

# 2300AD

BOOK 1  
CHARACTERS AND EQUIPMENT



# 2300AD

HUMANITY DISCOVERS THE STARS

## BOOK 1: CHARACTERS & EQUIPMENT

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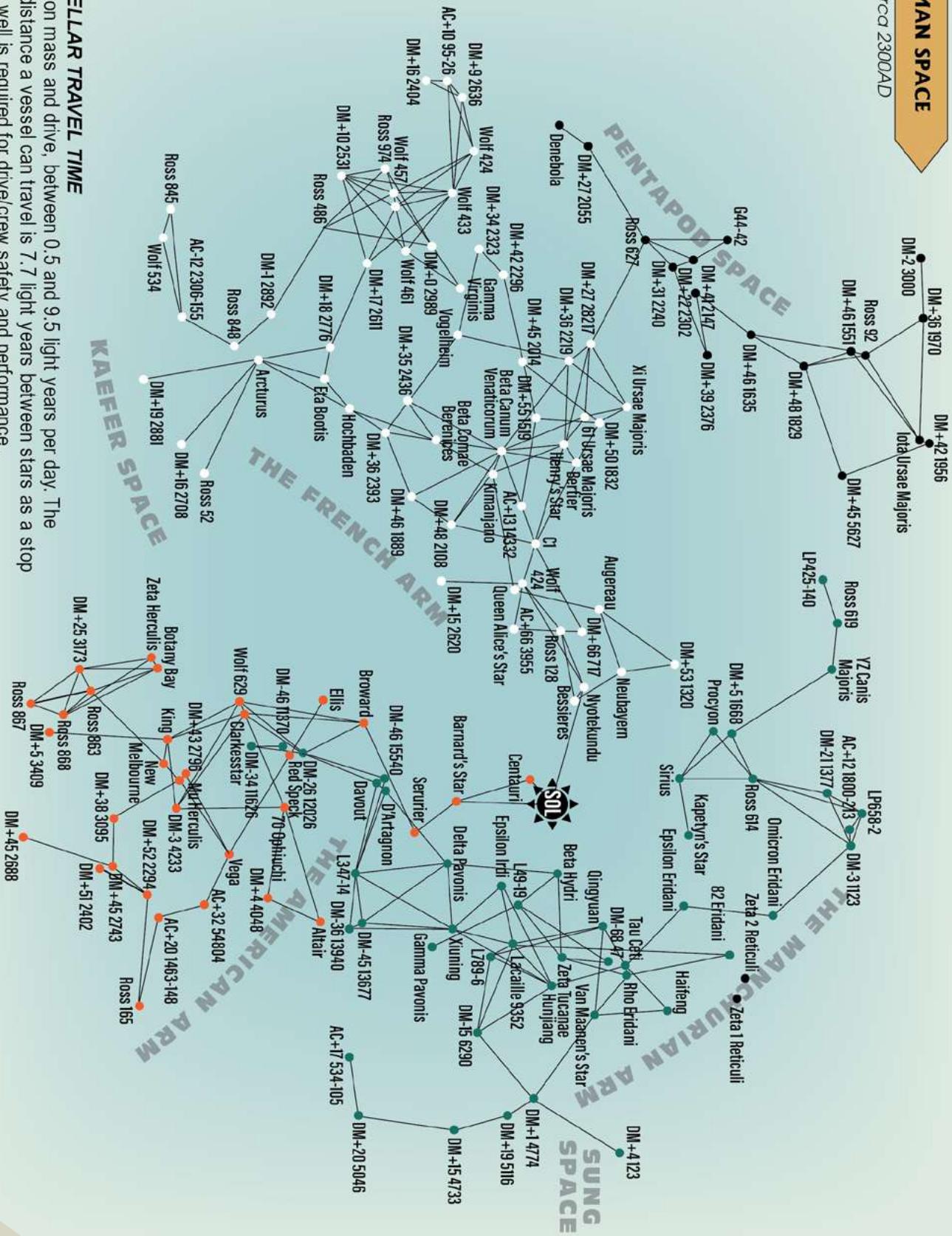
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HUMAN SPACE

*Circa 2300AD*



INTERSTELLAR TRAVEL TIME

Depending on mass and drive, between 0.5 and 9.5 light years per day. The maximum distance a vessel can travel is 7.7 light years between stars as a stop in a gravity well is required for drive/crew safety and performance.

Stutterwarp discharge requires approx. 40 hours.

# INTRODUCTION

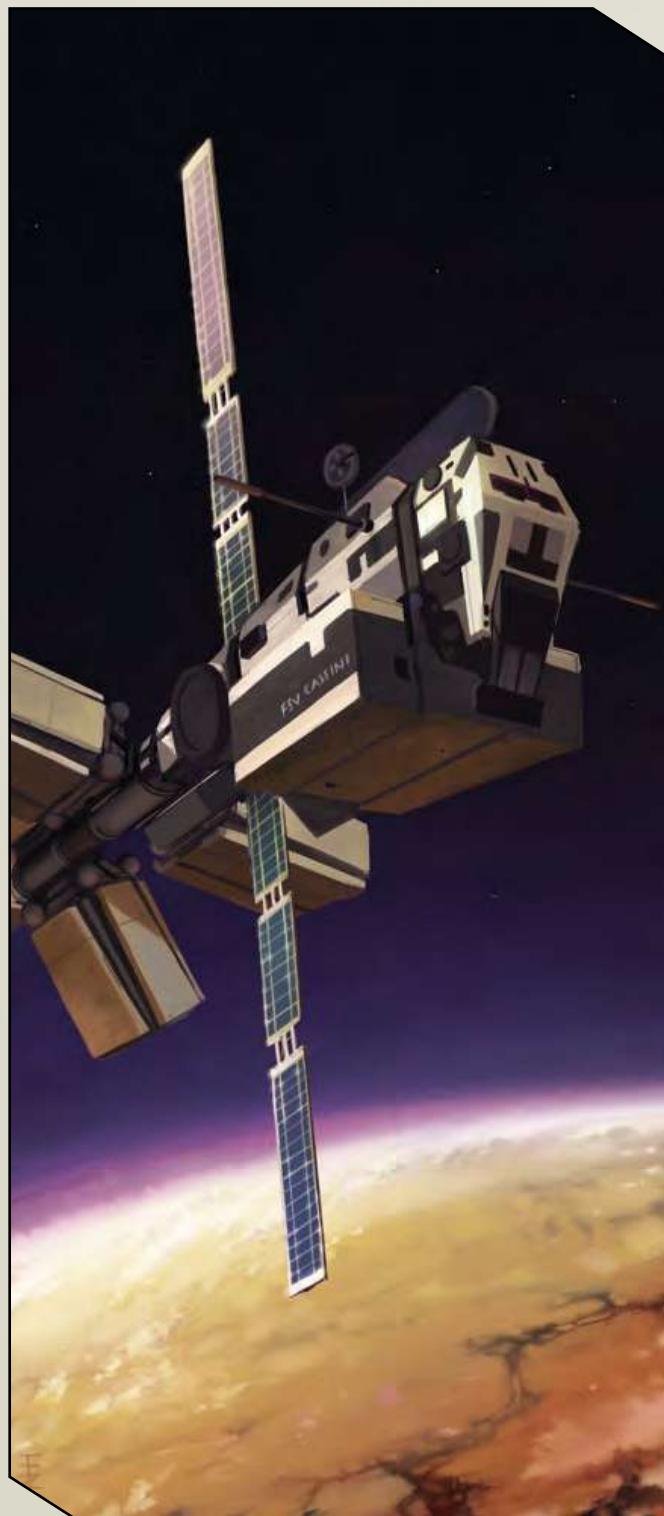
*2300AD* is a science fiction roleplaying game built on the gold-standard for science fiction games: *Traveller*. Using the latest edition from Mongoose Publishing, *2300AD* is a universe designed with a ‘harder’ approach to science and science fiction. This book requires the *Traveller Core Book*, which contains the base rules and guidelines. This book provides a new universe for *Traveller*, with new worlds, new technologies and a new approach.

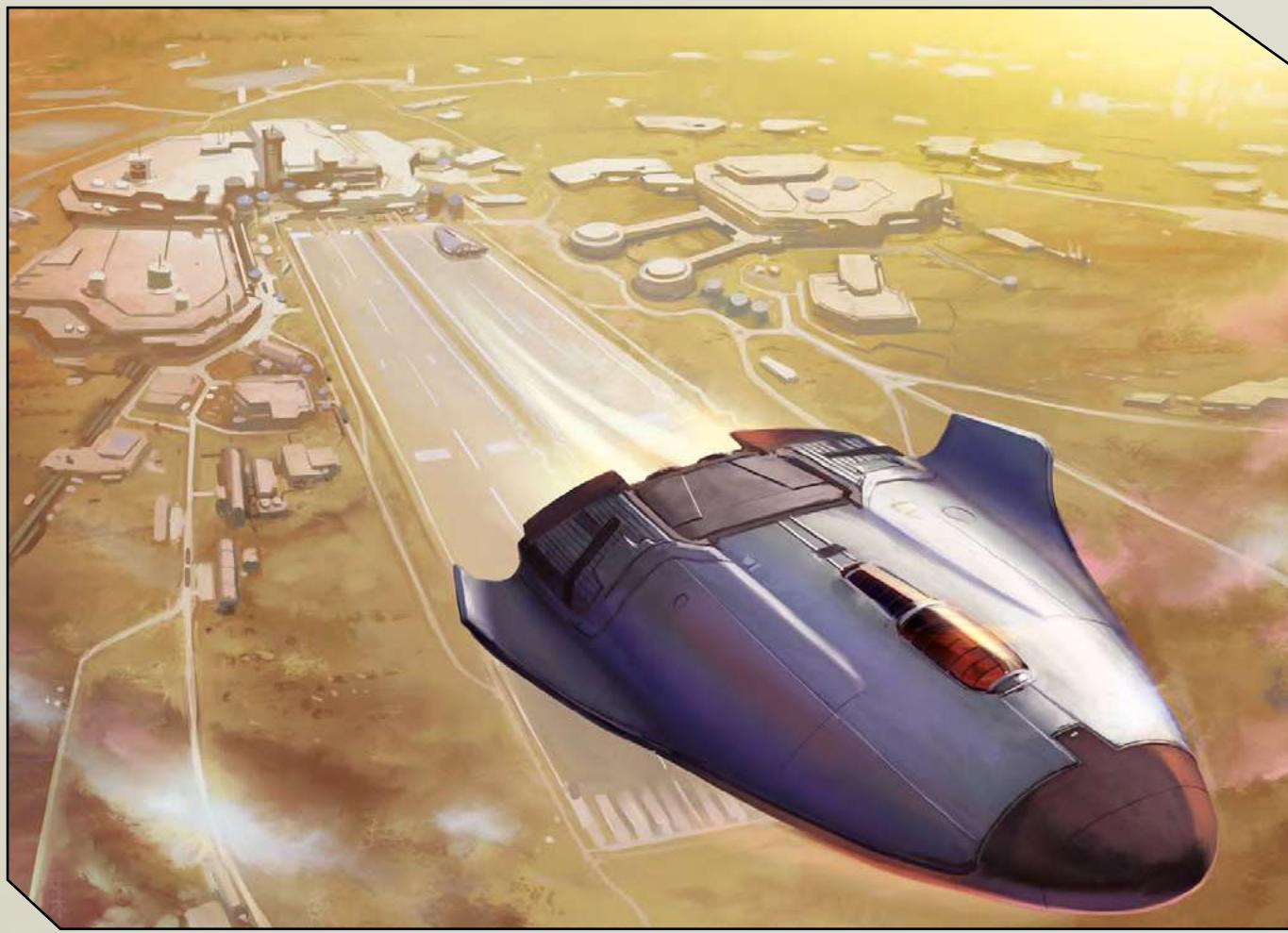
In the year 2300, humanity is reaching for the stars, exploring and settling distant worlds. Despite nearly destroying themselves during the decades of Twilight, despite all the wars since, humanity has survived and prospered. *2300AD* is the story of humanity reaching for the stars.

In *2300AD*, humanity has colonies on 32 Earth-like worlds, with outposts on many more. Space is divided into three Arms: French, American and Manchurian, each named for the dominant nation exploring it. The shape of these Arms is dictated by the limitations inherent in the stutterwarp effect, the engine that drives faster-than-light travel. The stutterwarp has a maximum range of 7.7 light years; beyond this range, drives can undergo a relaxation event, releasing a burst of heat and radiation that usually destroys the ship and kills the crew. At best, the drive is destroyed in interstellar space, far from rescue or hope.

