive fallout, without installing a full life-support system. Some bottled oxygen may be used but for the most part air is drawn from outside the vehicle through filters or is scrubbed in a rebreather unit. NBC protection is no use in vacuum or where an atmosphere is wholly unbreathable as it does not change the gas composition, but filters will clean out most taints. No airlock is provided, so unsealing the vehicle will allow contamination to enter.

Basic NBC equipment is essentially personal protection for use inside the vehicle. It takes the form of masks provided with filtered air. This is bulky and uncomfortable, since the crew have to wear protective clothing and deal with hoses getting in the way, but it is cheap. Contaminants can enter, so the interior must be decontaminated before use by unprotected personnel

Standard NBC protection creates a comfortable and safe environment within the vehicle by sealing the vehicle and maintaining a slight overpressure inside.



Item	TL	Spaces	Cost per Space
Basic NBC Protection	7	0	Cr1000
Standard NBC Protection	7	1	Cr2500

VEHICULAR PROTECTION, EXTERNAL

Combat vehicles may be attacked in a variety of ways. Shaped-charge warheads are designed to defeat conventional armour and are effective even against advanced composites. Grenades and explosives can be thrown onto a vehicle, or flammable liquids poured onto upper surfaces. Mines and other explosive devices can be emplaced so as to attack from the underside of a vehicle. External protection is designed to defeat these attacks, and comes in three types. Any or all can be fitted to a vehicle, paying the costs separately.

Grenade protection involves shaping the upper surfaces so grenades roll off and fluids spill onto the ground rather than entering the vehicle or pooling on its surfaces. Wire mesh can be used to create a roof which will do the same for grenades but does not affect fluids or satchel charges. Non-magnetic coatings are used to prevent charges from sticking to the hull.

Mine protection can be provided by shaping the underside of a vehicle to deflect blast and adding armour plate to vulnerable areas. It may be more efficient to simply increase the armour weight of the

vehicle and move some of it to the underside, but mine protection is often fitted on a temporary basis or as a modification after bad experiences in the field. Mine protection consumes two Spaces plus one for every full 20 Spaces of the vehicle. It adds 25% to the value of the vehicle's underside armour. Mine protection can only be applied once

Shaped-charge protection is normally achieved by adding slat (or bar) armour and skirts around a vehicle which can cause a shaped-charge warhead to detonate short of the optimum location. Unless the weapon has advanced fusing that compensates for this, or a standoff probe, there is a 2 in 6 chance that any shaped-charge warhead striking the vehicle will be impaired. Damage is halved and all AP traits are lost. The mountings for slat armour take very little space inside the vehicle but can make operations awkward. Slat armour requires one Space for every 25 Spaces of the vehicle, rounding down, and costs Cr750 per Space of the vehicle. Slat armour has no effect on energy weapons, kinetic penetrators or blast.



Item	TL	Kg	Cost per Space
Grenade Protection	5	0	Cr300
Mine Protection	5	2+ 1 per 20	Cr1500
Shaped-Charge Protection	5	1 per 25	Cr750

VEHICLES

Most vehicles used by mercenary forces are either bought surplus from large militaries or built in large numbers by corporations for sale to government and mercenary clients. A unit that can afford a small run of

custom designed vehicles is a rare thing, though often vehicles are refurbished and upgraded once in service. Overall, however, most vehicles in mercenary service are variants of a few common designs.



ARMOUR

FRONT 2

REAR 2

SIDES 2



GS-3 FAST ATTACK VEHICLE

Autopilot (skill level)	—	TL	8
Communications (range)	500 km	SKILL	DRIVE (WHEEL)
Navigation (Navigation DM)	—	AGILITY	+2
Sensors (Electronics (sensors) DM)	—	SPEED (CRUISE)	HIGH (MEDIUM)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	400 (600)
Stealth (Electronics (sensors) DM)	—	CREW	1
		PASSENGERS	—
		CARGO	1 TONS
		HULL	12
		SHIPPING	3 TONS
		COST	CR20200

TRAITS

Open Vehicle, Off-Roader

EQUIPMENT

Camouflage (improved), Communication System (improved, encrypted), Control Systems (improved)

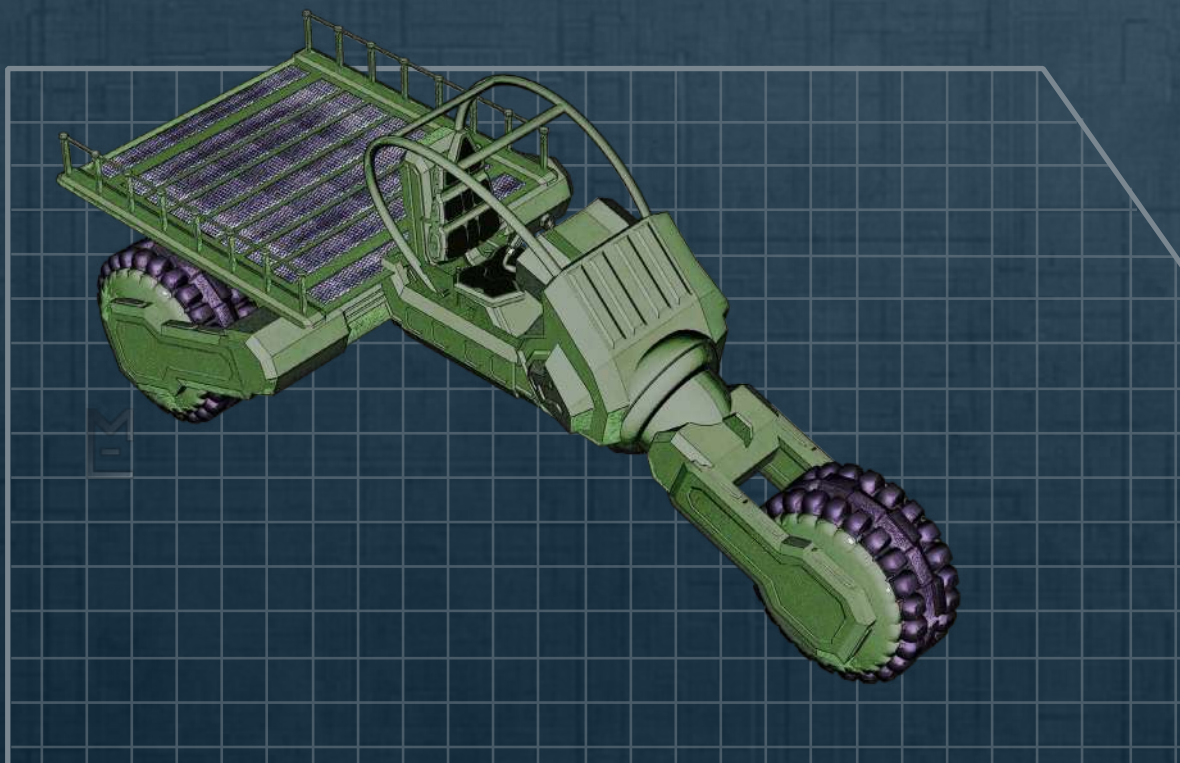
DESCRIPTION

GS-3 stands for 'ground strike, 3-wheel'. This slightly unusual offering from Halversten Armaments Incorporated was developed for the fast-response and scouting role but has developed into a general-purpose light weapons carrier. The basic vehicle is a large three-wheel design, with roll bars around the driving position but no significant protection from weapons fire or the elements. The area behind the driver is set up as configurable space, and can carry a cargo box capable of holding 4 Spaces of equipment or 1,000kg of load. In this configuration the GS-3 is occasionally encountered as a 'last mile' logistics vehicle running ammunition and supplies at high speed to forward-positioned troops.

As standard, the vehicle is very basic. It has no sensors or electronics other than a modest driver-assistance package and encrypted comms system. The 'cargo area' was designed from the outset to be configurable, though most commonly all that is added is a pintle-mounted weapon for the use of a second crewmember who stands in the vehicle's rear bed. This is the standard patrol and security configuration for the vehicle, acting as a mobile light support platform or escort for logistics vehicles. An alternate configuration allows two infantry personnel to ride in the bed along with a little cargo, dismounting to fight or make a foot patrol whilst the driver covers them with a pintle-mounted weapon above the driving position. The art of dropping from a standing 'gunner' position into the driving seat without inflicting self-injury is an important one.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Machinegun	0.4	3D	100	CR100	Auto 3	—
Light Anti-Aircraft Missiles	5	6D	4	CR20000	One-Shot, Smart	—
Light Autocannon	1	6D	100	CR2000	Auto 3	—



Reconnaissance Variant: The GS-3 makes an effective reconnaissance and artillery observation vehicle, providing it can evade detection. Its small size enables it to find a concealed position on a hillside or behind an obstruction and relay information back to the parent force. In this configuration the vehicle is fitted with a TL9 navigation system providing DM+2, an extended-range communications system and an improved, increased-range sensor system (DM+1) which is hardened and mounted on a mast. These modifications are expensive, bringing the vehicle cost to Cr150350. Communications are handled by a second crewmember who normally is provided with a pintle-mounted weapon for self-defence.

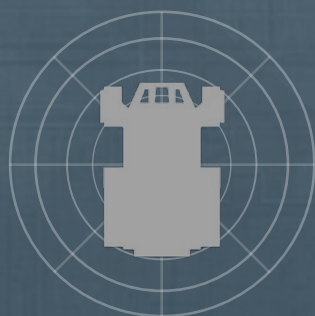
Electronic Warfare Variant: Like the recon version, the electronic warfare variant of the GS-3 is designed to be a cheap way of getting an expensive piece of equipment into the field. The EW package adds an improved, extended-range electronic countermeasures package to the rear bed. This adds Cr40000 to the vehicle's price for a readily

available TL8 package and is sometimes included in a recon-variant vehicle. The resulting platform is fast and mobile, though vulnerable if attacked. It is often used as a mobile electronic reconnaissance asset, mapping enemy emissions and investigating any anomalies before retiring without making contact. An imported TL11 advanced ECM pack can also be installed, adding Cr80000 to the cost of the vehicle for an extended-range package.

Strike Variant: Most users retain the GS-3 in its basic role, as a fast and mobile weapons carrier. The strike variant can carry a range of weapons, usually on an open mounting equivalent to a small turret with no armour protection. The turret weapons are directly controlled by a second crewmember. Typically a light autocannon is mounted, increasing the vehicle's cost by Cr20000, but some GS-3s are used as mobile anti-aerospace platforms and carry a quad-mount light anti-air missile system which increases vehicle cost by Cr30000.