Journeys from worlds at the centre of human space and worlds of the edge can take weeks, or even months, of travel. Situations on the Frontier must be solved by local authorities, using equipment and expertise at hand. Waiting for far-off colonial masters to decide and act has doomed more than one colony, so self-reliance and skill are premium survival tools for life on distant worlds.

At the centre of human space is the Core, which contains the worlds of the Sol and the Alpha/Beta Centauri systems. Tirane is a near-twin to Earth in climate, gravity and atmosphere. These two worlds together have nearly 90% of the human population, with 75% of the total residing on Earth itself. For most people living out on the Frontier, the worlds of the Core are as distant and strange as any alien homeworld.





To the people of the Core, however, the humans of the Frontier truly are alien, especially those who follow the Soft Path, adapted through genetic engineering to the harsh surroundings of their new homes. Even those on the Hard Path, while still biologically human, have attitudes and social structures that differentiate them from their relatives in the Core. These differences only serve to widen the gulf between Core and Frontier.

*2300AD* campaigns range from interstellar exploration and war, down to the gritty streets and mega-cities of the Core. This is a game about people and their rise to the stars. While a variety of aliens are a part of the *2300AD* universe, the focus of the game is on humans.

Much of the technology of *2300AD* is grounded in today's scientific understanding and the extension of that science into the future. This universe does not have artificial gravity, aside from spin habitats. There is no anti-gravity technology that allows cars to fly but there are ducted-fan aerodynes. The exception to this is the stutterwarp drive, which has opened the

way to the stars. The difficulty, however, lies in the first step; getting out of a planet's gravity well is still the most difficult part of space travel, so difficult that many choose to leave planets behind them, staying in space-based environments and societies.

## SPACE TRAVEL

Once in orbit, Travellers are literally halfway to anywhere. Interstellar travel is far easier than that first big step into space. Stutterwarp drives are used to cross the vast gulf between stars, as it allows faster-than-light travel at speeds up to 5 light years or more per day. These same stutterwarp drives allow in-system travel as well, losing their effectiveness only in the shallow gravity wells of planets and stars. Travel to and from orbit still utilises rockets and spaceplanes, although advanced technologies like catapults, laser lift systems and orbital elevators are also in use. Advances in material technology allow for lighter, yet stronger, hulls, making single-stage-to-orbit (SSTO) vessels both practical and relatively common.

## NATIONS AND POLITICS

In *2300AD*, national interests continue to dominate human politics, although the influence of transnational corporations (TransNats) and the Foundations are pronounced. Many nations of today are still recognisable in this future world, although some borders have changed and cities are not always where they once were. France is the leading nation on Earth, with Manchuria, formerly northern China, being almost its equal. Other prominent nations include America, Britain, Azania (formerly South Africa), Germany, Canada and Australia. Foundations are self-funded non-government organisations that pursue their own agendas in support of science, colonisation, humanitarian, or environmental, causes. The TransNats pursue more mundane goals of profit and power, although they take a far longer look than the corporations of pre-Twilight Earth.

## THE FRONTIER

Humanity has 57 colonies on 32 worlds, including the Core World of Tirane, scattered outposts, enclaves, mining camps and science stations. The off-world population is a significant fraction of the Earth-bound population and, for some nations like France and Australia, the off-world population is greater due to the Tiranian colonies. Worlds are settled for many reasons but one of the most important is national pride – only major nations have colonies. Colonies are also used to provide raw materials for home industries and markets for the products of those industries, serving as a safety valve for the massive population of heavily-urbanised Earth. For those who can no longer stand the surveillance and control applied to such large populations, the Frontier offers a haven, free from ever-present cameras and constant monitoring. For Earth-bound nations, the Frontier provides not just resources but a pool of capable individuals useful to the state, although not necessarily suited to being part of it.

## ALIENS

Humanity has encountered six other intelligent species, two of them star-faring, a third with interplanetary capability and a fourth that used to have starships until they bombed themselves back to a Stone Age. On top of these clearly-intelligent species, there are many ‘borderline’ cases, including some on Earth where creatures may not have human-level intelligence but are clearly more than animals. These proto-intelligences enjoy a protected status and on Earth alone there are at least 15 such species under protection.

The most important question being asked about intelligence is whether this concentration of intelligent species is unusual or common. Despite 150 years of scanning the stars, there have been no signals from other civilisations and even vast deep space arrays can find only tantalising hints of other intelligent life. If there is intelligent life out there, it is either rare or in hiding.

## 2300AD AND THE THIRD IMPERIUM

Although *2300AD* makes use of the *Traveller Core Rulebook*, it is not part of the *Third Imperium* universe. *2300AD* stands on its own.

The levels and types of technology are different in *2300AD*, especially the method of faster-than-light travel, the stutterwarp, along with conventional space travel, computers and vehicles. There are similarities, however. Both are about people in the far-future where star travel is ubiquitous, both focus on people rather than equipment and both strive to maintain a realistic worldview, considering their histories and technologies.

*2300AD* has an emphasis on ‘realistic’ technology; there are no anti-gravity vehicles, nuclear dampers or meson guns. The starships also tend to be a lot smaller. Instead of the 50,000 ton cruisers so common in the *Third Imperium*, *2300AD* has 900 ton cruisers, with the largest ships being around 20,000 tons. Ships are also much more cramped, with a feeling more like submarines than ocean liners.

Most technology in *2300AD* varies between TL10 and TL12. TL10 is often referred to as Old Commercial (OC) and represents the typical day-to-day technology available on most Frontier worlds. TL11, or New Commercial (NC), reflects technology available to large corporations and people living on the Core Worlds. It also represents military technology common on the Frontier and in less-developed nations. It commands a premium price on most Frontier worlds.

TL12 is New Military (NM), the latest technology available to the most advanced militaries, nations and Trans-National corporations. Some prototypes at this level are available on the civilian market but command a high premium wherever they may be sold.

Dig Site 22I (2297)  
 152° 11' 58" West  
 32° 44' 28" South  
 Alamo Colony  
 Heidelshiemat  
 (Rho Eridani III)



## Expanding 2300AD

There are three companion books to this volume, the *Aerospace Engineer's Handbook*, *Ships of the Frontier* and *Tools for Frontier Living*. The first two showcase the starship design system used to create the ships in this book, along with additional ship designs and rules expansions. *Tools for Frontier Living* includes a wide selection of tools, weapons, vehicles and equipment for use on the Frontier. While not required, these three volumes are useful expansions to this book.

Other books in the *Traveller* line can be useful, especially the *Vehicle Handbook*, although some attention must be paid to differences in technology. *Book 3: Vehicles and spacecraft* presents alternatives and additions to the design rules in the *Vehicle Handbook*, tailored to 2300AD.

## THE NEAR STAR LIST AND STAR MAP

One of the more interesting parts of the original 1986 version of 2300AD was the Near Star List (NSL), a comprehensive list of stars within a 50-light year radius of Earth based on the 1969 Gliese stellar survey – at the time the most accurate star list ever produced for a game. While this star catalogue is now out of date, it is retained to maintain the structure and limitations of the various Arms of exploration from the original universe.

# TRAVELLER CREATION

In the *Traveller Core Rulebook*, the Traveller's homeworld provides background skills to start a Traveller in their life. In *2300AD* the Traveller's homeworld also determines modifications, augmentations and several other features.

The following integrates the new *2300AD* steps of Traveller creation with the rules from the *Traveller Core Rulebook*.

## SUMMARY

- Generate Characteristics as on page 8 of the *Traveller Core Rulebook*
- Choose Nationality
- Choose between Frontier and Spacer Traveller
- Choose Homeworld if a Frontier Traveller
- Note Homeworld Survival DM and adjust characteristics according to Gravity Type
- Note Leaving Home modifier
- Choose Background skills
- Optionally, choose Pre-Career Education with appropriate Homeworld modifier
- Enter Career

Traveller creation then proceeds as normal, except that at the end of each Term the Traveller must make a Leaving Home check to see if they leave their homeworld. Once they pass this check, the homeworld's Survival modifier no longer applies, and the Leaving Home check no longer needs to be made

## New Careers

*2300AD* modifies the Drifter career, eliminating the Barbarian and adding the Freelancer. The *2300AD* Drifter can be found on page 12.

## Skill Changes

Some skills from the *Traveller Core Rulebook*, such as Flyer (grav), are altered or removed. These changes are detailed on page 11.

## Mustering Out

There are some changes to Mustering Out, in particular the range and type of ships available, as shown on page 11.

## Skill Packages

There are new skill packages to suit iconic *2300AD* campaign styles, listed on page 14.

## NATIONALITY

The first step in Traveller creation, after characteristics have been rolled, is to choose the Traveller's nationality from the Colonies table in *The Worlds of 2300AD*, page 23. Nationality also determines the Traveller's native language(s).

Background skills are developed by choosing a nationality and then picking a path and homeworld from the list of available core worlds, colonies and outposts available to that nationality. The choice of homeworld will also determine homeworld gravity and impact Survival rolls.

## PHILOSOPHY

Philosophy represents the world-view the Traveller embraces in respect to meeting the challenges of life on the Frontier. In the Core, the vast majority of people are on the Hard Path and the Moratorium was a way of cementing this. On the Frontier, the approach is more varied. While some worlds might tend more towards one path or another, both are available on most colony worlds. Exceptions to this are noted in colony world descriptions.

On the Frontier, there are two major lines of thinking in regards to colonial operations. The Hard Path leans towards the use of technological solutions to the problems of colonisation. These include machinery, filter masks, greenhouses and carniculture. This path uses tools to help humans cope with alien worlds but leaves the 'core' human largely alone. This keeps colonies dependent on their mother countries for longer periods of time but encourages local manufacturing.

The Soft Path emphasises adapting humans to their local environment, making them far less-dependent. In most Hard Path colonies, it would be very difficult for someone to 'go bush' and live off the land. A genetically-modified colonist is able to, at least on more Earth-like colonies. Since most symbionts and DNA modifications are passed from mother to child,

Soft Path colonies can gain independence in a shorter period of time, unlike Hard Path colonies and the immense investments they require.

In Traveller creation, Hard Path Travellers tend to start with more equipment and skills, while Soft Path Travellers may start with DNA modifications and their associated Traits, symbionts and, perhaps, a Neo protector.

## HOMeworld

Once nationality and path have been chosen, Travellers must choose their homeworld. Each homeworld is defined as either Frontier or Spacer. Core World Travellers will be covered in a future supplement. The vast majority of Travellers will hail from one of the 32 worlds on the Frontier or a space-based habitation, from outposts and stations to belter camps and Libertine family ships.

Some Frontier world colonists have DNA modifications, or ‘DNAMs’, which are largely banned in the Core. In a similar vein, most Spacers will have the 0G DNAM to permit them to move more freely between the spin gravity of larger stations and the zero gravity of distant outposts. These modifications are further detailed in the *Chapter Augmentations*.

## FRONTIER TRAVELLERS

The 32 worlds and 50+ colonies of the Frontier provide a wide range of worlds. From the beautiful but useless flora of Beta Canum to the harsh gravity and poisonous atmosphere of King, colony worlds are all hostile to some degree. Travellers from Frontier Worlds need to combine a mix of survival skills with technical knowledge. Using modern medical and environmental technology, they combine adapting the worlds with adapting themselves. Most colonists benefit, to some degree or another, from genetic engineering; some may just have some tinkering to allow them to co-exist better with a world and its irritants and allergens, while others are truly transformative, giving colonists new abilities.

Through this engineering, colonists can be adapted to the frigid wastes of Hermes or Dukou, the arid barrens of Dunkelheim or Ellis and the thin atmosphere of worlds like Nibelungen or Crater. Genetic engineering even allows humans to live on the hell-world of King, with its crushing gravity and poison-tainted atmosphere.

### Worlds

The nature of a world determines some of the physical characteristics of those who call the world home.

**Gravity Type:** Travellers from the Frontier can hail from any world with practically any gravity type, from Light gravity worlds to the Extreme gravity of King. Zero-gravity environments are the domain of Spacers who are covered on page 9. Information on world gravity type is available in each world description and the table in *The Worlds of 2300AD* page 23. Gravity type is used when travelling to different worlds, to find the effect of the differences between homeworld gravity and local gravity on each Traveller. In general, Travellers from low-gravity worlds will be taller and more slender than average, while those from high-gravity worlds will tend to be shorter and stockier.

The gravity type of a Traveller’s homeworld will also modify their characteristics, as shown on the Homeworld Gravity table.