ARMOUR

FRONT	7
REAR	7
SIDES	10
UNDER	7



FIELD RANGER UTILITY VEHICLE

Autopilot (skill level)	—	TL	9
Communications (range)	500 km	SKILL	DRIVE (WHEEL)
Navigation (Navigation DM)	—	AGILITY	+1
Sensors (Electronics (sensors) DM)	—	SPEED (CRUISE)	HIGH (MEDIUM)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	750 (1125)
Stealth (Electronics (sensors) DM)	—	CREW	2
		PASSENGERS	—
		CARGO	2.75 TONS
		HULL	35
		SHIPPING	8 TONS
		COST	CR44400

TRAITS

Off-Roader

EQUIPMENT

Camouflage (improved), Communication System (improved, encrypted), Control Systems (improved), Fire Extinguishers, Navigation System (basic), Sensors (basic)

DESCRIPTION

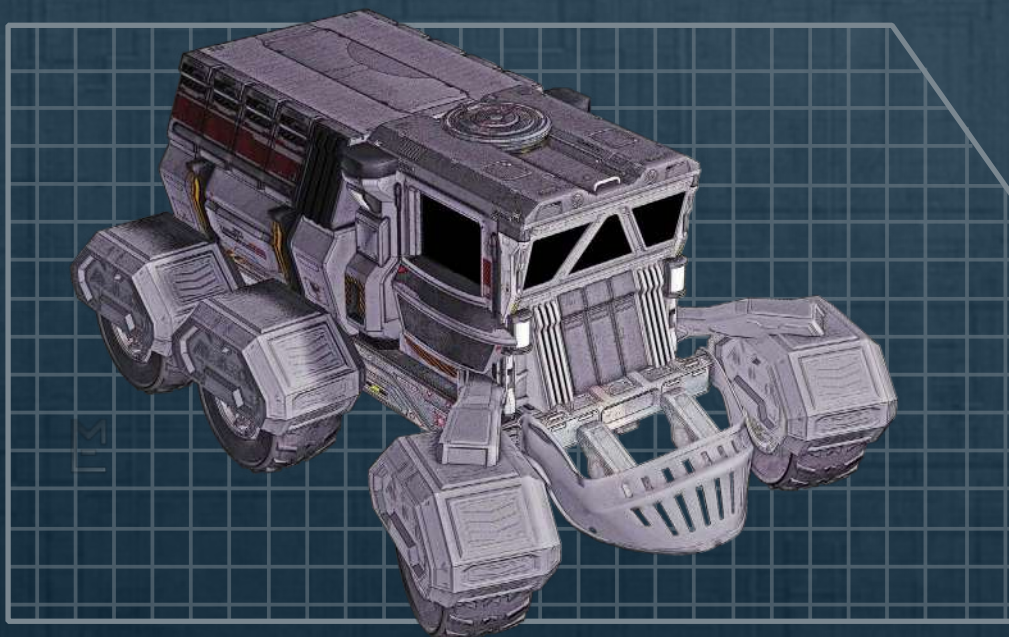
The Field Ranger is a ubiquitous security and transport vehicle often converted into a light patrol asset for lack of anything better. It is a 6-wheel-drive ground vehicle somewhere between a large SUV and a small truck, with good off-road capability and endurance. The vehicle's blocky sides maximise internal space at the price of being a good target, whilst the large rear area can be left open-topped or covered with a lightly armoured body shell. The crew area and critical components are protected by light armour plate offering modest protection against most small arms fire from medium range or greater.

Field Ranger was designed from the outset to be customised, and indeed several standard kits are manufactured. The basic vehicle is set up for a crew of two, with the rear cargo area open or enclosed as the purchaser prefers. There are no weapons as standard, but the cab roof hatch has provision for a pintle mount. The rear area can hold 2,750kg of cargo or 11 Spaces' worth of equipment and/or personnel. The bed of the rear area is sufficiently well constructed to be able to support a light turret weapon.

Field Rangers are typically used for personnel transport, in which case they carry 8-10 personnel in the rear, or for light logistics work.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Machinegun	0.4	3D	100	CR100	Auto 3	—
Light Anti-Aircraft Missiles	5	6D	2	CR10000	One-Shot, Smart	—
Light Autocannon	1	6D	100	CR2000	Auto 3	—
LC-85 (high explosive)	1.5	8D	6	CR3000	Blast 15	—
LC-85 (anti-armour)	1.5	8D	6	CR4500	AP 15, Blast 5	—



Survivability Enhancement Package: Survivability can be greatly improved by fitting bolt-on armour panels and defensive systems. The full up-armouring kit increases armour to 20 at the front and rear, and 28 on the sides. Anti-mine protection increases underside armour to 24, and a decoy dispenser and smoke discharger are added on the cab sides. This enhanced protection comes at the cost of reducing internal space; cargo capacity drops to 2,000kg or 8 Spaces. The cost of this upgrade is Cr 12000, slightly more than the cost of building the vehicle in this configuration from new.

Light Turret Weapon Package: A 4-Space small turret is available to fit the Field Ranger. It takes up only one internal Space but can hold four Spaces of weapons, and costs Cr40,000 without fitted weapons. The turret is capable of high-angle shooting as well as engaging ground targets, and can be controlled from either the cab or rear area according to the user's preference. A turret will reduce cargo capacity by 250kg or equipment Space by 1.

Large Turret Weapon Package: If heavier combat capability is desired, a Field Ranger can be configured as an armoured reconnaissance or fire support vehicle. This requires fitting a larger turret as an integral part of the vehicle, taking up 5 Spaces. This will almost entirely take up the available space in a survivability-enhanced Field Ranger, turning it into a light combat vehicle. The cost of a large turret without weapons

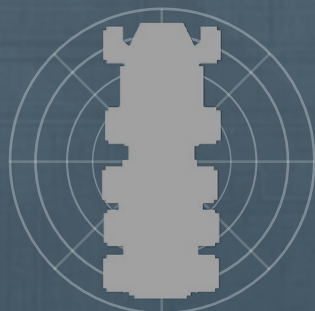
is Cr150000. The turret has capacity for one crewmember and six Spaces of weapons, though sometimes a second crewmember is carried as a commander, artillery observer or in some other role. This will reduce the turret capacity to 4 Spaces of weapons.

Most Field Rangers are set up as light transports, with only minor modifications, or as security/personnel transports using the survivability kit. These vehicles typically mount a machinegun on a pintle mount atop the cab and carry 6-10 infantry depending on the unit's preferences. A light patrol/logistics escort Field Ranger will typically have the survivability package and a small turret mounting a light autocannon and a pair of light air defence missiles on a rail launcher. The cost of this vehicle with weapons is Cr72500.

A fire-support or armoured recon vehicle will often mount a heavy autocannon or a medium-calibre direct-fire weapon such as an 85mm gun. These weapons are effective against light to medium combat vehicles but incapable of taking on battle tanks. If an LC-85 cannon is mounted, the revolving-cylinder magazine allows six shots, one per round, before the crewmember operating the weapon has to begin the laborious task of reloading. A pintle-mounted machinegun will usually be carried atop the turret, possibly with another on the cab roof.

ARMOUR

FRONT	6
REAR	6
SIDES	8
UNDER	6



NEGAV TEN-WHEEL OFF-ROAD TRANSPORT VEHICLE

Autopilot (skill level)	—	TL	9
Communications (range)	500 km	SKILL	DRIVE (WHEEL)
Navigation (Navigation DM)	+1	AGILITY	-1
Sensors (Electronics (sensors) DM)	0	SPEED (CRUISE)	MEDIUM (SLOW)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	750 (1125)
Stealth (Electronics (sensors) DM)	—	CREW	2
		PASSENGERS	—
		CARGO	9 TONS
		HULL	120
		SHIPPING	20 TONS
		COST	CR208800

TRAITS

Off-Roader

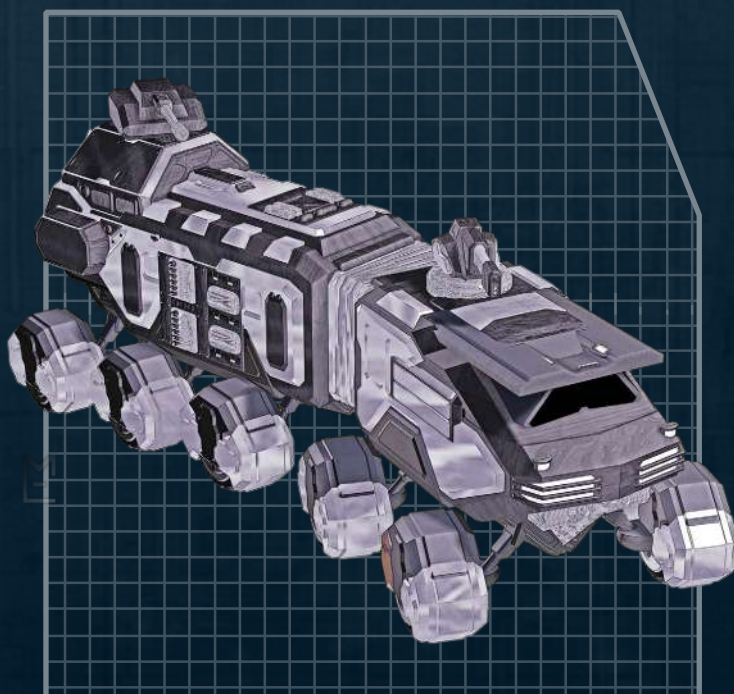
EQUIPMENT

Camouflage (improved), Communication System (improved, encrypted), Control Systems (improved), Fire Extinguishers, Navigation System (basic), Sensors (basic), Smart Wheels

DESCRIPTION

The Negav is an unusual design of off-road truck, with two articulated body sections. The front, four-wheel, section contains the cab and main driving/working area whilst the six-wheel section at the rear can be configured for a variety of roles. Both sections contain fuel cells, and all wheels are driven and steerable. This gives good off-road manoeuvrability for such a large ground vehicle.

The basic model is lightly armoured for protection against shell fragments and small arms fire. Underside armour is improved, and shaped to deflect blast from a mine sideways rather than upwards through the crew compartment. Equipment is serviceable but nothing special, with some communications and navigational aids. Nominal crew is two, though many versions carry additional personnel either to operate installed systems or operate dismounted. The basic model has 9 tons (36 spaces) of cargo capacity, which can be used to install a great variety of systems.



WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Machinegun	0.4	3D	100	CR100	Auto 3	—
Light Autocannon	1	6D	100	CR2000	Auto 3	—
Light Laser Cannon	2	8D	—	—	AP5	—
LC-85 (high explosive)	1.5	8D	6	CR3000	Blast 15	—
LC-85 (anti-armour)	1.5	8D	6	CR4500	AP 15, Blast 5	—

Survivability Enhancement Kit: The Negav is not intended to function as a combat vehicle, so its survivability kit focuses more on standoff weapons and air attack than direct fire. Armour is increased to 10 front and rear, 12 on the sides and 12 underneath. In addition an ECM (improved) suite is added along with a decoy dispenser and smoke discharger. A small turret atop the crew compartment replaces the roof hatch. It usually mounts a pair of 25mm autocannon but can take other weapons at need. With autocannon mounted the package costs Cr100000 and takes up 5 Spaces, reducing cargo capacity to 7.75 tons.

Headquarters Support Vehicle Modification: Using TL12 components, the HQ support vehicle kit is designed to instantly provide a medium-sized mercenary unit or other military formation with key functions. The vehicle's power system is replaced with a TL9 fusion plant, which takes up 10 spaces in the rear compartment. Power take-offs enable this vehicle to recharge others or run several ground-based systems. Most of the remainder of the rear compartment is taken up with a TL12 nuclear damper. A Computer/3 is also housed in the rear compartment, which additionally mounts a small turret containing a twin-mounted rotary autocannon with advanced TL12 fire control at the front end of its top side. A second small turret housing four light anti-aircraft missiles is mounted at the rear of the cargo section. A laser anti-missile system is mounted atop the crew compartment. As a result of all these modifications only 8 Spaces are left for cargo or additional personnel. This variant of the Negav is very expensive, with the new components plus the cost of the base vehicle bringing the price tag to MCr2.062, but it provides a unit's headquarters with virtually unlimited power, protection from nuclear attack and defence against aerospace and missile threats – all in a single, mobile package.

'Bombus' Conversion Package: Dubbed the 'Bombus' by a notoriously amateurish mercenary force, this conversion is still 'officially unofficial' but is requested often enough that many consider it a standard option. The intent is to turn what was designed as a transport vehicle into a mobile raiding platform.

Against a credible starfaring-tech opponent this vehicle would be questionable at best, but it can smash through most opposition put up by disorganised mid-tech opponents. Armour is heavily upgraded, with 20 points on the top, front and rear, 28 on the sides and 22 underneath.

The crew compartment is heavily modified, with an LC-85 cannon in a limited-traverse mount pointing forwards. This takes up most of one side of the compartment, limiting the crew to a driver and a gunner/loader whose working space is directly behind the driver. The gun and its associated autoloader take up 7 Spaces within the crew compartment, with most of the remaining area given over to tools and ammunition. Atop the crew compartment is a small turret mounting twin light autocannon in a high-angle turret. These weapons are capable of air defence or engaging ground targets but must be controlled by a crewmember from the rear compartment if the driver and cannon gunner are both busy.

The rear compartment is divided between a crew area and a TL9 fusion reactor, giving the vehicle more or less unlimited range. A full turret mounting a light laser cannon sits atop the compartment, with space inside for a single gunner. Additionally there are small sponsons on each side of the rear compartment, each carrying a pair of remote-controlled machineguns. There are crew stations for three personnel, plus one in the turret, bringing the vehicle's complement to six. A small amount of cargo space is used by gun racks and a wet bar.