### Homeworld Gravity

| Gravity Type | Gravity Range | STR | DEX | END |
|--------------|---------------|-----|-----|-----|
| Zero-gravity | 0.0–0.09      | -2  | +2  | -2  |
| Light        | 0.1–0.20      | -1  | +1  | -1  |
| Low          | 0.21–0.80     | 0   | 0   | 0   |
| Normal       | 0.81–1.20     | 0   | 0   | 0   |
| High         | 1.21–2.0      | 0   | 0   | 0   |
| Heavy        | 2.0–2.9       | +1  | -1  | +1  |
| Extreme      | 3.0+          | +2  | -2  | +2  |

**Survival:** Hostile worlds negatively-impact survival rates. Check the Survival DM on the Colonies table in Book2 page 23, and use it for all Survival rolls until the Traveller leaves their homeworld. This roll may also be modified by DNA Modifications and Symbionts. As well as having a Survival DM for the world, some colonies are particularly primitive or advanced and have further modifiers noted in their description. For example, the Incan colony on Heidelsheimat inflicts DM-1 to Survival rolls due to its primitive nature and lack of support, while the Texan and Bavarian colonies do not have any such modifier. All tailored DNAMs provide DM+1 to Survival rolls.

**Background Skills:** Colonists on Frontier worlds choose background skills from the following list. Travellers from the Frontier receive a number of skills equal to  $3 + \text{EDU DM}$ .

|             |              |             |
|-------------|--------------|-------------|
| Admin 0     | Drive 0      | Seafarer 0  |
| Animals 0   | Gun Combat 0 | Steward 0   |
| Art 0       | Mechanics 0  | Survival 0  |
| Athletics 0 | Medic 0      | Vacc Suit 0 |
| Carouse 0   |              |             |

For Manchurian, Incan and Argentinean colonies, Travellers must be SOC 9+ to choose Gun Combat.

**DNAMs:** Travellers from the Frontier may have DNA Modifications and Symbionts to cope with Planetary Adaptation Syndrome but often for other factors as well. These are noted in their colony's description. Travellers from outposts and other low- to -zero-gravity environments can also select the Zero-Gee DNAM.

**Augmentation:** Travellers from the Frontier may have prosthetics, including limbs and eyes, due to accident or animal attacks. Each time a Survival roll is equal to the minimum required, the Traveller may elect to gain a prosthetic – either a limb or eyes (one or both). The prosthetic will be a cosmetic replacement and have no special features unless later upgraded.

**Pre-Career Education:** Travellers can attempt to receive pre-career education, as noted on page 14 of the *Traveller Core Rulebook*. They can choose between receiving this education on their homeworld or going off-world, perhaps for better opportunities.

The availability of homeworld pre-career education is strongly-influenced by a colony's Tech Level. The Homeworld Pre-Career Admissions table provides a DM for pre-career education entry based on Tech Level.

The ability to travel off-world to receive an education is likewise strongly-influenced by the home nation's Tier, as shown on the Off-World Pre-Career Admissions table. However, if a Traveller successfully goes off-world for their education, there is a heavy cost to bear. The Traveller will suffer DM-1 to Benefit rolls when Mustering Out.

### Homeworld Pre-Career Admissions

| Tech Level | Entry DM |
|------------|----------|
| 7 or less  | -6       |
| 8–9        | -4       |
| 10–11      | -2       |
| 12         | 0        |

### Off-World Pre-Career Admissions

| Tier | Entry DM |
|------|----------|
| 1    | +2       |
| 2    | 0        |
| 3    | -2       |
| 4    | -4       |
| 5    | -6       |
| 6    | -8       |

**Survival:** Colonies sometimes have modifiers to Survival rolls, based on its development and support level. These

will be noted in the colony description and apply until the Traveller leaves the homeworld.

**Careers:** All Careers are available to Travellers from the Frontier. The only exceptions are for Travellers from Tier 5 or Tier 6 colonies, who cannot take a space-based career (Scouts, Merchants, Navy) in their first term.

**Leaving Home:** Frontier World Travellers have no modifier to Leaving Home checks.

## SPACER TRAVELLERS

The term Spacer describes those who live in the void between worlds, whether on ships, in stations, or giant habitats. They have many characteristics in common and even those who live in massive habitats still have skills and training in zero-gravity and vacuum environments. Gun combat skills, however, are almost unknown in the civilian population.

**Gravity Type:** Spacers are assumed to live in Low gravity environments, as defined by the Homeworld Gravity table on page 8.

**Background Skills:** Spacers choose from their list of background skills, below. Spacer Travellers receive a number of skills equal to  $4 + \text{EDU DM}$ , one of which must be Vacc Suit.

|             |               |             |
|-------------|---------------|-------------|
| Admin 0     | Electronics 0 | Pilot 0     |
| Art 0       | Engineer 0    | Steward 0   |
| Athletics 0 | Mechanics 0   | Survival 0  |
| Carouse 0   | Medic 0       | Vacc Suit 0 |

**DNAMS:** Almost all Spacers will have the 0-G DNAM. Those who spend their lives primarily in Light or Zero Gravity may have the 'More Hands' variant, which alters the structure of their feet so that they are more like hands and able to grasp and manipulate objects.

**Augmentation:** Cybernetic limb augmentation is rare in most spacer societies, although there are exceptions, like the Autumn Collective on the French Arm. Neural jacks, augmented vision with flare compensation and augmented reality implants, however, are very common. Fully 80% of all Spacers have these augmentations and a Traveller may gain them during their career. If chosen, half the cost of these augmentations is subtracted from funds received while Mustering Out.

In addition, each time a Survival roll is equal to the minimum required, the Traveller may elect to gain a prosthetic – either a limb or eyes (one or both). The prosthetic will be a cosmetic replacement and have no special features unless later upgraded.

**Pre-Career Education:** Higher education is rare in Spacer societies, where most learning is done on the job. Spacer Travellers suffer DM-2 to enter pre-career education.

**Survival:** Space is a dangerous place and all Spacers suffer DM-1 to Survival rolls until they leave home.

**Careers:** All Careers except Army are available to Spacers for their first term. Army is only available from the second term onwards and they suffer DM-1 for entry.

**Leaving Home:** Spacers are natural nomads and so have DM+2 on Leaving Home checks.

## LANGUAGES

Travellers will be fully-fluent (skill level 2) in their primary language. If their nation or colony has a secondary language, they will also be proficient in that language at skill level 1. Libertines and Belters will know Zhargon (skill level 1) and Frontier colonists will have a passing knowledge (skill level 0) of the primary language of their arm of space (French in the French Arm, English in the American Arm and Mandarin Chinese in the Manchurian Arm).

Skill checks are not normally required when conversing in any language for which the Traveller has skill level 0 or higher. However, technical discussions, or relaying orders or information in stressful situations, may require a Language check, at the referee's discretion.

### Zhargon

Zhargon (fr. Russian for 'slang') is a sort of 'common' language that originated with Belters and spread to the Libertines. Staff at stations and outposts on the Frontier who deal regularly with either group will pick up elements of this language, usually the profanities and very common words. It is decidedly less common in the Core. This new language pieces together elements of English, Mandarin, French, Russian and Rom. A limited range of exaggerated movements, a sort of broad sign language, is also considered to be part of Zhargon. This sign language is often used during EVA and also used for emphasis in face-to-face conversations. Zhargon is a free background skill to all Travellers with a Spacer background.

## LEAVING HOME

Most Travellers will leave their homeworld at some point in their Careers. They are, after all, Travellers. The Homeworld survival modifier applies until the character leaves their home.

For each term of a career, roll 2D. On a roll of 8+ they leave their homeworld. For Navy, Marines and Merchants, there is a DM of +1 per term served, while Scouts have a DM of +2 per term served. They will not return during character generation.

*Example: Peter's Scout character rolled a 5 on 2D during his first term as a Scout and even with the +2 DM per term, he was stuck working on his homeworld, likely orbital surveys or similar work. On his second term, he only rolled a 4 on 2D but with the +4 DM (+2 per term), the roll came to 8, indicating that his scout career had taken him away from his home system.*

## LIFE SPAN AND AGING

The average human lifespan in 2300AD is considerably longer than the average in the early 21st century. Even on colony worlds, should the colonists survive environmental dangers, they tend to live almost as long as a Core world citizen. Living until the age of 120 is relatively common, with people staying relatively youthful until later ages as well. Most people postpone retirement until they are in their 80s, in part due to the enormous demand for skilled workers on Frontier worlds.

To reflect this longer life-span, ageing rolls start at age 50 rather than age 34.

## INJURIES AND AUGMENTATION

Travellers who suffer an injury during creation may elect to get a prosthetic replacement, typically an eye or limb, although others may be appropriate depending on the circumstances. This will consume a Benefit roll but allow them to continue in the career if they would otherwise be ejected and ignore all deductions to their characteristics from the Injury table.

In addition, Travellers in Naval or Marine careers with a Tier 3 or higher nation can have a neural jack installed (see page 22). This will consume a Benefit roll but also grant DM+1 to advancement rolls.

# CAREERS

Once a Traveller's homeworld and background skills are determined, they move into their careers. Return to the *Traveller Core Rulebook* and follow the Creating a Traveller flowchart on page 10 as normal until the Traveller finishes their careers and musters out. After that point, consult the Mustering Out benefits on page 11.

## MUSTERING OUT BENEFITS

A Traveller on the Hard Path adds DM+1 to all Benefit rolls, while a Traveller on the Soft Path has DM-1.

All Travellers begin play with a hand comp and Link phone.

**Ship Shares:** Private ownership of a starship in *2300AD* is uncommon but not unheard of. Ships Shares in *2300AD* work the same as in Traveller.

A Ship Share from mustering-out benefits is worth Lv500000 towards the purchase of a ship but cannot be redeemed for cash. It is likely that any vessel will be jointly-owned between the Travellers and another interested agency, often a government, corporation or foundation. This arrangement can be used to provide adventure hooks, and possibly assistance, from time-to-time.

## Ghost Diamonds

In the late 2280s, corporate researchers at Drake-Toshimazu Corp developed a technique that combined the technology of making diamonds from the ashes of loved ones with modern microcomps. With Ghost Diamonds, the ashes were transformed into diamond film that was then used to construct a high-density memory array about the size of a 0.5 ct diamond. This array was then programmed with a simulation of the deceased, based on their 'footprint' in the global network and their own stored files. The resultant personality was quite realistic and when combined with a powerful processor and the appropriate input/output device, was capable of full audio and video interaction. The best ghost diamonds were able to pass a Turing test, although that test is no longer considered definitive proof of artificial intelligence.

The following are the *2300AD* equivalents of ships from *Traveller*:

| Ship Type       | 2300AD Equivalent          |
|-----------------|----------------------------|
| Ship's Boat     | SLV-50 Spaceplane or DC-30 |
| Scout           | Trilon ISV-2               |
| Free Trader     | Thorez Courier             |
| Laboratory Ship | Trilon Systems SSV-21      |
| Yacht           | Martinique Yacht           |

**Weapon:** Unless a Traveller musters out of a military career, they are limited to rifles and handguns only. If they have been belters or free traders, they have the option of receiving a laser weapon.

**TAS Membership:** There is no equivalent to the TAS membership in *2300AD*. Count it as another Ship Share.

## SKILLS

The following skills are changed or removed in *2300AD*:

### Astrogation

Rather than being used to plot accurate jumps, this skill is used to plot stutterwarp routes and gravity captures on entering a system.

### Engineer (j-drive)

Replace with Engineer (stutterwarp).

### Engineer (stutterwarp)

This skill allows the operating and fine-tuning of a ship's stutterwarp drive.

### Flyer (grav)

Replace with Flyer (vectored thrust). *2300AD* does not have gravitic technologies or anti-grav vehicles.

### Flyer (vectored thrust)

Use to pilot aerodynes, flying bricks kept aloft solely by the power of their engines. Aerodynes tend to be very manoeuvrable and flying them can be tricky.

### Languages

A Traveller can only choose human languages unless they have spent 2 or more terms as a Scout.

### Science

Remove psionicology as a speciality.

# THE DRIFTER

Drifters are wanderers and Travellers, moving across colony worlds and the built-up cities of the Core. They live from job-to-job, relying on their wits and skills. Many are products of the extreme labour crisis of the Core, with 40%+ unemployment in most developed nations.

**Qualification:** Automatic

## Assignments

Choose one of the following:

**Freelancer:** You are a professional who works contract-to-contract, skilled in technical work but unable or unwilling to obtain steady employment.