The resulting gun-festooned monstrosity can function as a useful fire support vehicle or tank destroyer, though it is expensive and inefficient in either role. It has come to be associated with reports of gangs of trigger-happy yahoos kerb-stomping under-equipped yokels and is considered a questionable purchase by reputable mercenaries. The conversion brings the total cost of the vehicle to MCr1.8. This is more than a variant designed from the outset to follow this configuration and includes the cost of a base vehicle and subsequent modification work.

ARMOUR

FRONT	28
REAR	18
SIDES	22
UNDER	—



MARRIX LIGHT ARMoured COMBAT VEHICLE

Autopilot (skill level)	—	TL	9
Communications (range)	500 km	SKILL	DRIVE (TRACKED)
Navigation (Navigation DM)	+2	AGILITY	-1
Sensors (Electronics (sensors) DM)	+2	SPEED (CRUISE)	SLOW (VERY SLOW)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	500 (750)
Stealth (Electronics (sensors) DM)	—	CREW	3
		PASSENGERS	—
		CARGO	4.5 TONS + 0.75 TONS
		HULL	60
		SHIPPING	15 TONS
		COST	CR334500

TRAITS

AFV, Tracks

EQUIPMENT

Camouflage (improved), Communication System (improved, encrypted), Control Systems (improved), Decoy Dispenser, Fire Extinguishers, Navigation System (improved), Sensors (improved, hardened), Smoke Discharger

DESCRIPTION

Named after a venomous scuttling creature, the Marrix is one of the few tracked combat vehicles in widespread service with interstellar mercenary formations. Most forces favour wheeled or grav vehicles, or a combination of them, since they have better strategic mobility. Heavy tracklayers are well protected but can be vulnerable to powerful weapons they are unable to evade, but there is a solid market for light tracked combat and support vehicles in certain roles.

The Marrix family of vehicles is based on a common chassis and power plant, with fuel cells distributed under the driving and crew compartments, and a front-mounted motive unit which provides the crew with a measure of additional protection against bow hits. Armour protection is adequate to deal with light support weapons in all arcs, and can be upgraded with applique armour packs. All variants are fitted with decoy dispensers and smoke grenade launchers, and the majority of users add at least a pintle-mounted machinegun for self-defence.

The basic version has no turret although there is provision to fit one. All three crewmembers are housed in the front compartment with 3 Spaces available for additional systems or 750kg of small items. The rear compartment has 16 Spaces available for systems or personnel. Typically this is used to carry an 8-10 soldier section if the Marrix is functioning as an APC, in which case it will usually have a small turret mounting a light autocannon. This does not come as standard and must be bought separately. A pintle-mounted machinegun is typically added atop the driving compartment, though other weapons are possible. If the Marrix is in use as a logistics vehicle it can carry 4,000kg of cargo in the rear compartment, which is of course reduced if systems or weapons are added.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
LC-85 (high explosive)	1.5	8D	6	CR3000	Blast 15	—
LC-85 (anti-armour)	1.5	8D	6	CR4500	AP 15, Blast 5	—
MPS-22 Heavy Gauss Cannon	3	16D	150	CR1000	AP 16, Auto 3	—



Infantry Support Upgrade Package: The most basic upgrade package available adds a small turret capable of holding 4 Spaces of weapons. This takes up one Space in the rear compartment, costing Cr40000 for the turret alone. Typically the turret mounts a heavy autocannon such as the AC-60H model, for an additional cost of Cr600000. Turrets are fitted for high-angle fire, permitting a group of vehicles to act as an anti-aircraft battery – ideally under the central direction of a command unit.

Defensive Upgrade Package: The defensive upgrade package greatly increases armour protection using bolt-on applique sections and adds improved reactive armour. This upgrade costs Cr123000. Armour protection is increased to 86 on the front, 60 on the sides, 50 at the rear and 45 underneath, creating a vehicle capable of functioning as a battle tank. This modification is usually accompanied by a main-calibre gun or similar weapon in a full turret. It uses up 3 Spaces.

Primary Weapon Upgrade Package: The primary weapon upgrade package usually, but not always, includes a full turret. The standard turret is a 2-crewmember design, which consumes only 6 Spaces inside the vehicle but can hold 10 Spaces of weapons or systems in addition to the crew. The turret alone costs Cr250000. This turret is commonly used with a piece such as the FA-150 gun-howitzer to create a mobile artillery platform. The high angle of fire on these weapons makes them eminently suitable for direct-fire support operations in urban terrain, enabling snipers in high buildings to be taken out in a distinctly heavy-handed but effective manner. Alternatively, a straight tank-killer can be created by mounting a heavy gauss cannon. This weapon is above the nominal TL of the vehicle but several self-contained weapons are available.

ARMOUR

FRONT	7
REAR	8
SIDES	7
UNDER	9



TAISBEN MILITARY GRAV PLATFORM

Autopilot (skill level)	1	TL	8
Communications (range)	500 km	SKILL	FLYER (GRAV)
Navigation (Navigation DM)	+1	AGILITY	+2
Sensors (Electronics (sensors) DM)	+1	SPEED (CRUISE)	HIGH (MEDIUM)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	1000 (1500)
Stealth (Electronics (sensors) DM)	—	CREW	2
		PASSENGERS	—
		CARGO	1.5 TONS
		HULL	24
		SHIPPING	6 TONS
		COST	CR256900

TRAITS

EQUIPMENT

Autopilot (improved), Camouflage (improved), Communication System (improved, encrypted), Control Systems (improved), Decoy Dispenser, Fire Extinguishers, Navigation System (basic), Sensors (improved, hardened)

DESCRIPTION

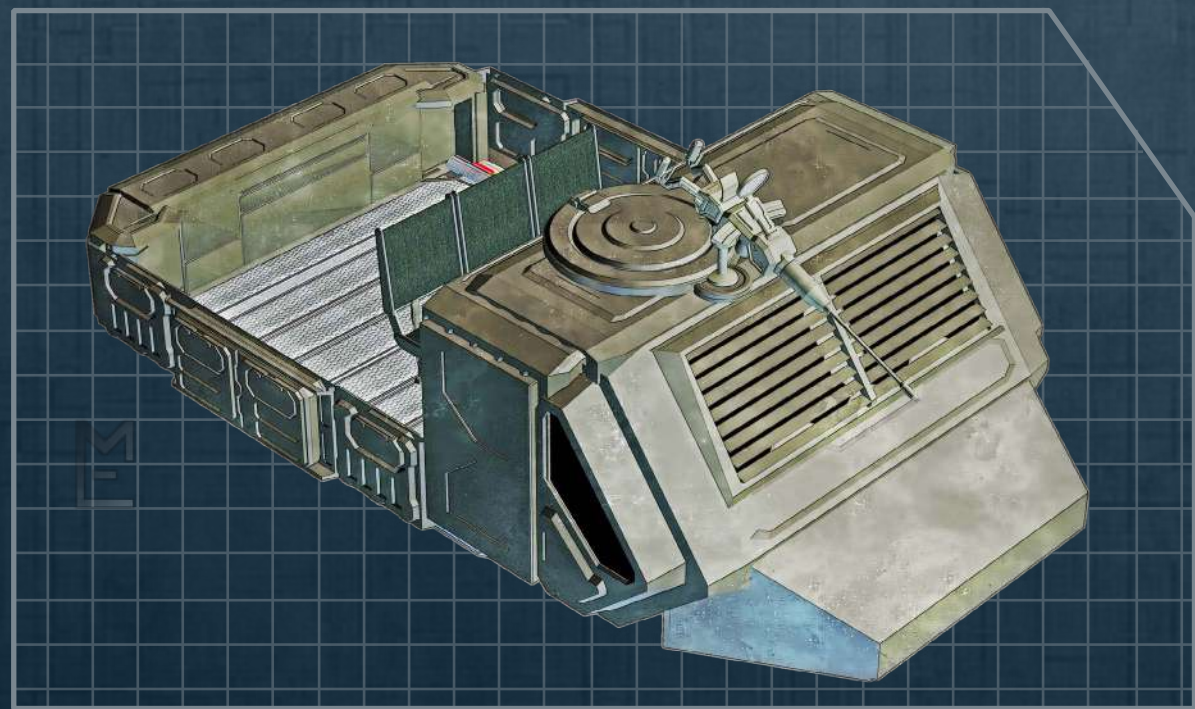
For all its martial pretensions, the base-model Taisben is basically a ruggedised civilian air/raft. Vehicles of this sort serve in the liaison role without conversion, and are primarily used for scouting or patrol work when they venture onto the battlefield. Some variants are more combat-worthy and can be encountered as fire support platforms or providing vertical mobility to urban combat formations.

The rather grandly named 'cockpit' has room for a pilot and a second crewmember, and is fully enclosed. It is lightly armoured and capable of withstanding small arms fire from all directions, with slightly better underside protection than elsewhere. The rear bed can be configured as a flatbed, low-sided passenger or cargo compartment, or as a fully enclosed systems compartment.

No armament is fitted as standard, but it is common to fit a pintle-mounted weapon on the cockpit roof, to be used by a crewmember standing on the seat through the roof hatch. The rear area can carry six Spaces or 1,500kg of cargo, or up to six people if they do not need to move around much. When in diplomacy and liaison mode the rear area is often outfitted to create a comfortable space for two VIPs or officers. This can cost anything from Cr2500 for some basic seats to upwards of Cr50000 for the unit that wants to impress. Outfitting in this manner does not alter the function of the vehicle.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Machinegun	0.4	3D	100	CR100	Auto 3	—
Light Autocannon	1	6D	100	CR10000	Auto 3	—
LC-85 (high explosive)	1.5	8D	6	CR125000	Blast 15	—
LC-85 (anti-armour)	1.5	8D	6	CR125000	AP 15, Blast 5	—



Enhanced Survivability Package: An additional layer of applique armour increases protection to 16 all-round including the underside, allowing the vehicle to survive fire from a heavy machinegun or similar weapon in all arcs except from above. In addition an improved electromagnetic countermeasures suite is fitted in the rear area though it is usually controlled from the cockpit. These measures increase cost by Cr50000 and reduce cargo or passenger capacity by 2 Spaces. Vehicles in this configuration are typically used for light patrol work, often with 2-4 personnel riding in the rear compartment.

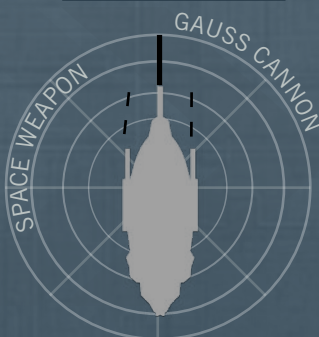
Urban Prowler: The ‘urban prowler’ has an open-topped rear area with a half-ring mount each side. These typically mount a light autocannon on each side, operated by two crewmembers who stand in the rear of the vehicle. If this modification is paired with the enhanced survivability package, all available space and lifting capacity is used up. Fitting the autocannon, with gun shields and ring mounts,

increases cost by Cr25000. This modification’s name comes from its initial concept as a close-range fire support vehicle for personnel operating in cities with tall buildings, but in practice it can be encountered as a top-cover and overwatch vehicle on open-country patrols or convoys.

Tank Destroyer: The tank destroyer variant is an attempt to create an inexpensive fire-support and grav-strike platform on a very limited budget. A heavy weapon, such as the LC-85 cannon, is mounted in a front-firing limited-traverse mount running right through the side of the cockpit normally occupied by the second crewmember. The gunner’s position is in the rear of the vehicle, along with a limited supply of ammunition. With no spare capacity for improved armour, this vehicle is vulnerable but can provide useful fire support or ambush light armoured vehicles in urban or cluttered vertical terrain. Modification to fit the cannon costs Cr150000 including the gun, and takes up all available space.