**Wanderer:** You are a consummate nomad, living hand-to-mouth in slums and spaceports across human space.

**Scavenger:** You work as a belter (asteroid miner) or on a salvage crew.

## Career Progress

|            | Survival | Advancement |
|------------|----------|-------------|
| Freelancer | EDU 7+   | INT 7+      |
| Wanderer   | END 7+   | INT 7+      |
| Scavenger  | DEX 7+   | END 7+      |

## Mustering Out Benefits

| 1D | Cash   | Benefits        |
|----|--------|-----------------|
| 1  | None   | Contact         |
| 2  | None   | Weapon          |
| 3  | Lv1000 | Ally            |
| 4  | Lv2000 | Weapon          |
| 5  | Lv3000 | EDU +1          |
| 6  | Lv4000 | Ship Share      |
| 7  | Lv8000 | Two Ship Shares |

| 1D | Personal Development | Service Skills  |
|----|----------------------|-----------------|
| 1  | STR +1               | Athletics       |
| 2  | END +1               | Melee (unarmed) |
| 3  | DEX +1               | Recon           |
| 4  | Language             | Streetwise      |
| 5  | Profession           | Stealth         |
| 6  | Jack-of-all-Trades   | Survival        |

| 1D | Freelancer         | Wanderer   | Scavenger           |
|----|--------------------|------------|---------------------|
| 1  | Profession         | Drive      | Pilot (small craft) |
| 2  | Electronics        | Deception  | Mechanic            |
| 3  | Streetwise         | Recon      | Astrogation         |
| 4  | Admin              | Stealth    | Vacc Suit           |
| 5  | Deception          | Streetwise | Profession          |
| 6  | Jack-of-all-Trades | Survival   | Gun Combat          |

## Ranks and Bonuses

| Rank | Freelancer | Skill or Bonus | Wanderer | Skill or Bonus | Scavenger | Skill or Bonus                      |
|------|------------|----------------|----------|----------------|-----------|-------------------------------------|
| 0    | —          | —              | —        | —              | —         | —                                   |
| 1    | —          | Profession 1   | —        | Streetwise 1   | —         | Vacc Suit 1                         |
| 2    | —          | Carouse 1      | —        | —              | —         | —                                   |
| 3    | —          | —              | —        | Deception 1    | —         | Profession (belter) 1 or Mechanic 1 |
| 4    | —          | —              | —        | —              | —         | —                                   |
| 5    | —          | Admin 1        | —        | —              | —         | —                                   |
| 6    | —          | —              | —        | —              | —         | —                                   |



## MISHAPS TABLE

## EVENTS TABLE

## TRAVELLER CREATION

| 1D Mishap |  |
|-----------|--|
| 1         | Severely injured (this is the same as a result of 2 on the Injury Table). Alternatively, roll twice on the Injury Table and take the lower result.   |
| 2         | Injured. Roll on the Injury Table.   |
| 3         | You run afoul of a criminal gang, corrupt bureaucrat or other foe. Gain an Enemy.  |
| 4         | You suffer from a life-threatening illness. Reduce your END by -1.   |
| 5         | Betrayed by a friend. One of your Contacts or Allies betrays you, ending your career. That Contact or Ally becomes a Rival or Enemy. If you have no Contacts or Allies, then you are betrayed by someone you never saw coming and still gain a Rival or Enemy. In addition, roll 2D. If you roll 2, you must take the Prisoner career in your next term. |
| 6         | You do not know what happened to you. There is a gap in your memory.   |

| 1D Mishap |  |
|-----------|--|
| 1         | Severely injured (this is the same as a result of 2 on the Injury Table). Alternatively, roll twice on the Injury Table and take the lower result.   |
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| 6         | You do not know what happened to you. There is a gap in your memory.   |

| 2D Event |  |
|----------|--|
| 2        | Disaster! Roll on the Mishap Table but you are not ejected from this career.   |
| 3        | A patron offers you a chance at a job. If you accept, gain DM+4 to your next Qualification roll but you owe that patron a favour.  |
| 4        | You pick up a few useful skills here and there. Gain one level of Jack-of-all-Trades, Survival, Streetwise or Melee.   |
| 5        | You manage to scavenge something of use. Gain DM+1 to any one Benefit roll.  |
| 6        | You encounter something unusual. Go to the Life Events Table and have an Unusual Event.  |
| 7        | Life Event. Roll on the Life Events Table.   |
| 8        | You are attacked by enemies. Gain an Enemy, if you do not have one already, and roll either Melee 8+, Gun Combat 8+ or Stealth 8+ to avoid a roll on the Injury Table.   |
| 9        | You are offered a chance to take part in a risky but rewarding adventure. If you accept, roll 1D: On a 1–2, you are injured or arrested; either roll on the Injury Table or take the Prisoner career in your next term.<br>On 3–4, you survive, but gain nothing.<br>On a 5–6, you succeed. Gain DM+4 to one Benefit roll. |
| 10       | Life on the edge hones your abilities. Increase any skill you already have by one level.   |
| 11       | You are forcibly drafted. Roll for the Draft next term.  |
| 12       | You thrive on adversity. You are automatically promoted.   |

## SKILL PACKAGES

The 2300AD universe uses the following skill packages after all Travellers have been created:

### Troubleshooter Skill Package

This package is for a group of experienced professionals who solve problems for a corporation, government agency or other organisation.

Electronics (any) 1, Gun Combat (any) 1, Investigate 1, Medic 1, Melee (any) 1, Recon 1, Stealth 1, Streetwise 1

### Colonist Skill Package

This package is for a campaign where the Travellers must survive the harsh challenges of a frontier world.

Animals (any) 1, Drive (any) 1, Gun Combat (any) 1, Mechanic 1, Medic 1, Navigation 1, Recon 1, Survival 1

### Urbanite Skill Package

This package is for Travellers working the streets of a technologically advanced but decadent urban environment.

Carouse 1, Computers 1, Deception 1, Gun Combat (any) 1, Melee (any), Stealth 1, Streetwise 1

### Libertine Trader Skills Package

This package suits a group of free traders, plying the spaceways between colonies and avoiding the Core.

Advocate 1, Broker 1, Deception 1, Diplomat 1, Engineering 1, Gun Combat (any) 1, Persuade 1, Pilot 1, Streetwise 1

### Corporate Skill Package

This package is for a group that largely works in a corporate environment, whether in the Core or on the Frontier.

Admin 1, Advocate 1, Deception 1, Investigate 1, Profession (any) 1, Science (any) 1, Streetwise 1



## TRAVELLER CREATION EXAMPLE

Jasmine Anderson is a bright 18 year old, ready to embark on a career.

She rolls 2D six times for her characteristics, getting 9, 9, 7, 7, 6, 6. These rolls are assigned as follows:

|                      |                      |
|----------------------|----------------------|
| <b>STR 7 (DM +0)</b> | <b>INT 9 (DM +1)</b> |
| <b>DEX 9 (DM +1)</b> | <b>EDU 6 (DM +0)</b> |
| <b>END 7 (DM +0)</b> | <b>SOC 6 (DM +0)</b> |

### Nationality

Anderson is Australian, chosen from the table in *The Core: A Most Alien Place* chapter in *The Worlds of 2300AD*, page 8.

### Homeworld

Looking through the options in *Worlds of the Frontier* (*The Worlds of 2300AD*, page 23), she chooses the Australian colony on Kingsland (UCP D526545-8 0 Ag Lo 5 0 C) as her homeworld. This world has Normal gravity and so she has no gravity-based modifiers to her characteristics.

### Philosophy

Looking at the *Frontier World* table in *The Worlds of 2300AD*, page 23, there is a summary of each world and the predominate Path. Kingsland is primarily a Soft Path colony, so Anderson chooses the Soft Path as well.

### Background Skills

Next, Anderson chooses background skills. As a Traveller from a Frontier world, she would select background skills from the *Frontier World Background Skills* table on page 8. With her EDU of 6, she has EDU DM+0, so receives three background skills at level 0.

She chooses Drive 0, Mechanics 0 and Survival 0.

Finally, Anderson checks the description of her homeworld of Kingsland (*The Worlds of 2300AD* page 23) for any notes on Traveller creation. As she is on the Soft Path, Anderson receives the FADS/ANGPTL6 (Cold Adaptation) DNAM, as well as the VSS and AFS symbionts.

### Pre-Career Education

At this point, Anderson can elect to attend pre-career education. Kingsland is TL8, so the likelihood of being able to attend a university is remote. There is DM-4 to the normal EDU check for this (see the *Homeworld Pre-Career Admissions* table on page 9). She rolls a 9 for the EDU check, with DM-4 for the Tech Level, and Anderson unfortunately does not have any DMs for EDU. She fails to gain entrance to a local university.

She can also try for entrance to off-world pre-career education. Australia is a Tier 3 nation, so she has DM-2 on her checks to enter (as shown on the *Off-World Pre-Career Admissions* table on page 9). This time, she chooses to attempt to attend a military academy.

To take advantage of her intelligence, she chooses the Navy, which requires a roll of 9+ for entry. She has DM+1 from her INT and DM-2 for a Tier 3 colony, for an overall DM-1. She rolls a 10, giving her a result of 9. Success!

Anderson has successfully enrolled in an off-world naval academy and chooses an American naval academy at Ellis. This pre-education training provides Anderson the following skills at level 0 (see page 15 of the *Traveller Core Rulebook*): Athletics, Gun Combat, Gunner, Mechanic, Pilot and Vacc Suit.

Note that this Mechanic 0 does not stack with the Mechanic 0 gained from her homeworld background skills.

At the end of four years Anderson rolls to see if she graduates. Neither her END nor SOC are high enough to grant a bonus but her INT gives DM+1. She rolls a 7, which would normally fail but with her DM+1 she graduates, if only just. As she is going into the Navy for her first career, she will be automatically accepted. She can also increase three of the basic training skills she received to 1 and so chooses Pilot (small craft), Vacc Suit and Gun Combat (slug). Graduation also gives her EDU +1. As an academy graduate, she can roll for commission before starting her first term in the military. She needs to roll 8+ on a SOC check to succeed. She has no DMs for this check and rolls a 7. She fails to gain a commission and does not start her career as an officer.

During her term as a student, she rolls for an event. Her 2D roll of 7 sends her to the Life Events table, where another 2D is rolled, this time a 2, which sends her to the Injury table. Her final roll on the Injury table indicates that she was lightly wounded but there is no permanent effect.

Anderson is now 22 years old. She returns to her homeworld of Kingsland, at least until she passes a Leaving Home roll in another term.

Her characteristics and skills at this time are:

|                       |                      |
|-----------------------|----------------------|
| <b>STR</b> 7 (DM +0)  | <b>INT</b> 9 (DM +1) |
| <b>DEX</b> 10 (DM +1) | <b>EDU</b> 7 (DM +0) |
| <b>END</b> 7 (DM +0)  | <b>SOC</b> 6 (DM +0) |

**Skills:** Athletics 0, Drive 0, Gun Combat (slug) 1, Gunner 0, Mechanic 0, Pilot (small craft) 1, Survival 0, Vacc Suit 1

## First Term

For her first term in the Navy, Anderson chooses the Flight career. She rolls 1D on the Flight column of the Skills and Training table (see the Traveller Core Rulebook, page 34) and with a 2 gets the skill Flyer. She chooses the specialty Flyer (wing).

Next step is the Survival roll. Her home world of Kingsland inflicts DM-2 to Survival rolls. However, her DNAM provides DM+1. Survival is DEX 7+, so she also adds her DEX DM+1, for a total DM+0. She rolls 7 and makes the Survival roll but at the minimum possible. Using the Augmentation rule, she decides to receive a cybernetic eye.

The next step is to roll for an event. Anderson rolls an 8 for the event and participates in a diplomatic mission. From this mission, Anderson gets the choice of Recon 1, Diplomat 1, Steward 1 or a Contact. She chooses Recon 1.

She then checks for Commission. Her SOC is only 6, so she can only get a Commission in her first term. Her roll is a 9, which means she is now commissioned as an officer and gains rank 1. As Australia uses the air force rank structure for its space forces (see The Worlds of 2300AD page 83), she is a lieutenant.

Since she was commissioned, she does not need to roll for advancement. However, she does get to roll for an additional skill, as receiving a commission is the same as advancement/promotion. Anderson rolls a 3 on the Officer column of the Naval Skills and Training table and receives another level of Pilot.

The last step is to make a Leaving Home check (see page 10)

Travellers will leave their homeworld on a successful roll of 8+. Anderson rolls 11 and, with DM+1 applied for her single term in the navy, is definitely leaving Kingsland. Her homeworld and DNAM DMs no longer apply to survival rolls.

This is the end of her second term. She is now 26 years and a lieutenant in the Australian Space Force.