ARMOUR

FRONT	14
REAR	14
SIDES	14
UNDER	15



PREPLENN FAST ATTACK PLATFORM

Autopilot (skill level)	3	TL	12
Communications (range)	500 km	SKILL	FLYER (GRAV)
Navigation (Navigation DM)	+4	AGILITY	+5
Sensors (Electronics (sensors) DM)	+1	SPEED (CRUISE)	VERY FAST (FAST)
Camouflage (Recon DM)	—	RANGE (CRUISE)	3000 (4500)
Stealth (Electronics (sensors) DM)	-2	CREW	2
		PASSENGERS	—
		CARGO	—
		HULL	6
		SHIPPING	3 TONS
		COST	MCR1.195

TRAITS

EQUIPMENT

Autopilot (advanced), Communication System (advanced, encrypted), Control Systems (advanced), Decoy Dispenser, Ejection Seats x2, Fire Extinguishers, Navigation System (advanced), Sensors (improved, hardened), Stealth (improved)

WEAPONS

Fixed Mount (gauss cannon)
Bay (one Space weapon x2)
Hardpoints (one Space weapon) x3

DESCRIPTION

The Preplenn is a small avian creature native to the homeworld of Dirgess Industries, a medium-sized constructor of military and paramilitary grav craft. Like its namesake, the Preplenn fast attack platform is designed to strike hard and fast, often from behind the concealment of terrain. The fuselage and critical spaces are lightly armoured, making them proof against small arms fire from all likely angles. The underside has been given enhanced protection as is common with vehicles intended for the air support and strike role.

Primary armament is a gauss cannon in a fixed mount, suitable for ground attack or air-to-air combat against less agile or large targets. In addition the Preplenn has an internal weapons bay capable of holding two one-Space weapons and three underside hardpoints capable of carrying three more. It is not uncommon to encounter Preplenn class strike platforms in a swing-role configuration, equipped with light anti-air missiles on the three external hardpoints and bombs or missiles in the internal bay.

The usual deployment for this craft – which it was designed for – is as a tankbuster and close-support platform, enabling mercenary forces to provide their own air support without need for runways or extensive infrastructure. Typically the main gun is operated by the pilot, with the weapons operator delivering missiles or guided bombs using the secondary fire control system. Fire control is provided for both crew positions and can be switched between weapons as needed. The cost of the base model includes the gauss cannon but no missiles or bombs.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Gauss Cannon	2	1DD	100	CR1000	AP 10, Auto 3	+4
Light AA Missile	5	6D	1	—	One Use, Smart	+4
Guided Bomb	—	1DD	1	—	One Use, Smart	+4
Rotary Autocannon	1	6D	500	CR1200	Auto 5	+4
Vulcan Machinegun	0.5	4D	1000	CR1250	Auto 6	+4
HighStrike Missile	120	2DD/12D	1	—	Blast 8/25, Smart	+4



Aerospace Supremacy Variant: Where lightly armoured flying targets are more likely than tanks, this variant provides maximum firepower at the expense of penetration. The gauss cannon is replaced with a pair of rotary autocannon, with a pair of rotary machineguns installed in the internal weapons bay. The three underside hardpoints are normally used for light AA missiles but any or all of them can carry rotary machineguns in streamlined packs. This gives the Preplenn a potential of five rotary machineguns and two rotary autocannon, which is enough to chew any mid-tech aircraft out of the sky. The same weapons fit can be used to create a formidable ground-attack platform, at least against lightly armoured targets. The 2-autocannon/2-machinegun package costs Cr80000 which actually reduces the cost of the vehicle by Cr20000. Each rotary machinegun pack costs Cr15000 if added to a hardpoint.

Interceptor Variant: Intended for area air defence against large aircraft or perhaps ballistic missiles, the interceptor variant replaces its gauss cannon with a pair of rotary autocannon and carries light anti-air missiles in the internal bay. The three underside pylons are merged to support a long-range anti-air missile. In this role the interceptor's ability to take off from a hidden forward position without the use of a runway and to climb to altitude in a short time are of paramount importance. The large missile is effective against heavy bombers or transport aircraft and can even be used to attack satellites in low orbit. This variant is Cr50000 cheaper than the standard one before missiles are purchased, but if an expensive missile such as HighStrike is used the cost increases considerably.

ARMOUR

FRONT	20
REAR	18
SIDES	18
UNDER	17



CHAGRIDE GRAV SLED

Autopilot (skill level)	0	TL	10
Communications (range)	500 km	SKILL	FLYER (GRAV)
Navigation (Navigation DM)	+2	AGILITY	+2
Sensors (Electronics (sensors) DM)	+1	SPEED (CRUISE)	FAST (MEDIUM)
Camouflage (Recon DM)	-2	RANGE (CRUISE)	2000 (3000)
Stealth (Electronics (sensors) DM)	—	CREW	3
		PASSENGERS	—
		CARGO	5500KG
		HULL	64
		SHIPPING	16 TONS
		COST	CR309000

TRAITS

EQUIPMENT

Autopilot (basic), Camouflage (improved), Communication System (improved, encrypted), Control Systems (enhanced), Decoy Dispenser, Fire Extinguishers, Navigation System (improved), Sensors (improved, hardened)

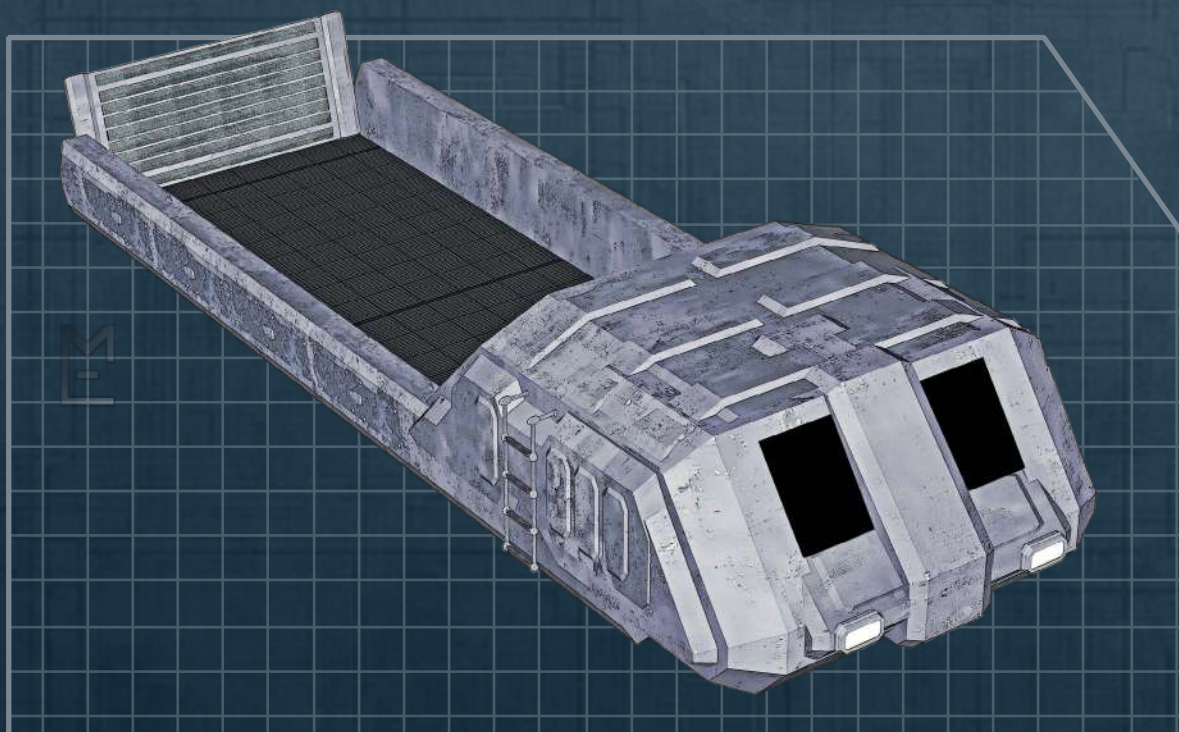
DESCRIPTION

The Chagride was developed as an inexpensive grav APC, and like many vehicles in the marketplace it has been used as the basis for a range of variants. As a result the basic model is known by the designation 'grav sled' rather than any role-specific term. The actual role of the vehicle is indicated by a second term, such as Chagride Ambulance or Chagride Fire Support Vehicle. This tells personnel what they need to know – what the vehicle does and which chassis it is based upon.

The basic Chagride grav sled has three crew positions, all up front in the driving compartment, and can be configured with an open or closed rear structure. No weapons are fitted as standard. Armour is sufficient to give all-round protection from infantry-portable anti-vehicle weapons and light support weaponry, and can be upgraded with a bolt-on armour package. The rear area holds 22 Spaces or 5,500kg of cargo, sufficient to deploy an 8-10 soldier infantry section with room for some supplies or equipment. Limited NBC protection is available as an option, adding a hostile environment package and short-term life support. This consumes one Space and adds Cr170000 to the price. There is no airlock with this package, which is intended to allow the vehicle to survive NBC attack rather than operate for an extended period in a contaminated area.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Machinegun	0.4	3D	100	CR100	Auto 3	—
AC-60H (frag)	3	1DD	100	CR2000	Blast 10, Auto 3	—
AC-60H (anti-armour)	3	1DD	100	CR2000	Blast 10, Auto 3	—
Resgaw-220	10	2DD	12	CR20000	Blast 16, One Use	—



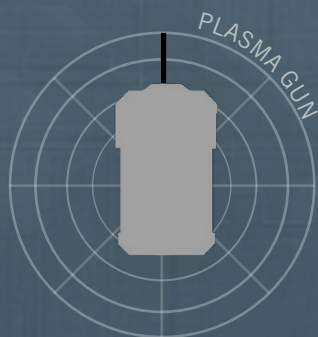
Survivability Upgrade: Bolt-on armour plates and inserts increase protection to 28 rear and sides and 24 top and bottom. Frontal armour is 30. The vehicle's structure cannot carry much more than this without a complete rebuild. This package consumes 2 internal Spaces and adds Cr160000 to the cost.

Fire Support Upgrade: Adding a full-sized turret uses 4 Spaces inside the vehicle and costs Cr125000. The turret is self-contained and remotely controlled from the crew compartment. Ready ammunition is stored within the turret, with reloading possible from within the vehicle through a pair of hatches in the crew compartment roof. The turret cannot traverse with the reloading mechanism in use. Standard armament is a 60mm autocannon and a co-axial machinegun in a low-profile turret, though other turrets will fit on the mountings. Adding a turret in this configuration costs Cr180000, or Cr325000 if combined with an armour refit. Cargo capacity is reduced to 18 Spaces or 16 Spaces with the armour refit, though 8-10 infantry soldiers can still be carried.

Artillery Sled Modification: The Chagride is the basis for a variety of artillery platforms, some of which are fairly modest. One common modification adds an enclosed 220mm rocket artillery system protected by the vehicle's armour until raised into firing position. Eight unguided 220mm artillery rockets are carried, with no reloads. These can be launched singly but are almost always used in multiples. The ability of a grav platform to approach within firing range then retreat quickly allows a suitably equipped force to harass enemies without becoming vulnerable to counter-battery fire. The missile system takes up 12 Spaces and costs Cr40000. No autoloader can be fitted due to space constraints, so typically a Chagride will launch then retire for rearming. Autoloader-equipped vehicles – which might be others on the Chagride chassis or soft-skinned support platforms – can rearm the launcher at a suitable rendezvous point. Some users carry a set of spare missiles in the rear compartment and reload manually, though this is heavy work for a 3-person crew. Others carry no reloads and use the remaining space in the vehicle for defensive weaponry.

ARMOUR

FRONT	60
REAR	40
SIDES	40
UNDER/TOP	38/38



SAITA GRAV TANK

Autopilot (skill level)	3	TL	12
Communications (range)	500 km	SKILL	FLYER (GRAV)
Navigation (Navigation DM)	+2	AGILITY	+2
Sensors (Electronics (sensors) DM)	+1	SPEED (CRUISE)	FAST (MEDIUM)
Camouflage (Recon DM)	—	RANGE (CRUISE)	UNLIMITED
Stealth (Electronics (sensors) DM)	-2	CREW	4
		PASSENGERS	—
		CARGO	1.5 TONS
		HULL	80
		SHIPPING	20 TONS
		COST	MCR12.299

TRAITS

AFV

DESCRIPTION

The Saita grav tank was developed for the commercial market, though it can be encountered in service with many governmental clients as well. Like most grav tanks it is designed for a ground-hugging mode of operation, using terrain for cover and firing over it rather than flying above the battle area and firing down.