Her characteristics and skills are currently:

|                       |                      |
|-----------------------|----------------------|
| <b>STR</b> 7 (DM +0)  | <b>INT</b> 9 (DM +1) |
| <b>DEX</b> 10 (DM +1) | <b>EDU</b> 7 (DM +0) |
| <b>END</b> 7 (DM +0)  | <b>SOC</b> 6 (DM +0) |

**Skills:** Athletics 0, Blade (melee) 1, Drive 0, Flyer (wing) 1, Gun Combat (slug) 1, Gunner 0, Mechanic 0, Pilot (small craft) 2, Recon 1, Survival 0, Vacc Suit 1

## Remaining Terms

Now that Anderson has left home, Traveller creation proceeds as described in the Traveller Core Rulebook.

## Finalising

Once Traveller creation is complete, Anderson and any of her friends would muster out, tally up ship shares, and choose a skill package. Remember that, when mustering out as a follower of the Soft Path, Anderson receives DM-1 on both the Cash and Benefits tables.



# CYBERNETICS AND DNA MODIFICATION



AUGMENTATIONS

# CYBERNETICS

The challenges of life among the stars, from the steel canyons of the Core to the harsh life of the Frontier, have led many to embrace surgical and genetic enhancements to improve survival and quality of life.

On many worlds, human life would be much more difficult without symbionts to aid in environmental adaption and genetic modification for more extreme environments. These modifications make survival easier but in the minds of many, especially in the Core, recipients are somehow less than human. In fact, in some cases, the changes are extreme enough that a DNA modified individual cannot interbreed with a baseline human, effectively making them another species.

The daily hazards of life can often result in significant, even extreme, injury and while replacement body parts can be grown, often the quickest, surest way to return to the farm, the mines or the mean streets is mechanical replacement and enhancement.

Augmentation is the science and technology of replacing and upgrading body parts with artificial replacements, often with capabilities that mere biology cannot match.

DNA modification is the science and art of using tailored retroviruses to reshape the human genome, even in an adult, to better survive extreme environments. While further human experimentation has been banned under the multi-national Human Genome Moratorium Treaty, sometimes called the Moscow Treaty, there is continued, although tightly monitored, research on improving animal and plant adaptation to extreme colony worlds.

Symbionts are tailored microbes that extend and enhance the bodys ability to cope with environmental hazards. These microbes live in the lungs, gut or blood stream, filtering toxins and allergens, fixing calcium

## Prosthetic vs. Cybernetics

There is a distinction between prosthetics and cybernetics. Prosthetics are designed to duplicate the functionality of the original body part, while cybernetics are designed to augment it. Prosthetics are perfectly legal, while cybernetics are usually controlled.

to bone and helping digest the indigestible. They are a sustainable solution to many of the problems associated with Planetary Adaption Syndrome, or PAS. Even these minor enhancements are distrusted and rejected by many, who would prefer to live life under a filter mask than be colonised by engineered microbes.

## AUGMENTATION

While most surgical, chemical and cybernetic enhancements are legal in the 24th Century, few elect to have these invasive procedures. The drawbacks of augmentations often outweigh the benefits. Cybernetics are usually obvious and attract attention, and chemical therapies have their own drawbacks, including dependence and addiction. The surgery for many of the augmentations is difficult, especially when black market clinics are involved. Augmentation is not for the casual person looking for an upgrade.

All costs in this chapter include the necessary surgery.

For those who require enhanced capabilities, augmentations are the most effective route. TransNat agents, government super-soldiers and borged-up terrorists all use bio-mechanical augmentations to meet their goals. Other groups make use of augmentation, too, however. A colonist who loses a limb to a predator, without access or time to make use of limb-regrowth technology, soldiers in combat situations or outsiders assigned to hostile worlds needing augmentation to simply survive, are perhaps more legitimate users of augmentation technology.

## The Black Clinics

The Black Clinics are a sort of urban legend in the universe of 2300AD. Everyone has heard of them, tells tales of a friend of a friend of a friend who went to them, but no one has actually been to one. They do exist but are very rare. One would need extensive underworld contacts to ever have a chance of tracking one down. If one was able to, however, and had the Livre, they can provide just about any kind of augmentation imaginable, even some that are not. Most Black Clinics have links to ProVolution and so visitors can never be certain they are getting exactly what was asked for.

# CYBERNETIC AND SURGICAL MODIFICATIONS

Surgical and cybernetic modifications use implants of technological or biological material to mimic, improve or replace portions of the body. In most cases, installation of these modifications should be automatic, unless they are done under stress in the field. A full surgical suite can replace an automed in any of the skill checks below.

## Subdermals

Subdermal implants are a special case and completely legal practically everywhere. These implants do not go as far as full cybernetic implants; they consist of several types of equipment implanted in the body but do not require mind-machine interfaces. Their control is more basic, typically by wiring controls into the hands and displays to the optic nerve. To activate the devices usually requires a set of hand motions unlikely to be performed by accident. After that, the motions of the fingers control the equipment as if it were being held. This interface technology is called a 'virtual input device'.

### AUGMENTED REALITY RIG

The AR rig is a common technology in the Core. It requires either a Transdermal Link, or subdermacomp to power it. The AR rig is linked to the optic nerve as a display device, overlaying computer-generated images and data in the user's field of view. This could be as mundane as travel directions or as complex as a whole new reality written over the real world. AR rigs can also display sensor data from devices connected over a PAN or act as a targeting system for weapons with an appropriate imaging sight.

| Augmentation          | TL | Cost   | Surgery Time |
|-----------------------|----|--------|--------------|
| Augmented Reality Rig | 11 | Lv2500 | 20 minutes   |

### GROWLER

The growler is a specialised implant used for communication with the Ebers and allows a Traveller to duplicate the low notes used in parts of Eber speech.

| Augmentation | TL | Cost   | Surgery Time |
|--------------|----|--------|--------------|
| Growler      | 10 | Lv1500 | 30 minutes   |

### PAN CONTROLLER

The Personal Area Network is a very short-range networking protocol that uses either encrypted low-power radio signals or signals transmitted across the surface of the skin. All PANs require a controller, a small device implanted just below the skin.

| Augmentation   | TL | Cost  | Surgery Time |
|----------------|----|-------|--------------|
| PAN Controller | 10 | Lv500 | 10 minutes   |

### RFID CHIP

On the Core worlds, many opt to have RFID chips installed to provide secure access for their homes, cars and bank accounts. That the chips can also be used to track them does not bother most citizens of the Core, as they see this as another safeguard of their security. RFID chips are implanted with a large hypodermic and take mere moments. In Law Level 8+ societies, this is extremely common and there will be no associated cost.

| Augmentation | TL | Cost | Surgery Time |
|--------------|----|------|--------------|
| RFID Chip    | 9  | Lv50 | N/A          |

### SKINWATCH

The skinwatch is a basic multifunction mini-comp implanted just under the skin of the forearm. Along with telling time, the watch also monitors heartrate, blood pressure, body temperature and blood oxygen levels. Powered by body heat, it is widely available and widely used. The display is visible just under the skin at the wrist and can be controlled via touch through the skin, or voice through a subdermatalk. Surgery is usually conducted by a special-purpose miniature automed at the store where the device is purchased. The skinwatch can connect by a PAN to portacoms or Link phones for extra processing power. For an additional Lv100, it can use the entire inner (or outer) forearm as a display.

| Augmentation | TL | Cost  | Surgery Time |
|--------------|----|-------|--------------|
| Skinwatch    | 10 | Lv250 | 5 minutes    |

### SUBDERMACOMP

The subdermacomp is similar in performance to a portacomp (computer/3), including a Link data connection. The subdermacomp cannot use normal plug-in program chips, but does include a special reader that can interface with the subdermacomp through an induction link, allowing programs to be downloaded to the computer rather than slotted in. This takes up to two minutes per program. The subdermacomp uses a link

to the optic nerve to provide a basic display, although anything more advanced requires an AR rig. The price includes the basic virtual display but no input device.

| Augmentation | TL | Cost    | Surgery Time |
|--------------|----|---------|--------------|
| Subdermacomp | 11 | Lv15000 | 50 minutes   |

### SUBDERMATALK

The simplest of true subdermals, the subdermatalk consists of a small 15 kilometres range radio implanted behind the ear, with a microphone placed alongside the larynx. It is not necessary to talk out loud to use the system – sub-vocalising is enough. This is often part of other subdermal device suites, like the subdermacomp, skinwatch or AR rigs.

| Augmentation | TL | Cost  | Surgery Time |
|--------------|----|-------|--------------|
| Subdermatalk | 10 | Lv500 | 20 minutes   |

### TRANSDERMAL LINK

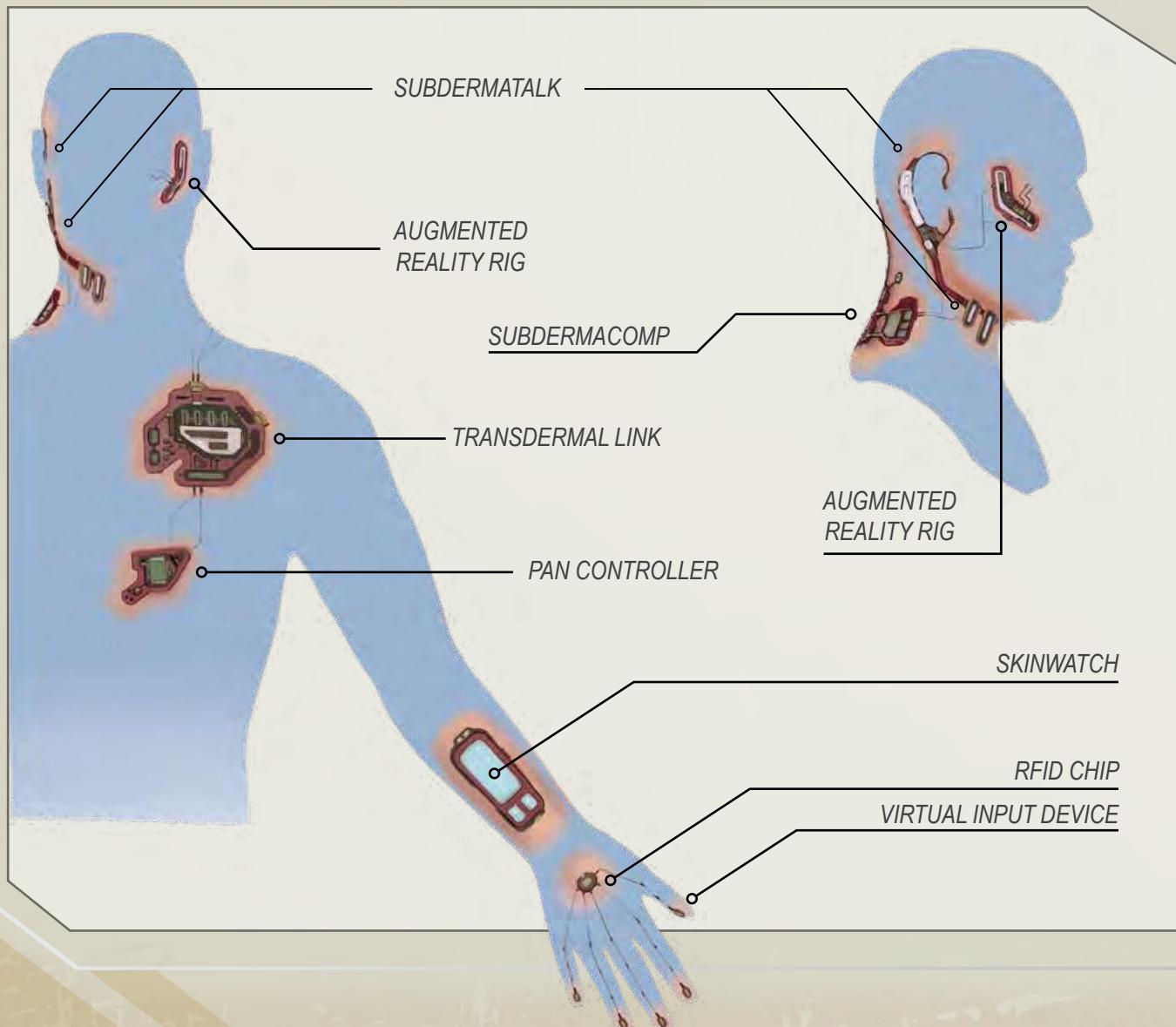
This is an implanted Link phone with external access ports to allow upgrades. It is typically linked to an AR rig, VID or subcutaneous microphone for input. It can also be spliced into a neural jack.

| Augmentation     | TL | Cost   | Surgery Time |
|------------------|----|--------|--------------|
| Transdermal Link | 10 | Lv2500 | 10 minutes   |

### VIRTUAL INPUT DEVICE

The virtual input device (VID) is used with subdermacoms and transdermal AR Links to provide input. It uses sensors implanted in the finger tips to determine input commands, along with an overlay in a Heads Up Display or implanted AR rig to display a virtual keyboard or other input device. Requires a PAN.

| Augmentation         | TL | Cost  | Surgery Time |
|----------------------|----|-------|--------------|
| Virtual Input Device | 10 | Lv850 | 10 minutes   |



# IMPLANT AUGMENTATIONS

Implants are used alongside existing biological systems to extend the users abilities. They tend to require complex surgical procedures. The cost of surgery is included in the listed costs.