Armour is allocated in a classic tank style, with a heavy frontal glacis plate and lighter armour at the sides and rear. Top and underside protection are good for a vehicle of this class, allowing highly mobile dash-and-strike manoeuvres to be undertaken with relative impunity. This is still a light tank, of course, and by no means invulnerable.

Internally, the tank is built around two interconnected compartments. The driving compartment contains the driver and commander, with the gunner and a technical crewmember seated in the rear compartment. No personnel are carried in the turret, which is remotely controlled and separated from the rest of the tank. Saitas have survived having the turret blasted off by a fusion gun, through the cost of a rebuild would likely be prohibitive if the fusion reactor were to be damaged in any significant way.

The fusion reactor is the heart of the vehicle and contributes most to its high price tag. The decision to install one has always been controversial, but was based on an analysis of the likely market. An on-board reactor gives virtually unlimited range and more importantly eliminates downtime for charging. A unit that wants to operate grav tanks will need a reactor to charge them anyway so cannot avoid the cost, and whilst larger forces could get more armoured firepower for their Credits by buying a charging vehicle and non-fusion powered tanks, these would have to rotate through states of readiness.

Primary armament is a C-type plasma cannon, which takes up the entire 16-Space turret. Smaller or more compact weaponry can be fitted if this is desirable, depending on the intended role of the vehicle. The plasma gun has a nominal range of 12km but this assumes a high position and downward fire over terrain undulations. Against lower-tech foes a grav tank can get away with firing from altitude but against credible opponents it must stay low and use cover, in which case the effective range of the weapons greatly reduced.

EQUIPMENT

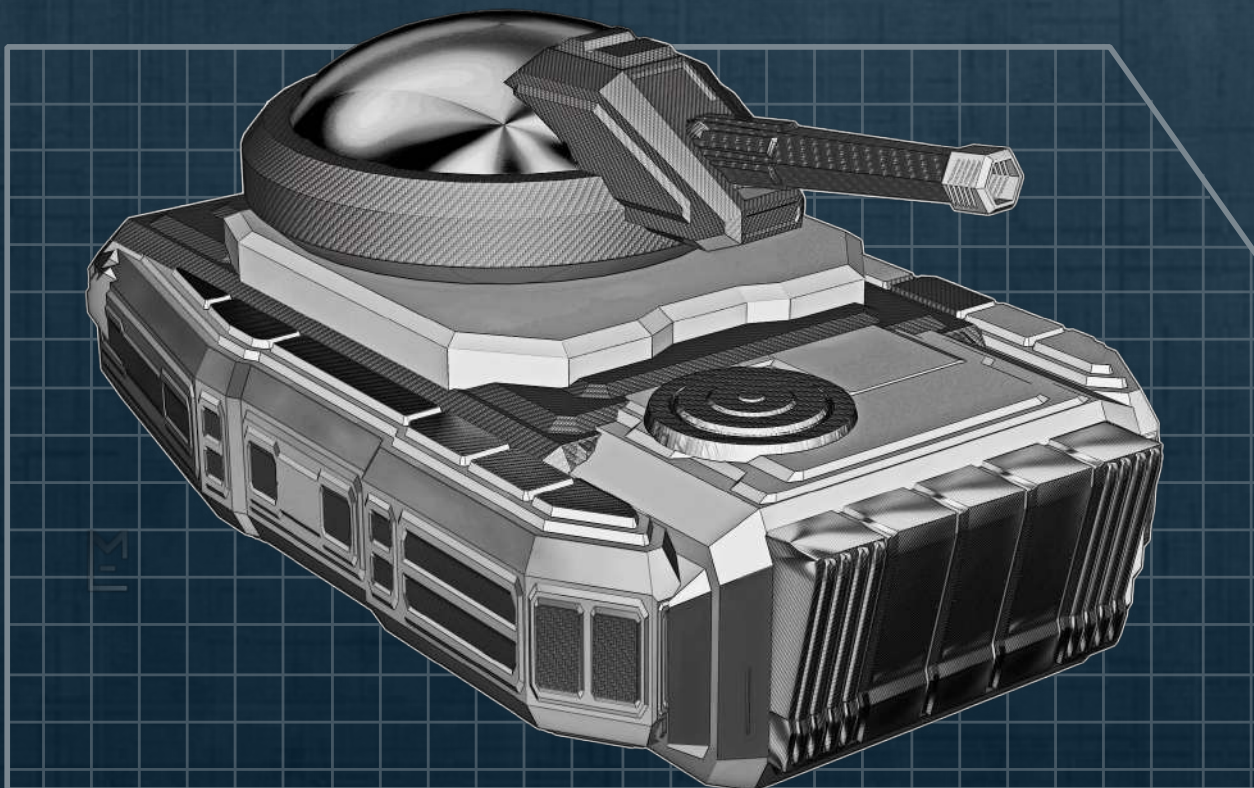
Anti-Missile System (gauss), Autopilot (advanced), Communication System (advanced, encrypted), Computer/3, Control Systems (advanced), Decoy Dispenser, ECM (advanced), Fire Extinguishers, Fusion Reactor (advanced), Hostile Environment, Life Support (short-term), Navigation System (improved), Sensors (improved, hardened), Stealth (improved)

WEAPONS

Large Turret (plasma gun-C)

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Plasma Gun-C	12	2DD	—	—	AP 30	+4



Up-Armoured Variant: Additional armour can be applied, bringing protection to 80 front, 70 sides, 60 rear and 53 top and bottom. This costs Cr900000 and uses up 4 of the vehicle's 6 remaining Spaces. An additional +30 protection all-round can be added using reactive armour at a cost of Cr200000.

Non-Fusion Variant: A version powered by rechargeable fuel cells is also available, costing MCr2 less than the standard version. Some users purchase one fusion tank to lead a platoon, with the others taking power from it when necessary. The fusion reactor bay can be used for stowage or additional systems, adding 10 Spaces (2.5 tons) to the vehicle's capacity.

ARMOUR

FRONT	12
REAR	12
SIDES	12
UNDER	10



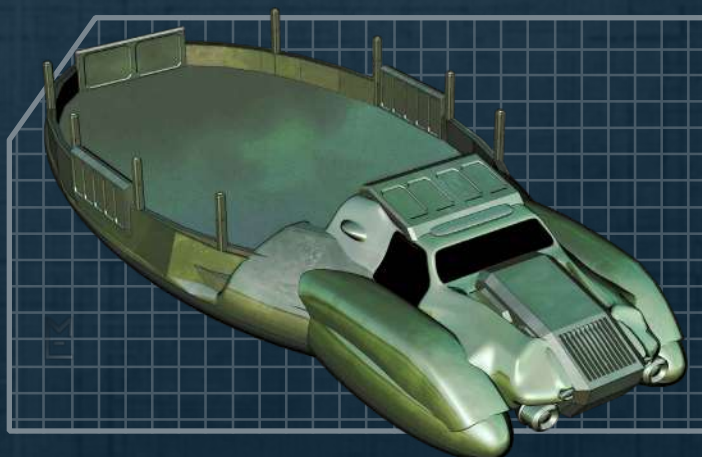
S-SERIES GRAV TRANSPORT

Autopilot (skill level)	1	TL	9
Communications (range)	500 km	SKILL	FLYER (GRAV)
Navigation (Navigation DM)	+2	AGILITY	+1
Sensors (Electronics (sensors) DM)	+1	SPEED (CRUISE)	HIGH (MEDIUM)
Camouflage (Recon DM)	—	RANGE (CRUISE)	2000 (3000)
Stealth (Electronics (sensors) DM)	—	CREW	2
		PASSENGERS	—
		CARGO	12.5 TONS
		HULL	120
		SHIPPING	30 TONS
		COST	MCR5.421

TRAITS

EQUIPMENT

Autopilot (basic), Communication System (improved, encrypted), Computer/2, Control Systems (enhanced), Decoy Dispenser, Fire Extinguishers, Navigation System (improved), Sensors (improved, hardened), Vehicular Citadel (4 spaces), Vehicular NBC Protection (standard)



DESCRIPTION

The S-series is a large grav transport developed to meet a variety of needs. The basic unit is a lightly armoured 'grav truck' suitable for most logistics or personnel movement needs. Its broad oval hull form is reasonably aerodynamic, though awkwardly shaped cargoes carried on an open frame can catch the wind alarmingly. The driving compartment has space for two crewmembers and is separated from the configurable rear area by a bulkhead pierced by a strongly built hatch. The rear area has drop-down sides and rear to allow loading from all angles. These outer walls are only 1m high above the truck bed, with extendable posts to permit a soft covering to be applied at need. A fully-enclosed model with permanent sides is available at no extra cost, used as the basis for most variants.

The basic S-Series is armoured all round against small-arms fire, including its underside. Top armour is notoriously weak, but this was never intended to be a combat vehicle. The crew ride in an NBC-protected citadel which has an additional 20 points of armour. No weapons are fitted as standard, but many users add a remote-controlled machinegun or similar light support weapon on the cab roof. In its basic logistics configuration the S-series is assigned the reporting name 'Skate' whilst when serving as a personnel transport it is referred to as 'Snake'. A Snake can easily transport an entire platoon of infantry, and some users fit pintle mounts around the periphery of an open-topped vehicle for support weapons.

WEAPONS

WEAPON	RANGE	DAMAGE	MAGAZINE	MAGAZINE COST	TRAITS	FIRE CONTROL
Laser Anti-Missile System	0.5	1D	—	—	Auto 3	—
Machinegun	0.4	3D	100	CR100	Auto 3	—
Blackjack (explosive)	1	10D	6	CR3000	Blast 12	—
Blackjack (canister)	1	8D	6	CR2400	Blast 5, Lo-Pen 2	—
Blackjack (rocket assisted penetrator)	1.2	4D	6	CR6000	AP 16, Blast 2	—
AC-40 (HEDP)	10	9D	100	CR9000	Auto 3	—
AC-40 (canister)	0.2	10D	100	CR9000	Auto 3	—
LC-85 (high explosive)	1.5	8D	6	CR3000	Blast 15	—
LC-85 (anti-armour)	1.5	8D	6	CR4500	AP 15, Blast 5	—
AC-25 (explosive)	2.5	9D	100	CR6000	Blast 3, Auto 3, Lo-Pen 2	—
AC-25 (AP)	2.5	6D-3	100	CR4000	AP 7, Auto 3	—
AirSpace (laser)	2	8D	2	—	—	—
AirSpace (missile)	5	6D	1	CR2500	—	—

High-Survivability Variant ('Sermon'): An applique armour package increases armour protection to 20 front, back and sides, with 18 on the underside and 14 on top. A laser anti-missile system is fitted atop the cab roof and an improved ECM unit is built into the front of the cargo area. This adds Cr750000 to the cost of the vehicle and reduces cargo capacity to 42 Spaces (10.5 tons).

Mobile Hospital Variant ('Studio'): The mobile hospital variant mounts a TL10 field medical unit inside the rear compartment, carried in ready condition and able to be set up or closed down for travel in a matter of minutes. This variant costs MCr7.171. It has 10 Spaces (2.5 tons) for stores, spares or additional facilities. This space is often turned into a 'travel lounge' for the medical professionals assigned to the vehicle.

Mobile Support Variant ('Scholar'): The mobile support variant attempts to pack a unit headquarters into a single vehicle. It incorporates the protection of the Sermon variant and in addition carries a TL10 fusion plant and a field nuclear damper. A small command centre, capable of supporting six personnel, is housed within a second citadel connected to the driving chamber by a short tunnel. No weapons are fitted as standard but there are 9 spaces available for weapons, cargo or any additional facilities the user may want. Cost is Cr7,566,575.

Direct Support Variant ('Salacious'): The direct support variant was given the reporting name Salacious as a convoluted reference to potential users apparently needing to compensate for something. The basic vehicle has been heavily up-armoured, raising protection to 30 all round and

27 underneath. The cab has 15 points of top protection but the rest of the vehicle is open-topped. The rear compartment is crossed by two large beams, from which a pair of outriggers are slung along the sides of the vehicle. These have open weapon stations at the front, rear and centre, with a gunner seated directly at the weapon they control.

Armament can vary but 'showroom standard' is a Blackjack gun/missile system in the front position on each side, with a co-axial machinegun. The weapon station for these includes space for a gunner and loader, with 18 rounds for the gun and three missiles. The central and rear stations mount AC-40 medium automatic cannon, with a single operator and hopper containing 200 rounds for each gun. All guns have a co-axial machinegun.

The outriggers take up a lot of the vehicle's lifting capability, and their supports block off much of the rear compartment. Aft of the rear support is a mounting for an AirSpace defence system and an operator station for it, consuming all available space in that area. Immediately behind the cab, between it and the forward strut, is a built-up framework supporting a turret. This mounts an LC-85 cannon and a co-axial 25mm autocannon, remotely controlled from the cab.

The conversion process requires some sub-optimal arrangement of components, with the result that only 10 Spaces (2.5 tons) remain in the centre of the open rear section. Some users carry additional ammunition, whilst others find a way to cram more weaponry into this space. Cost without weapons is Cr650000. With the weapons fit listed above the vehicle costs an additional Cr750000.

STARSHIPS

The majority of mercenary units cannot afford starships of their own. Those that could will often choose to spend the money on combat-related hardware instead. Starships are essential to the operations of two kinds of mercenary force, however. Those that operate primarily as a starship crew – known as starmercs – typically act as escorts for merchant traffic or protectors of vulnerable star systems and are organised differently to the typical ground-combat unit. Some mercenary forces are geared towards ground combat but require starships as an integral part of their equipment, such as space-mobile formations or orbital assault units. The remainder will obtain and use starships if they seem useful and are available at an affordable price.



DIPLOMATIC SKIFF

GRAVITAS-CLASS

The *Gravitas*-class is intended to function as a diplomatic or headquarters vessel. Most commonly, it is used by well-off mercenary units to transport representatives. These may be attending conferences or meetings with potential clients, visiting arms fairs or negotiating with a weaponry supplier. The ability to house emissaries in a secure and mobile facility is also useful during delicate negotiations with unreliable opponents. The *Gravitas* provides all this, as well as the capability to bring a client close to the combat zone and keep them informed without placing them in danger.

Some specialist formations operate the *Gravitas* as a major asset. These are not starmerces per se, since they provide strategic or groundside services such as electronic warfare, intelligence and strategic analysis and the like. In this role the vessel essentially serves as a mobile command post rather than combat asset, though it may be armed for self-defence.

Hull form is a typical 'humped cylinder', arranged as two primary decks. The drives and engineering spaces are housed in a two-deck-high section right aft, with the bridge above these on a dorsal hump. Forward of engineering is the accommodation block. On the upper deck are four standard staterooms and two high-quality staterooms, with a lounge area forward of these. On the lower deck is a block of barracks-

like accommodation with its own associated leisure/working area. This is not required on some vessels and often converted to other uses. Forward of the accommodation/barracks block on the lower deck are the medical and workshop areas, plus an oversized armoury. The forward section of the upper deck contains a briefing/analysis/command suite whose operation is the primary function of many vessels.

Performance is quite lively, which can be useful when getting into and out of a combat zone and which also allows the *Gravitas* to act as a coordination platform for long-range missile strikes or control vessel for fighters. It is not commonly deployed in a space combat operations role, however, and would normally host an intelligence or cyber-warfare staff in its mission chambers. These can also be used as a command post or to impress a potential client.

Weaponry is defensive, and backed up by a lightly armoured hull. Both turrets are carried on the dorsal surface, in a pronounced central hump and a smaller forward one. Standard armament is a dual pulse laser turret forward to engage enemy craft and a multi-purpose turret mounted centrally. As standard this has a beam laser and a sandcaster for defensive work plus a missile rack which can be used to deploy satellites or in a more conventional combat role.



DIPLOMATIC SKIFF

GRAVITAS-CLASS

TL12		TONS	COST (MCr)
Hull	200 tons, Streamlined	—	12
Armour	Crystaliron, Armour: 4	10	2.4
M-Drive	Thrust 4	8	16
Jump Drive	Jump 2	15	22.5
Power Plant	Fusion (TL12), Power 180	12	12
Fuel Tanks	J-2, 8 weeks of operation	42.4	—
Bridge	Holographic Controls	10	1.25
Computer	Computer/20	—	5
Sensors	Improved	3	4.3
	Sensor Stations x4	4	2
	Improved Signal Processing	1	4
Weapons	Double Turret (pulse lasers)	1	2.5
	Triple Turret (beam laser, sandcaster, missile rack)	1	2.5
Ammunition	Munitions Bays x2	2	—
Systems	Repair Drones	2	0.4
	Medical Bay	4	2
	Briefing Rooms x2	8	1
	Armouries x2	2	0.5
	Workshop	6	0.9
Staterooms	High x2	12	1.6
	Standard x4	16	2
	Barracks x8	16	0.4
Common Areas		24	2.4
Software	Manoeuvre/0	—	—
	Jump Control/2	—	0.2
	Library	—	—
Cargo Space		0.6	—
TOTAL: MCr 97.85			

CREW

CAPTAIN, PILOT,
ASTROGATOR, ENGINEER

RUNNING COSTS

MAINTENANCE COST
Cr8154.17/month

PURCHASE COST
MCr97.85

POWER REQUIREMENT

80
MANOEUVRE
DRIVE

40
BASIC SHIP
SYSTEMS

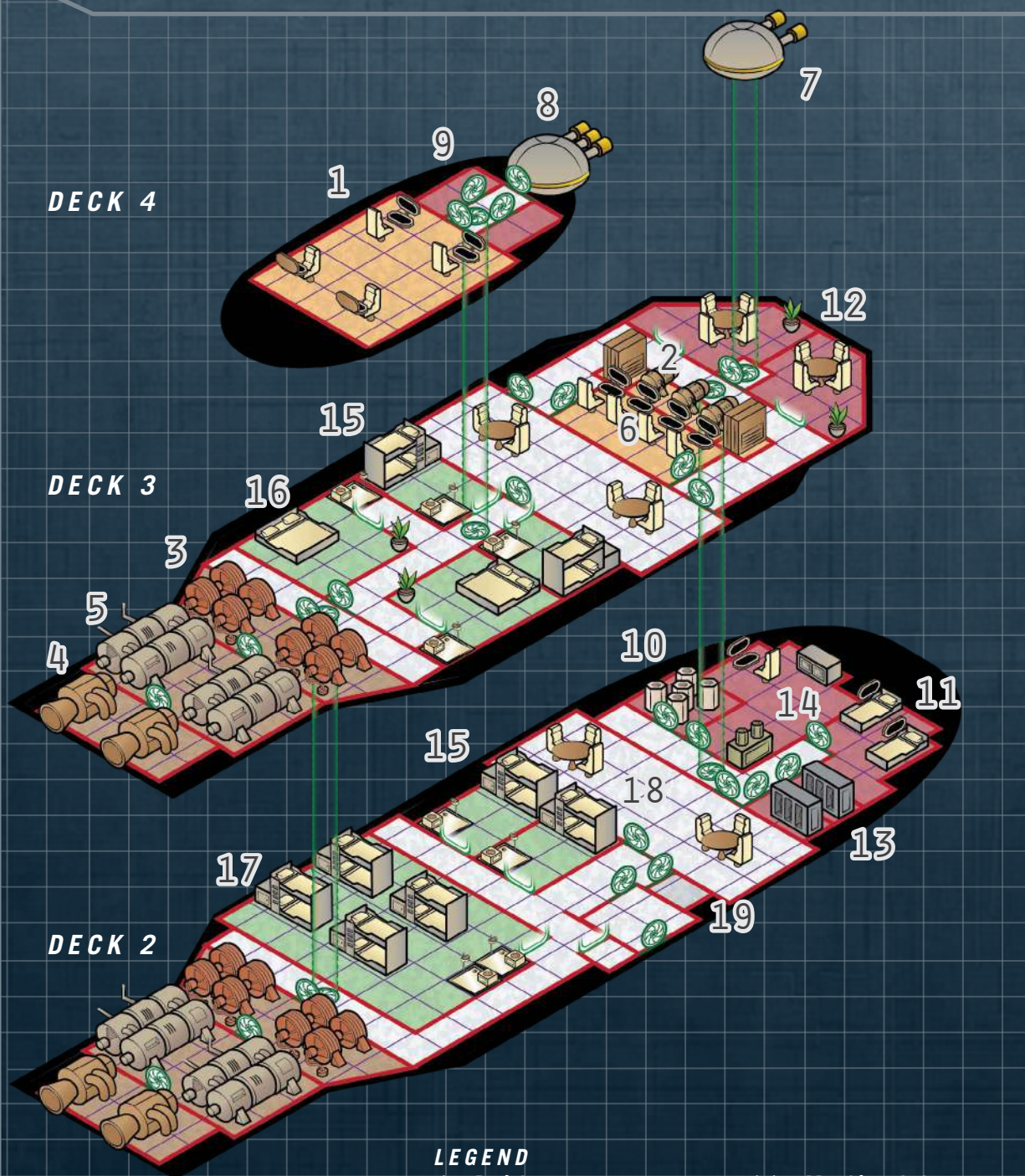
40
JUMP
DRIVE

1
SYSTEMS

14
WEAPONS

5
SENSORS

80
HULL POINTS



**DECK 1
(FUEL ONLY)**

LEGEND

- | | |
|--------------------|---------------------|
| 1. Bridge | 11. Medical bay |
| 2. Sensors | 12. Briefing rooms |
| 3. Power plant | 13. Armouries |
| 4. M-drive | 14. Workshop |
| 5. J-drive | 15. Staterooms |
| 6. Sensor stations | 16. High Staterooms |
| 7. Double turret | 17. Barracks |
| 8. Triple turret | 18. Common area |
| 9. Munitions bays | 19. Cargo hold |
| 10. Repair drones | |

GUNSHIP

SHADOW-CLASS

The *Shadow* was developed from the outset as a space combat vessel to be used by mercenaries or small navies. It is not designed to fight larger vessels unless they are very lightly armed, as its intended space-combat role is piracy suppression and protection of commerce. It does make an effective commerce raider or light combat vessel, and was designed to operate with or protect the *Gravitas*-class diplomatic vessel. The *Shadow* can also transport a platoon of ground troops, though long-term occupancy is inadvisable. In this role, the gunship can deliver troops and their personal equipment but relies on a support vessel to transport heavy equipment and supplies for a long-term deployment. If troop transport capability is not desired the barracks and its associated common area can be converted to other uses.

Hull form is a 'cranked wedge' configuration, with a wide 2-deck high section at the rear and a narrower single-deck section projecting forward from it. Drives are located aft on both decks, with the barracks area, workshops, medical bay and armoury forward

of them. The upper deck contains crew staterooms and a small common area, forward of which lie the bridge and command spaces.

The dual-purpose turrets are located atop the wedge section, each with a small missile magazine. When not launching missiles these turrets can provide defensive fire. The two triple turrets rest atop the main dorsal surface and are primarily used to engage enemy vessels.

The vessel requires a crew of 9 for normal operations, though adding a medic is advisable. Some users dispense with the barracks and convert the lower deck into a vehicle bay and deployment area. Giving the ship's commander and the leader of ground troops their own stateroom and moving all other crew into double occupancy leaves six staterooms which can be used by up to twelve groundside personnel. This frees up the whole barracks and troops' common area for spares and supplies or vehicles and combat equipment.