## COMBAT IMPLANT

The combat implant is a Manchurian development from the Central Asian War but entered service too late to be of any use. A development of the HyperCharger, the combat implant does not just store endorphins for later use, it stimulates their production. While active, the combat implant grants the Fast Metabolism (+1) trait and can store up to four surges. Each surge grants the Tough (+2) trait and increases the Fast Metabolism trait to Fast Metabolism (+2).

Each time a surge is used, and for every hour the base system is running, the Traveller must make an END Check. The first is Routine (6+), the next Average (8+), Difficult (10+), Very Difficult (12+) and finally Formidable (14+). The DM from the Tough trait provided by the implant does not apply to these checks. If the Traveller fails a check all bonuses end and they suffer DM-2 to all checks for 1D hours.

Side effects of the combat implant stem from the flood of hormones released from the device. These include a pronounced body odour; a sharp, sour smell. Ironically, the smell is also accompanied by an enhanced libido, for all subjects regardless of gender.

| Augmentation   | TL | Cost    | Surgery Time |
|----------------|----|---------|--------------|
| Combat Implant | 10 | Lv80000 | 1D hours     |

## HYPERCHARGER

The Hypercharger is a custom-fabricated organ used to store some of the endorphins that the body naturally produces. The endorphins are saved for reintroduction into the body when needed to add extra oxygen to, and remove fatigue toxins from, the Traveller's bloodstream. The Hypercharger is installed in the abdomen and replaces part of one kidney.

Hyperchargers are used to increase END and can be triggered at will. Each Hypercharger can store three END surges, each of which will last for 1D rounds. During this time, the Traveller receives a +3 bonus to their END and adds 4m to their speed.

| Augmentation | TL | Cost    | Surgery Time |
|--------------|----|---------|--------------|
| HyperCharger | 12 | Lv60000 | 1D hours     |

## MUSCLE IMPLANT

This technique involves taking a muscle tissue sample from the Traveller and culturing it in a collagen tank, then grafting these new muscles into the existing tendon/ligament system.

This technique can be used to increase STR by up to +3. Each point of STR added after the first costs an additional Lv20000 and will temporarily reduce DEX by -1 for 1D weeks.

| Augmentation   | TL | Cost    | Surgery Time |
|----------------|----|---------|--------------|
| Muscle Implant | 10 | Lv20000 | 1D hours     |

## NEURAL SHEATHING

This technique utilises viruses, which have been engineered to enhance and improve the myelin sheathing around nerve cells, increasing neural transmission rates and minimising signal loss. To perform the process, a doctor takes samples of blood, nerve tissue and spinal fluid from the Traveller to properly tailor the viruses and determine what support chemicals are required.

The tailored viruses are then injected into the Traveller and they will spend the first day in a MetabolX-Omega induced coma. Once the virus has taken hold, the administration of the support chemicals determines DEX improvement. This technique can be used to increase DEX by up to +3 and every point of increased DEX above the first costs an additional Lv5000.

At the end of the treatment, the Traveller also receives the Fast Metabolism (+1) trait, in addition to DEX improvements.

| Augmentation     | TL | Cost    | Surgery Time |
|------------------|----|---------|--------------|
| Neural Sheathing | 11 | Lv25000 | 1 week       |

# MAN-MACHINE IMPLANTS

One of the results of increased knowledge of nerve cells has been the development of a technology by which human nerves can be linked to electronic devices. In this way, the biochemical process of thought can be translated into action by machine. This technology is most valuable in allowing the control of prosthetic limbs and cybernetic replacements such as eyes and ears but can be extended through a neural interface to allow control of external devices, including vehicles and weapons.

## NEURAL BRIDGE

The same technology behind a neural link can create a direct interface between an implanted subdermacomp and the brain. This requires a neural jack to be installed and then a bridge connector between the jack and the comp. No virtual display or keyboard is required.

| Augmentation  | TL | Cost    | Surgery Time |
|---------------|----|---------|--------------|
| Neural Bridge | 12 | Lv15000 | 40 minutes   |

## NEURAL JACK

When it first appeared in the late 2280s, the neural jack was hailed as the ultimate tool in ridding humanity of the constraints of the body. It is an electronic socket wired to a Traveller's brain through a neural bridge. This allows the Traveller to plug cable connections into equipment in order to control it by thought, as if it were the Traveller's own body. Computers respond at the speed of thought, allowing input without the cumbersome interference of the Traveller's body.



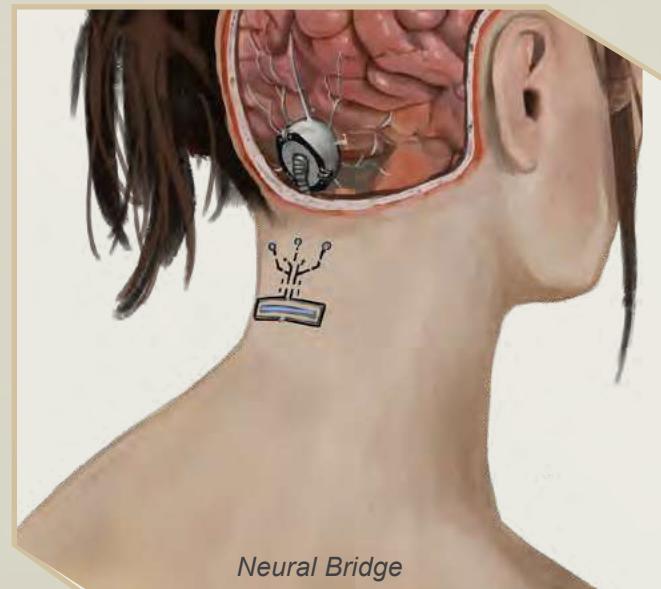
When jacked into a piece of equipment, a Traveller's control of it will be both quicker and more accurate than if using manual controls. A jacked Traveller receives DM+2 to any skill checks involving the use of the equipment and, in the case of vehicles and ships, DM+1 to Initiative rolls. If a Traveller is jacked into a vehicle or starship, they become almost insensible to the control of their own body; the ship or vehicle effectively becomes their body. Any skill checks requiring the Traveller to use their own body while jacked into a ship or vehicle suffer DM-4.

Most military and civilian equipment at TL11 and higher may (3+ on a roll of 1D) have neural interface capability. TL12 items always have a neural link, if appropriate.

Weaponry is a special case, as any firearm can be equipped with a dual set of linkages, one of which controls the trigger while the other feeds targeting information directly to the optic nerve in much the same way as a virtual display. This gives the benefit of a built-in HUD (DM+1 to attack rolls) while granting the Traveller DM+1 on Initiative rolls while using the weapon.

At the time of installation, the Traveller must decide where the jack will be located on their body, the most common being on the temple or forehead (for ease of access) or at the nape of the neck (where it can be hidden by hair or clothing). Another common choice, especially for military operators, is the wrist, allowing for quick and easy connection to hand-held weapons.

| Augmentation | TL | Cost    | Surgery Time |
|--------------|----|---------|--------------|
| Neural Jack  | 11 | Lv12000 | 1 hours      |



# CYBER WEAPONS

It is possible to implant several different types of weapons, mostly melee weapons but Pentapod biolasers have been found in the hands (literally) of terrorists and criminals in many parts of human space. These devices are extremely illegal and possession is often sufficient provocation for police and security forces to engage in pre-emptive self-defence. Most are activated by gestures but can be patched into a neural bridge for true mental control.

## CYBERLIMB WEAPONS

Firearms can be installed into a cybernetic limb. An arm can hold a handgun-sized weapon, while the leg can hold a large pistol or small machine pistol. The leg mount can be either a holster or an actual firing mount, in which case it suffers DM-2 to attack rolls due to awkwardness. These are usually controlled with a neural bridge.

Cyberlimb weapons cost three times the cost of the standard weapon, plus Lv15000

## HAND RAZORS

Razors are short and exceptionally sharp carboglass blades implanted into either cybernetic or flesh hands. They are designed to retract under the fingernails and while retracted almost impossible to spot. While the blades are strong they can be broken and replacing them is almost as difficult as implanting them in the first place.

| Weapon      | TL | Range | Damage | Kg | Cost    | Traits |
|-------------|----|-------|--------|----|---------|--------|
| Hand Razors | 11 | Melee | 2D     | —  | Lv20000 | —      |

## WRIST BLADES

Larger than the razors, wrist blades are implanted in a sheath that runs along the top of the forearm and are hidden from visual inspection but are detectable through close physical examination of the arm. They are usually made of ceramic, difficult but not impossible to detect with security scanners.

| Weapon       | TL | Range | Damage | Kg | Cost    | Traits |
|--------------|----|-------|--------|----|---------|--------|
| Wrist Blades | 12 | Melee | 3D     | —  | Lv50000 | —      |



Hand Razors



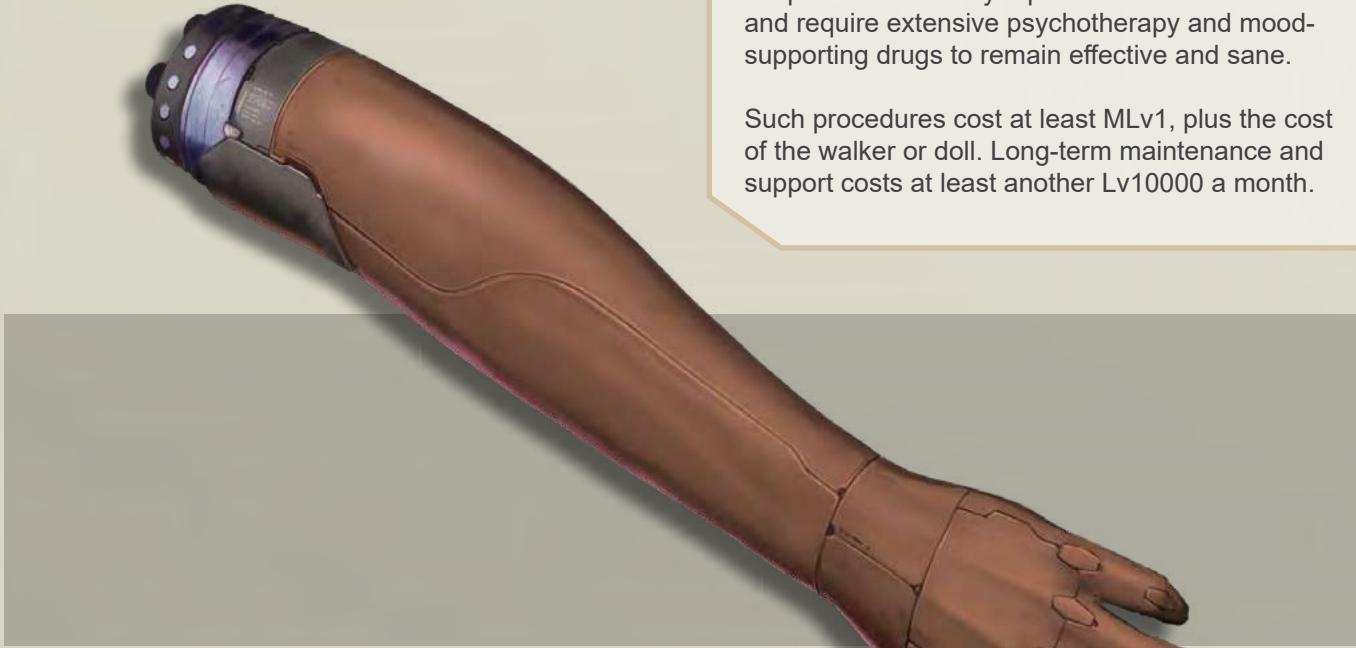
Wrist Blades

## CYBERNETICS

Most crippling injuries in the 24<sup>th</sup> Century can be simply repaired by growing replacement tissue from the Traveller's own cells and then grafting it on. Entire limbs and organs can be repaired in this way. This process takes about a month and the surgery is straightforward as there is no possibility of rejection.

Some sources, however, offer prosthetic replacements for those who prefer them to the real thing. Prosthetics, while lacking the subtlety of tactile sensation that real organs and limbs give, have many tempting advantages over flesh-and-blood counterparts. Prosthetic limbs do not tire as easily as natural limbs, nor do they feel pain as more than an abstract sensation. Cybernetic eyes and ears also offer enhanced senses.

Cybernetics tend to be more common in military circles, as regrowth therapy takes too long and is too specialised for field surgeries. A soldier who loses a limb can be back in action in as little as a week with a cyberlimb, versus at least a month for a regrown limb, plus any retraining time. This same logic applies on colony worlds as well, where even an automed can install a cybernetic limb.



## Cybernetics and Law Level

Enhanced cybernetics are limited by national or colonial Law Level. Cybernetics may lawfully increase a Traveller's physical characteristics by 10-Law Level. Greater enhancements are illegal.

### Full Cyborgs

Full cyborgs, where the entire body has been replaced by mechanical systems, are very rare in human space – there are only 61 known, all accident victims where regrowth/regeneration failed for one reason or another. Most are concentrated on the Core Worlds, which have the resources to maintain their artificial bodies.

Medical technology in 2300AD is just barely up to the task of implanting a human brain and the required support systems into a wholly artificial body. Most early experiments made use of modified combat walkers, the large internal space being ideal to house the brain and support system, with room to cushion and protect everything adequately.

More recent innovations have allowed the use of what are effectively doll bodies, although the process is much more difficult and requires more maintenance and support. In either case, the recipients of full-body replacements do not thrive and require extensive psychotherapy and mood-supporting drugs to remain effective and sane.

Such procedures cost at least MLv1, plus the cost of the walker or doll. Long-term maintenance and support costs at least another Lv10000 a month.

## CYBERNETIC EYES

Cybernetic eyes are a very common, and useful, modification. They are popular with belter and Libertine crews, usually with the flash-proof option. Poor vision is quite rare, especially in Core populations where minor and cosmetic gene fixing has been practiced for a very long time.

Cybernetic eyes are relatively inexpensive and offer perfect vision that will not fade with time. Cybernetic eyes also lack the power and maintenance problems of cybernetic limbs and the infection issues of neural plugs.

Most cybernetic eyes are easy to detect as they tend to be a standard shade of blue, brown, or grey. Many also have the lensmaker's logo neatly printed around the iris in tiny script. Some are shades that no human eye will ever be but it is possible to obtain eyes that appear completely real.

There are several option packages available for use with cybernetic eyes, which can be purchased and installed at any time.

Cybernetic eyes grant the Heightened Senses trait where vision is used. All cybernetic eyes likewise come with a camera function, with internal storage for up to 500 still images or 100 seconds of video. These images or video can be downloaded by a PAN to a Link phone or portacomp. If the user has a subdermacomp and a neural bridge, they can store an effectively unlimited number of still images or several hours of video.

| Augmentation   | TL | Cost       | Surgery Time |
|----------------|----|------------|--------------|
| Cybernetic Eye | 10 | Lv5000/eye | 2 hours      |



- **COLOUR ENHANCEMENT:** This option allows the Traveller to see things in computer-enhanced colour or black and white. Colour enhancement makes it easier to spot camouflaged targets (DM+1 to related Recon checks) and observe fine detail.

| Augmentation       | TL | Cost   | Surgery Time |
|--------------------|----|--------|--------------|
| Colour Enhancement | 11 | Lv1000 | 20 minutes   |

- **DATA DISPLAY:** This effectively adds the capabilities of an AR rig to the Traveller's cybernetic eyes, a rather trivial programming change.

| Augmentation | TL | Cost   | Surgery Time |
|--------------|----|--------|--------------|
| Data Display | 11 | Lv1000 | 20 minutes   |

- **FLASH PROOF:** This option protects the Traveller's vision from sudden flares of light, giving them the same protection as photosensitive goggles.

| Augmentation | TL | Cost   | Surgery Time |
|--------------|----|--------|--------------|
| Flash Proof  | 10 | Lv1200 | 20 minutes   |

- **LOW LIGHT:** This option grants light-intensification capabilities in low-light environments.

| Augmentation | TL | Cost   | Surgery Time |
|--------------|----|--------|--------------|
| Low Light    | 10 | Lv1500 | 20 minutes   |

- **SUBTLETY:** This option makes it almost impossible to detect that the user's eyes are cybernetic, requiring either a Very Difficult (12+) Medic check (EDU) or a Formidable (14+) Investigate check (INT)

| Augmentation | TL | Cost   | Surgery Time |
|--------------|----|--------|--------------|
| Subtlety     | 12 | Lv5000 | 20 minutes   |

- **TELESCOPIC VISION:** Telescopic vision adds lenses and an enhanced algorithm to deliver superior, steady, long range vision, effectively equal to 40x binoculars.

| Augmentation      | TL | Cost   | Surgery Time |
|-------------------|----|--------|--------------|
| Telescopic Vision | 10 | Lv2000 | 20 minutes   |

- **THERMAL IMAGING:** Thermally-sensitive imagers are added to the base vision layer of a cybernetic eye, allowing vision without visible light, so the Traveller can see gradations in temperature. This is a common modification for Libertine and belter crews.

| Augmentation    | TL | Cost   | Surgery Time |
|-----------------|----|--------|--------------|
| Thermal Imaging | 11 | Lv2200 | 20 minutes   |

## CYBERNETIC EARS

Cybernetic ears are an uncommon modification but enjoy a certain appeal with the avant-garde, as well as scouts and other explorers. Cybernetic ears automatically grant the Heightened Senses trait where hearing is used. All cybernetic ears have the ability to record sound for later playback, a trivial feature where the audio files can be download through a PAN or inductive connection.

| Augmentation   | TL | Cost   | Surgery Time |
|----------------|----|--------|--------------|
| Cybernetic Ear | 10 | Lv2500 | 1 hour       |

- **HIGH-FREQUENCY ACOUSTIC SENSOR:** This option allows a Traveller to hear sounds above the range of normal humans. As with the low-frequency sensor, this ear replacement does not appear natural – they are constructed of relatively dense materials such as plastics or even metals. Note that the high-frequency and low-frequency sensors cannot be combined in a single ear, although a Traveller could have one of each. This sensor grants DM+2 on all Recon and Investigate checks involving high-frequency sound.

| Augmentation                   | TL | Cost   | Surgery Time |
|--------------------------------|----|--------|--------------|
| High-Frequency Acoustic Sensor | 11 | Lv3500 | 20 minutes   |

- **LOW-FREQUENCY ACOUSTIC SENSOR:** This ear replacement enables a Traveller to hear sounds below the range of normal humans. Ears with this option do not appear natural – they tend to be larger than normal and, although constructed of cartilage and flesh, are often of an unusual shape (pointed at the top, for instance). This is not an add-on option and the ear must be installed with this option when first fitted. These ears are popular with researchers studying the Eber, as it allows them to hear in the low-range of the Eber aural spectrum. It also grants DM+2 on all Recon and Investigate checks involving low-frequency sound.

| Augmentation                  | TL | Cost   | Surgery Time |
|-------------------------------|----|--------|--------------|
| Low-Frequency Acoustic Sensor | 11 | Lv3500 | 20 minutes   |

- **SOUND DAMPENER:** Although loud or irritating sounds will not damage cybernetic ears in any way, they can still be unpleasant to the Traveller. This option enables the Traveller to dampen out specific ranges from the sonic spectrum, allowing sound to be selectively-dampened or filtered, which can

also make it easier to hear a specific sound (such as someone's voice) in a noisy environment. This usually requires a neural bridge for control, although it could be activated from a skinwatch or Link phone through a PAN.

| Augmentation   | TL | Cost   | Surgery Time |
|----------------|----|--------|--------------|
| Sound Dampener | 10 | Lv1250 | 20 minutes   |

## CYBERNETIC LIMBS

Cybernetic limbs have STR 7 (for arms) and END 7 (for legs) but can be improved up to a maximum of STR or END 16. In most checks using STR or END as a modifier, a Traveller's normal characteristic should be used but if the referee chooses, the STR or END of the cybernetic limb may be used instead. For example, if a Traveller is attempting to lift a heavy weight from the floor, their natural STR should be used, since all their limbs and torso muscles are involved. If, on the other hand, the Traveller is hanging from a ledge by their cybernetic arm, the STR of the arm should be used in determining if they can hold on.

- **CYBERNETIC ARM:** Cybernetics arms are the most common artificial replacement used on the Frontier. Limbs are often seriously injured or lost in equipment accidents or to wild animals, and relatively easy to replace.

| Augmentation              | TL | Cost    | Surgery Time |
|---------------------------|----|---------|--------------|
| Cybernetic Arm (STR 7)    | 10 | Lv10000 | 2 hours      |
| Per point of STR increase | 11 | Lv1000  | —            |
| Cybernetic Hand           | 10 | Lv4800  | 1 hour       |

- **CYBERNETIC LEG:** Unlike in old vid programs, cybernetic legs do not allow a Traveller to run faster or jump higher. They do allow a Traveller to walk or run *further*, however. They grant an alternative END for purposes of moving over long distances or time periods. For other tasks, like taking damage or resisting environmental effects, a Traveller's normal END is used instead.

| Augmentation              | TL | Cost    | Surgery Time |
|---------------------------|----|---------|--------------|
| Cybernetic Leg (END 7)    | 10 | Lv12000 | 3 hours      |
| Per point of END increase | 11 | Lv600   | —            |
| Cybernetic Foot           | 10 | Lv1000  | 1 hour       |

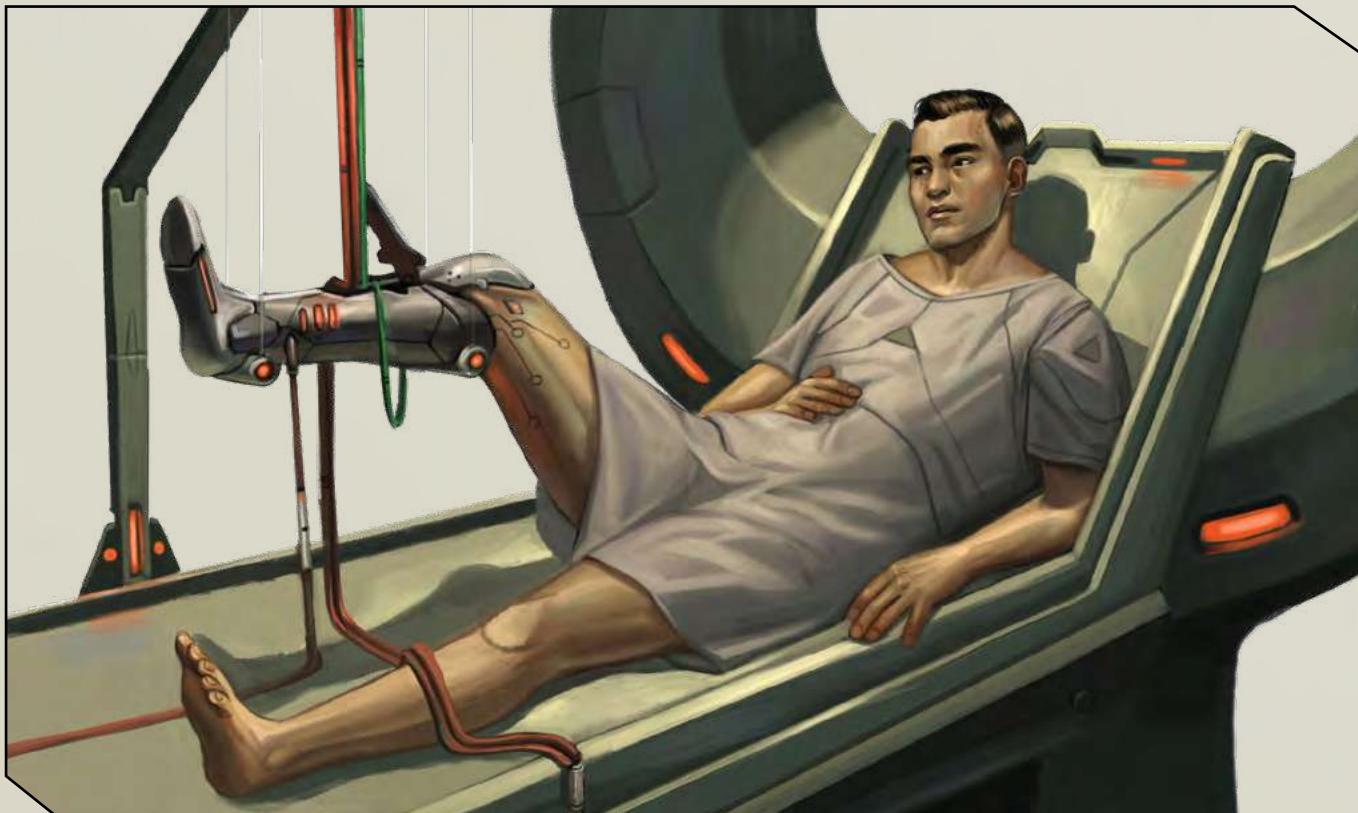
- EQUIPMENT:** A cybernetic limb may be constructed with any one-handed item of equipment built into it, including a one-handed firearm. The cost for cybernetic equipment within a limb is five times the value the equipment would normally be.
- CYBERLIMB BATTERY:** Cybernetic arms and legs require a power source, typically contained within the limb itself. This is usually a compact super-battery, which can supply power to the limb for up to 96 hours (four days) of constant use. These batteries can be recharged from any standard supply, including household current and portable generators, or quickly replaced if needed.

| Item              | TL | Cost | Surgery Time |
|-------------------|----|------|--------------|
| Cyberlimb Battery | 11 | Lv50 | —            |

### CYBERNETIC LIMB ARMOUR

All cybernetic limbs provide Protection +2 each, which can be combined with traditional armour. Limbs can have additional armour installed, with a maximum added Protection of TL-6.

| Item             | TL | Cost              | Max. Protection | Surgery Time |
|------------------|----|-------------------|-----------------|--------------|
| Cyberlimb Armour | 11 | Lv2000/Protection | TL-6            | —            |



## Maintenance

Cybernetic legs require a considerable amount of maintenance and tuning, equal to TL-6 hours per month. For each month missed, the Traveller suffers DM-1 to all checks requiring movement and their speed drops by one metre. Cybernetic arms require less maintenance, only TL-8 hours a month, but still inflict DM-1 to checks requiring their use if maintenance is missed. This penalty is cumulative for each month missed.