GUNSHIP *SHADOW-CLASS*

TL12		TONS	COST (MCr)
Hull	400 tons, Standard	—	20
Armour	Crystaliron, Armour: 8	40	8
M-Drive	Thrust 4	16	32
Jump Drive	Jump 2	25	37.5
Power Plant	Fusion (TL12), Power 375	25	25
Fuel Tanks	J-2, 8 weeks of operation	85	—
Bridge	Holographic Controls	2	2.5
Computer	Computer/20	—	5
Sensors	Improved	3	4.3
Weapons	Triple Turrets (pulse laser x2) x2	2	8
	Triple Turrets (beam laser, missile rack x2) x2	2	4
Ammunition	Munitions Bays x2	2	—
Systems	Repair Drones	4	0.8
	Medical Bay	4	2
	Armouries x2	2	0.5
	Workshop	6	0.9
	Briefing Room	4	0.5
Staterooms	Standard x12	48	12
	Barracks x40	80	2
	Low Berths x4	2	0.2
Common Areas		26	2.6
Software	Manoeuvre/0	—	0
	Jump Control/2	—	0.2
	Library	—	—
Cargo Space		4	—
TOTAL: MCr 168			

CREW

CAPTAIN, PILOT,
ASTROGATOR, ENGINEERS X2,
GUNNERS X4

RUNNING COSTS

MAINTENANCE COST
Cr14000/month

PURCHASE COST
MCr168

POWER REQUIREMENT

160

MANOEVRE
DRIVE

80

BASIC SHIP
SYSTEMS

80

JUMP
DRIVE

2

SYSTEMS

36

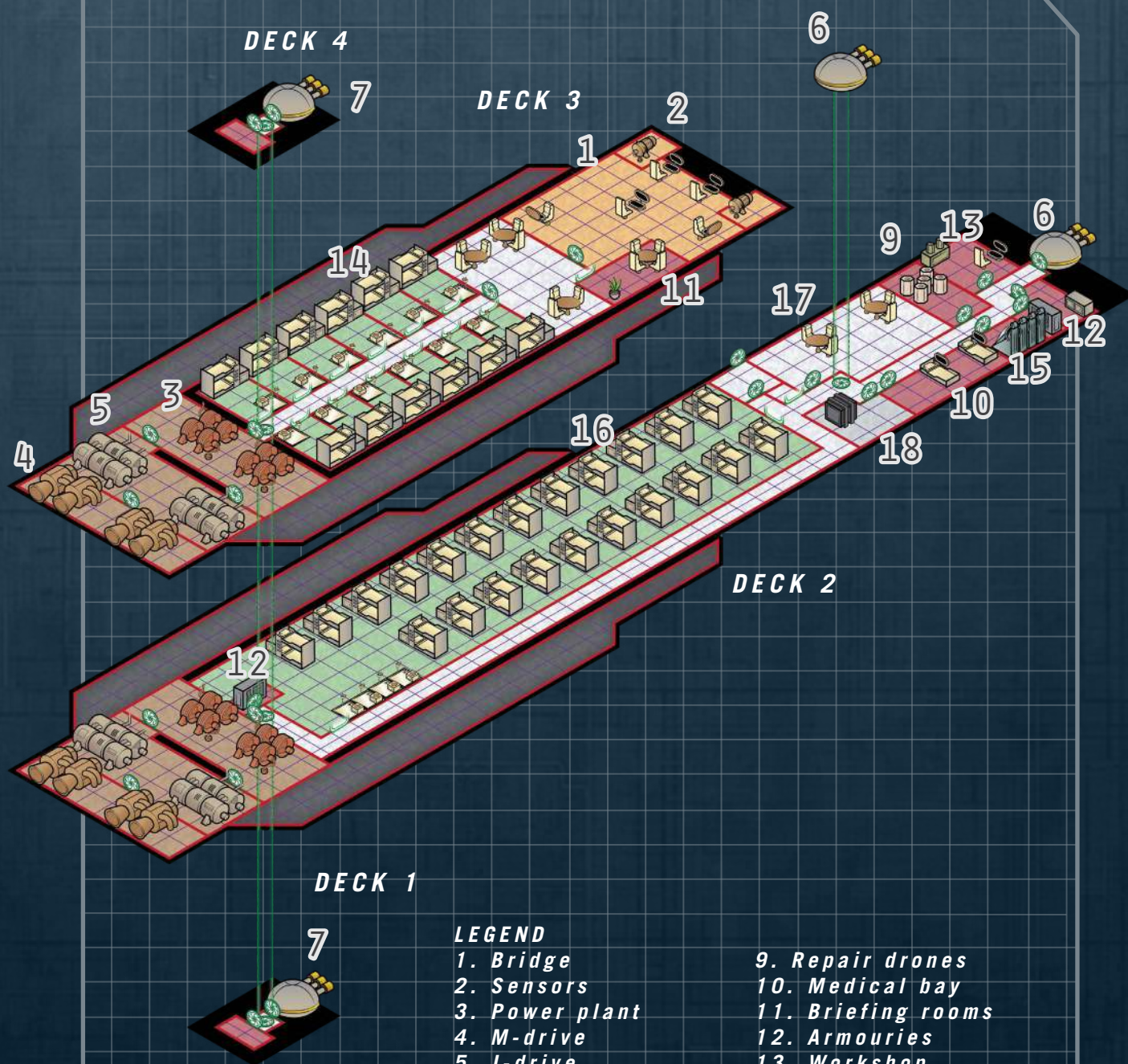
WEAPONS

4

SENSORS

160

HULL POINTS



LEGEND

- | | |
|--|--------------------|
| 1. Bridge | 9. Repair drones |
| 2. Sensors | 10. Medical bay |
| 3. Power plant | 11. Briefing rooms |
| 4. M-drive | 12. Armouries |
| 5. J-drive | 13. Workshop |
| 6. Triple turrets
(pulse lasers) | 14. Staterooms |
| 7. Triple turrets
(beam laser,
missile rack) | 15. Low berths |
| 8. Munitions bays | 16. Barracks |
| | 17. Common area |
| | 18. Cargo hold |

ASSAULT SHIP *DEYST-CLASS*

The *Deyst* was conceived as a strike-and-retrieve transport for a small force of heavily armed troops, intended to be the spearhead of an assault or a facilitator of commando missions. The hull is well armoured and performance in space or atmosphere is generally good, enabling the *Deyst* to bring its primary armament of twin fusion barbettes into action against most targets.

Hull form is a streamlined wedge, two decks high at the rear and tapering forwards. Drives and command spaces are located aft on the upper deck, with the staterooms, some common areas and utility spaces split between the port and starboard sections of the upper wedge. The fusion gun barbettes are mounted at the front of the dorsal surface. Two triple laser turrets are positioned aft and slightly outboard of these, with the other pair on the outer edges of the wedge to provide all-round firepower.

The lower deck is almost entirely given over to troop operations. A platoon of infantry can be easily accommodated in the barracks, with senior personnel assigned cabins on the deck above. Cargo, training and common spaces are specified in the standard design but many users customise their vessels by swapping functions around. The assault capsule system is the heart of the ship for some operators and wholly irrelevant to others, in which case the area is usually repurposed. If it is used, the system can put a dozen troopers on the ground from orbit, with a second wave landing in the ship.

Nominal crew is twelve including gunners, though typically medics and armament technicians are carried – especially by those rare units with access to battle dress. Some operators do away with the barracks and associated areas, adding a few staterooms if necessary and creating a large cargo space. This is useful for vessels that undertake planetary raiding or piracy, but does have some less nefarious applications.



ASSAULT SHIP *DEYST-CLASS*

TL12		TONS	COST (MCr)
Hull	600 tons, Streamlined	—	36
Armour	Crystaliron, Armour: 10	75	18
M-Drive	Thrust 4	24	48
Jump Drive	Jump 2	35	52.5
Power Plant	Fusion (TL12), Power 615	41	41
Fuel Tanks	J-2, 8 weeks of operation	128.2	—
Bridge	Holographic Controls	20	3.75
Computer	Computer/20	—	5
Sensors	Improved	3	4.3
Weapons	Triple Turrets (pulse lasers) x4	4	16
	Fusion Barbettes x2	10	8
Systems	Repair Drones	6	1.2
	Medical Bay X2	8	4
	Armouries x2	2	0.5
	Workshop	6	0.9
	Briefing Room	4	0.5
	Assault Capsules x 12	6	0.6
	Training Facilities (capacity 12)	24	4.8
Staterooms	Standard x16	64	8
	Barracks x40	80	2
	Emergency Low Berth x2	2	2
Common Areas		40	4
Software	Manoeuvre/0	—	—
	Jump Control/2	—	0.2
	Library	—	—
Cargo Space		17	—
TOTAL: MCr 261.25			

CREW

CAPTAIN, PILOT, ASTROGATOR,
ENGINEERS X3, GUNNERS X6

RUNNING COSTS

MAINTENANCE COST
Cr21770.83/month

PURCHASE COST
MCr261.25

POWER REQUIREMENT

240

MANOEUVRE
DRIVE

120

BASIC SHIP
SYSTEMS

120

JUMP
DRIVE

28

SYSTEMS

92

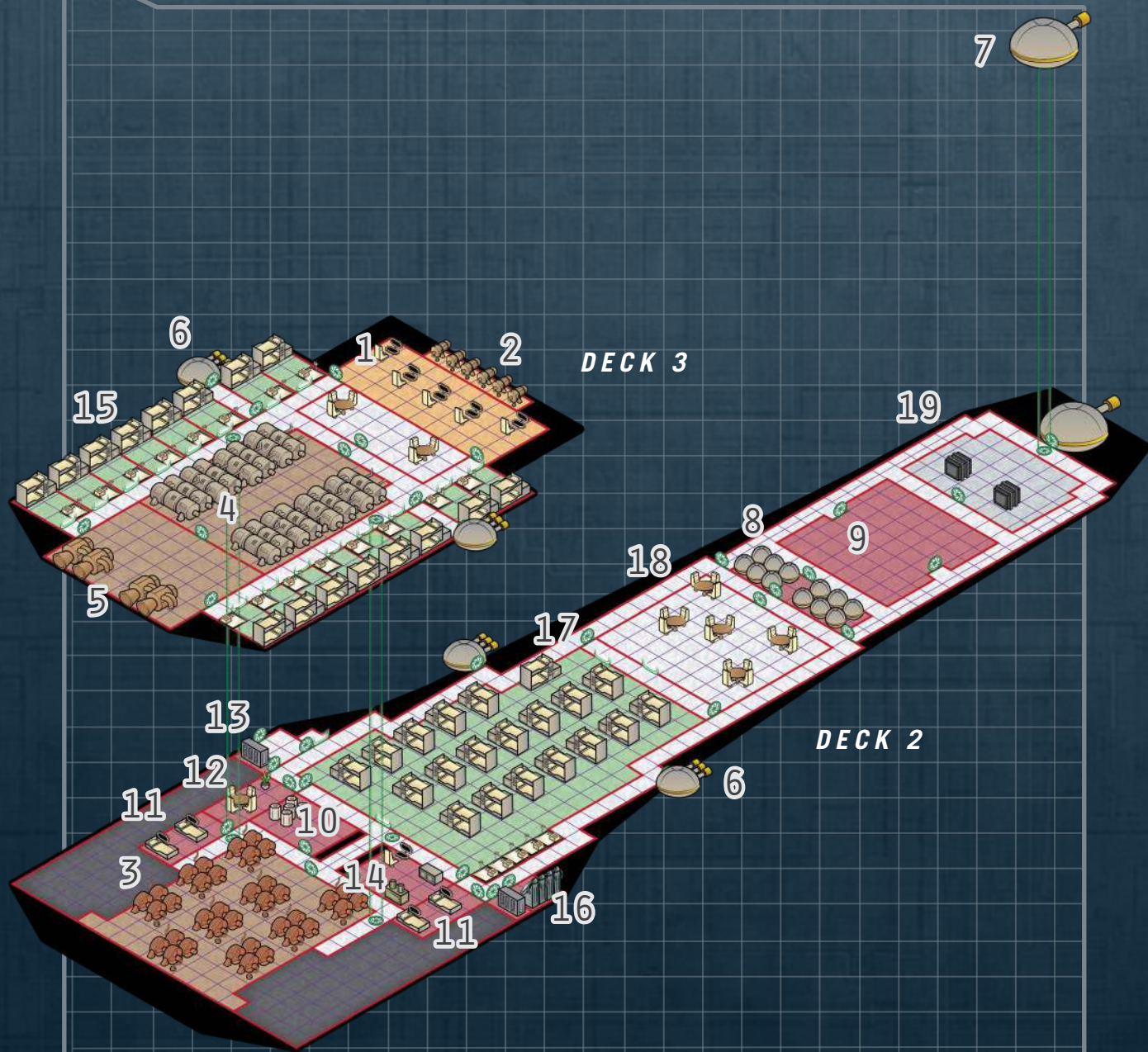
WEAPONS

4

SENSORS

240

HULL POINTS



**DECK 1
(FUEL ONLY)**

LEGEND

- | | |
|-------------------------------------|--------------------|
| 1. Bridge | 10. Repair drones |
| 2. Sensors | 11. Medical bay |
| 3. Power plant | 12. Briefing rooms |
| 4. M-drive | 13. Armouries |
| 5. J-drive | 14. Workshop |
| 6. Triple turrets
(pulse lasers) | 15. Staterooms |
| 7. Fusion barbettes | 16. Low berths |
| 8. Assault capsules | 17. Barracks |
| 9. Training facilities | 18. Common area |
| | 19. Cargo hold |

TRANSPORT *BORWEN-CLASS*

The *Borwen* was developed as a small and inexpensive troop transport for mercenary and government clients. It is not an assault ship, though inevitably there are users who will try to use it as one. Like many paramilitary ships, the *Borwen* has a lightly armoured hull and some weaponry fitted as standard for self-defence.

General hull form is a 'flared cylinder', formed from a primary hull with three compartmentalised sections below. The central secondary hull is much longer and larger than the other two, which flank it to create a broad rear section. The primary, or 'working', hull is dedicated to 'ship' operations, with the drives and power plant conventionally located aft. Crew accommodation is forward of this, with common areas and the bridge positioned right forward. 32 staterooms are provided, which is far more than a standard working crew would need even with all crewmembers being allocated a cabin of their own.

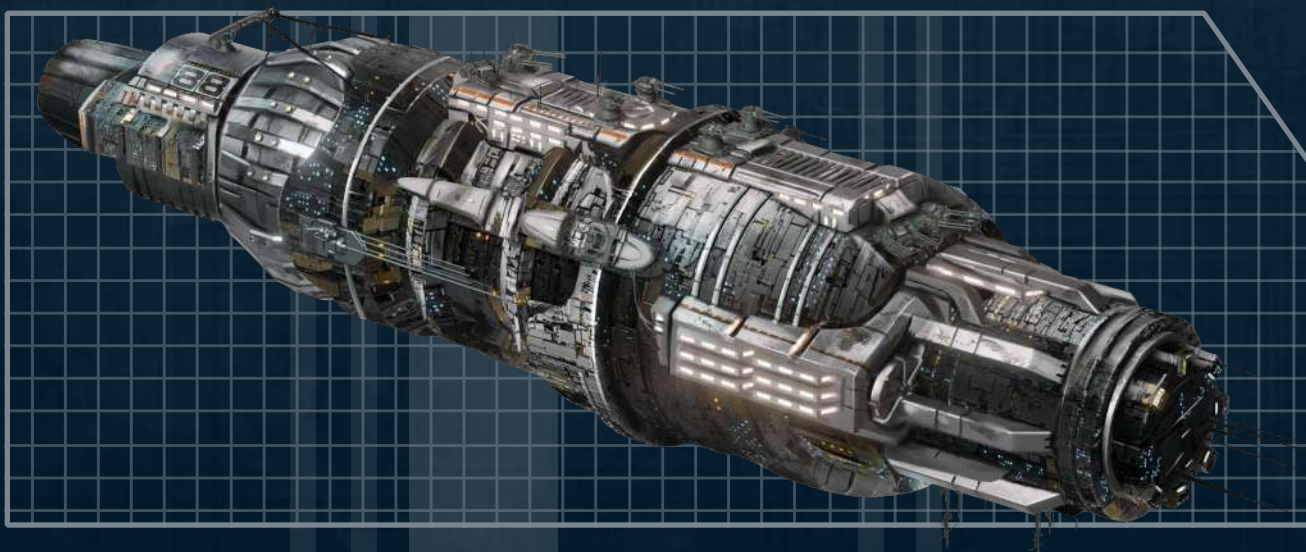
Nominal working crew is 20 including gunners and one medic, though when troops are aboard the usual medical complement is one medical officer and six assistants, all of whom are familiar with emergency low berth revival protocols. With 25 crew aboard it is possible to jam a platoon of infantry into the remaining staterooms, more or less, though normally cabins are reserved for officers and senior NCOs.

Weapons fit is above average for a transport ship, with ten dual turrets. Eight are grouped into two clusters on the dorsal surface of the main hull, each containing a twin pulse laser turret, two sandcaster turrets and

a missile/beam laser turret, with ammunition bays serving each. Most vessels carry a few missiles for combat work or even ground attack, with the rest of their capacity available to launch satellites or surveillance probes. The remaining dual pulse laser turrets are mounted singly to give a wider arc of fire.

The lower deck contains three almost identical 'platoon transport segments' arranged in parallel. The outer two each contain 60 low berths each plus a small ready area, cargo stowage and a medical bay. The central one has 40 low berths and a double-sized medical bay that serves as a trauma centre when the vessel is supporting groundside operations. Forward of this are training areas, a barracks capable of transporting a platoon-sized unit and an extensive armoury/workshop for the unit's weaponry.

A company of up to 200 infantry can be transported aboard a *Borwen*, with one platoon and command personnel travelling 'awake' and the remainder in low berths. A limited amount of supplies and support equipment can be carried, though a unit with a lot of vehicles may need a bigger ship. One of the key factors in deciding what equipment to purchase is whether it will fit aboard the unit's transport vessel. Common variants replace the three low berth bays with cargo space, creating a logistics ship, or with garages for combat vehicles. An armoured company will often be able to squeeze its personnel into the barracks and spare staterooms, raising carrying capacity to around 200 tons depending on the nature of modifications undertaken.



TRANSPORT *BORWEN-CLASS*

TL12		TONS	COST (MCR)
Hull	1,000 tons, Standard	—	60
Armour	Crystaliron, Armour: 4	50	12
M-Drive	Thrust 2	20	40
Jump Drive	Jump 2	55	82.5
Power Plant	Fusion (TL8), Power 765	51	51
Fuel Tanks	J-2, 8 weeks of operation	85	—
Bridge	Holographic Controls	2	2.5
Computer	Computer/20	—	5
Sensors	Military Grade	3	4.3
Weapons	Double Turrets (pulse lasers x2) x4	4	10
	Double Turrets (sandcasters x2) x4	4	5
	Double Turrets (beam laser, missile rack) x2	2	3.5
Ammunition	Munitions Bays x6	6	—
Systems	Repair Drones	10	2
	Medical Bay x5	20	10
	Briefing Rooms x4	16	2
	Armouries x8	8	2
	Workshop	6	0.9
	Training Facilities (capacity 40)	80	16
Staterooms	Standard x32	128	16
	Barracks x40	80	2
	Low Berths x160	80	8
Common Areas		26	4.8
Software	Manoeuvre/0	—	—
	Jump Control/2	—	0.2
	Library	—	—
Cargo Space		99.8	—
TOTAL: MCR 343.25			

CREW

CAPTAIN, PILOT,
ASTROGATOR, ENGINEERS X5,
MAINTENANCE, GUNNERS X10

RUNNING COSTS

MAINTENANCE COST
Cr28604.17/month

PURCHASE COST
MCR343.25

POWER REQUIREMENT

200

MANOEVRE
DRIVE

200

BASIC SHIP
SYSTEMS

200

JUMP
DRIVE

101

SYSTEMS

50

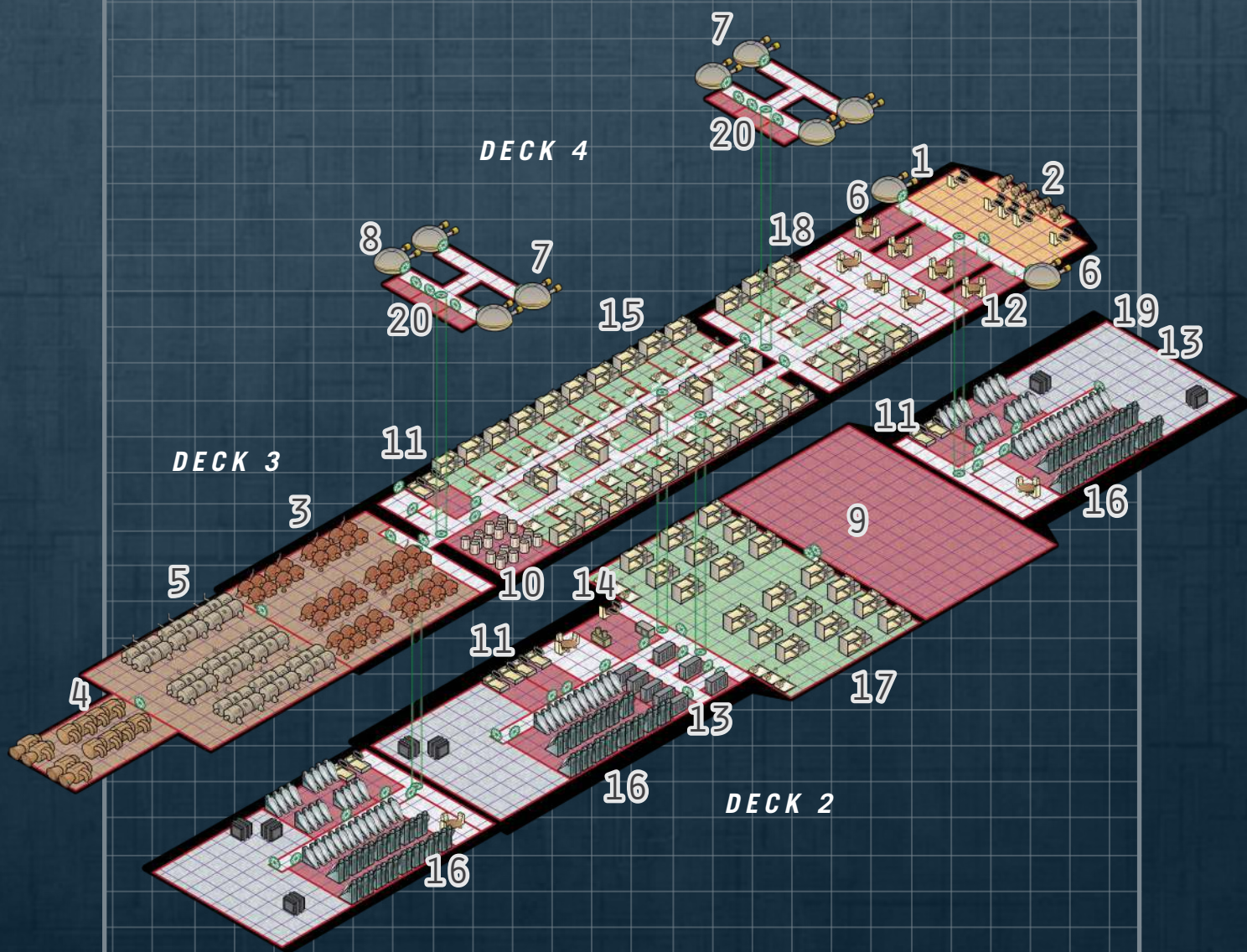
WEAPONS

2

SENSORS

400

HULL POINTS



**DECK 1
(FUEL ONLY)**

LEGEND

- | | |
|---|------------------------|
| 1. Bridge | 9. Training facilities |
| 2. Sensors | 10. Repair drones |
| 3. Power plant | 11. Medical bay |
| 4. M-drive | 12. Briefing rooms |
| 5. J-drive | 13. Armouries |
| 6. Double turrets
(pulse lasers) | 14. Workshop |
| 7. Double turrets
(sandcasters) | 15. Staterooms |
| 8. Double turrets
(beam laser,
missile racks) | 16. Low berths |
| | 17. Barracks |
| | 18. Common area |
| | 19. Cargo hold |
| | 20. Munitions bays |

ADVANCED WEAPON DESIGN WORKSHEET





Weapon: Generic 6 Revolver

Type:

Component

Cost

Weight

Other Factors

Receiver Type:

Ammunition Type:

Mechanism:

Modified Ammunition Capacity:

Receiver Totals:

Barrel:

Stock:

Accessories:

Totals