All other implants (eyes, ears, subdermals and so forth) require only yearly maintenance, at an hour per system, for the cost below.

| Item        | TL | Cost     | Surgery Time |
|-------------|----|----------|--------------|
| Maintenance | —  | Lv100/hr | —            |

# DNA MODIFICATION

One of the great breakthroughs of 22<sup>nd</sup> Century medical technology was the development of DNA Modification (DNAM) technology. Originally created as a means of curing genetic disorders, DNAMs use tailored retroviruses that rewrite the genetic code of a mature individual. These changes are permanent and passed to successive generations. In the 150 years since they were first developed, DNAMs have helped to all but eliminate genetic disorders on the Core worlds. In 2192, a joint American-Canadian team developed the most famous of the DNAMs, the so-called King Ultra, which opened the hostile world of King to settlement and exploitation. Many DNA Modifications are subsidised by colonial governments, and costs reflect this. The market cost of a DNAM is roughly 5x the listed price. Note that Gender Reassignment and Retrograde modifications are not subsidised and the price reflects that.

DNAMs have become the focus of the Soft Path to colonisation. Adapt people to the worlds, rather than let machines stand between colonists and their new homes. The Life Foundation was a major backer and advocate of this technology, and even with the Moratorium in place, they continue to lobby for the re-introduction of the technology. Several nations keep a careful eye on the Foundation, over concerns they may indulge in illegal experimentation.

There are, of course, persistent rumours of DNAM technology being misused, of governments and TransNats (not to mention ProVolution) creating super-soldiers or super-geniiuses. There has been no evidence of this to date, although, and each of the existing DNAMs required upwards of 20 years of development, something that few megacorporations, governments or terrorist organisations can commit to. These rewrites were largely the work of extra-governmental foundations, primarily the Royal Society, the Life Foundation and the Alberta Farmer's Cooperative.

There are issues in genetic compatibility between people who have received DNA modifications. Major modifications are only interfertile with someone who has received the same modification and are not interfertile with other DNA modifications or unmodified humans. Genetic intervention can allow viable offspring but the procedure is expensive and can only be performed in a few large research hospitals. Technically, a Traveller who has undergone Major DNA modification is a different species and can be considered as no longer human.

Someone who has undergone Minor DNA modification can freely interbreed with unmodified humans or with others who have undergone the same DNA modification. This led to the term 'breeder' being used by some DNA modified subjects to refer to baseline humans, although it is not entirely accurate.

## Gene Riots

In the late 2270s, continued human contact with the Pentapods led to a disturbing conclusion; the human science of DNA modification, which was opening so many worlds to human expansion, was a significant step on the road to whatever it was the Pentapods

## Transhumanists

Transhumanism is a small, but vocal, movement in 2300AD. The basic tenet of transhumanism is that humanity has developed the tools to improve itself, far beyond the minor tweaks done in the name of eliminating congenital diseases. Super-intelligence, immortality and perfect health are just some of the benefits touted by the transhumanists. They feel that DNAM technology has the potential to advance humanity to something approaching godhood and transhumanists vigorously protest the Moratorium. Opponents of transhumanism can point to ProVolution as an example of the philosophy going wrong.

had become. People looked at the Pentapods, where biotechnology has made them virtually indistinguishable from their machines, and realised humanity was in danger of heading down the same road. This led to increasing protests and riots until the late 2280s, when most major nations signed the Moscow Treaty on Human Genomic Modification, often called the Moratorium, that forbade further research into human genetic modification. Existing modifications are still permitted under the Moratorium; it is just the development of new modifications that is prohibited.

All DNAM treatments are listed with special features (if any), type and cost.

Type refers to the severity of the modification. Minor modifications are outpatient treatments, with the Traveller held for an hour or two after treatment to ensure that their body has accepted the procedure. The modification is typically complete within a month, with relatively minor side-effects, such as minor pains, itching and temporary loss of sensory functions.

Major modifications, on the other hand, significantly rework a sizable portion of the Traveller's body and usually require them to be sedated for up to three months.

Cost refers to the cost of the treatment itself. As these modifications are usually performed on colonists, the sponsoring government typically picks up the bill.



## DNAM Rejection

Since most DNA modifications are specifically-tailored to an individual, the chance of rejection, at least for the first DNAM taken, is relatively minor. A Traveller receiving a DNAM must make an Easy (4+) END check. DM-2 is applied for a Major modification. Being unconscious and under observation in an automed for the first week of the procedure grants DM+2 to this check.

If the DNA modification is rejected, it can simply be tried again, with a further DM-1. If it is rejected a second time, however, it should not be retried. If it is retried a third time, the Traveller will likely get very sick, even if they make the END check, and will suffer 2D damage. If they fail the rejection check the result is often death due to massive shock and rapidly metastasizing cancers and teratomas. A Difficult (10+) END check must be succeeded to avoid death.

## Multiple DNA Modifications

While it is possible to combine DNA modifications, it is not generally a good idea. Each modification was the result of decades of study.

The END check on the second modification suffers DM-2 if it is a Minor Modification and DM-4 if a Major modification. There is an additional DM-2 to all END checks if an existing modification is Major. Trying to implant a third modification will almost always fail, as there is an additional DM-4 to all END checks, on top of the penalties for the second check. Even on a successful check, 1D teratomas will erupt.

## Teratomas

Teratomas are a type of tumour that contains anomalous tissue, like teeth, finger nails and sometimes even whole structures, like fingers and eyeballs. If the teratomas are visible, they cause DM-2 to all SOC-based checks. Teratomas also reduce END by -1 each until removed.

## DNAMS

The following modifications are commonly available at large hospitals and well-equipped clinics. Most Core facilities will only perform the Free Fall modification. DNAM treatments for colonists are administered in clinics in orbit, after which the colonists embark on their ships, where they get to spend the next month or so in extreme discomfort as their bodies rebuild themselves.

### ARIEL DRY WORLD ADAPTATION

A few colony worlds are so dry that they offer significant difficulties to settlers. The Ariel DNAM, based in part on the sequenced genome of the Dorcas gazelle, provides several specific adaptions to extremely dry conditions. On worlds that encourage the adoption of this DNAM, the modification also has environmental adaptation specific to that world, to combat the effects of PAS. Dunkelheim and Ellis are two examples of worlds that provide this DNAM.

Travellers with this DNAM need no additional water aside from what they get from food. Urine is crystallised into pellets, with water retained. They do not cry or



sweat, and their eyes are protected from dust and other irritants by a nictitating membrane, like a second set of eyelids. The Traveller gains DM+2 on checks to resist the effects of hot weather but suffers DM-2 to resist the effects of cold weather.

| Modification | TL | Type  | Cost    |
|--------------|----|-------|---------|
| Dry World    | 10 | Minor | Lv18000 |

### EPAS/HIF THINAIR MODIFICATION

The ThinAir modification is aimed at worlds like Crater, where the surface atmospheric pressure is just thick enough to breathe but still thin enough to cause a great deal of discomfort. It greatly increases the concentration of blood vessels along the alveoli inside the lungs, acting to increase the amount of oxygen that can be drawn from the air. The downsides of this modification are two-fold. First, normal air feels thick and heavy to breathe, and increased oxygen can cause the Traveller to behave erratically. This can be overcome with a filter mask. The second drawback is the increased concentration of blood vessels in the upper torso, which can increase the severity of chest wounds. Most consider these drawbacks to be acceptable and the BCA symbiont can assist with the latter problem.



This DNAM allows a Traveller to breathe in Thin and Very Thin atmospheres without a compressor mask but any wound causes an extra one point of damage. Attempting to breathe thicker air without a filter mask will result in oxygen intoxication, which inflicts DM-1 to all checks.

| Modification | TL | Type  | Cost    |
|--------------|----|-------|---------|
| Thin Air     | 10 | Minor | Lv30000 |

### FADS/ANGPTL6 VOSTOK COLD WEATHER ADAPTATION

Some Frontier worlds are otherwise useful but average temperatures are too cold for comfortable, or profitable, habitation. The cold weather modification helps adjust that. An extra layer of fat is grown, metabolism is accelerated to produce more heat and a second eyelid added to reduce glare blindness. This adaptation is combined with the PEA where applicable.

A side-effect of this DNAM is a requirement for a high-protein, high-fat diet.

The Traveller gains DM+2 on checks to resist the effects of cold weather. Conversely, they suffer DM-2 to resist the effects of hot weather.

| Modification | TL | Type  | Cost    |
|--------------|----|-------|---------|
| Cold Weather | 10 | Minor | Lv12000 |

### KING ULTRA MODIFICATION

The first, and most-widely known, of the DNAM therapies, the King Ultra rewrite is also the most extensive. The primary change is a rebuild of the host's muscular and skeletal system, greatly increasing the strength and density of both. This alters the subject's height as well, resulting in a more compact, but no less massive, individual. Additional changes are made to the cardiovascular system, strengthening the heart and altering the circulatory system to ensure efficient blood flow. The lungs are also modified, allowing them to function properly in King's much denser atmosphere. Along with this modification, King colonists also require either an AFS (see page 34) or a filter mask. Most opt for the AFS.

Less well-known, and less publicised, are the side-effects of the King Ultra modifications. The supercharged cardiovascular system, coupled with King's extreme gravity, sees few colonists living past their 70<sup>th</sup> year, as opposed to the 110+ years expected on most worlds – their hearts and bodies just



wear out. The DNAM also did not provide additional clotting mechanisms, so lacerations and penetrating wounds tend to be extremely serious, as the powerful cardiovascular system will send blood jetting out of any deep wound. The BCA symbiont was developed to address this issue but not for several years after the colonisation of King.

All Travellers who receive the King modification receive the following changes: STR +1D, END +1D and on worlds of normal gravity and lower, they gain the Fast Metabolism (+1) trait. In any atmosphere type less than Dense (Atmosphere code lower than 8), the Traveller must wear a compressor mask (same cost as a respirator mask).

Any damage causes an extra one point per 1D of damage. For example, a pistol shot causing 3D damage normally, would cause 3D+3 damage on a Traveller with this modification. Use of the BCA symbiont (see page 35) eliminates this penalty.

| Modification | TL | Type  | Cost    |
|--------------|----|-------|---------|
| King Ultra   | 11 | Major | Lv45000 |

## PAX/DLX TRANSCRIBE FREE FALL SPACE ADAPTATION MODIFICATION

The Free Fall modification alters skeletal muscle structure so that it is more responsive to exercise and better resists the loss of muscle density common in zero-gravity environments. While this does not eliminate the effects of long-term zero-gravity living, it does improve long-term health and does provide assistance in adjusting to higher gravity environments.

As a side-effect, when applied to a person in a normal or high gravity environment the DNAM will aid in the production of muscle mass, giving a bonus +1 to STR in normal gravity environments, and +2 in high gravity.

People from zero-gee environments who have this DNAM shift their homeworld gravity category from Zero-gravity to Light.

This DNAM helps to avoid muscle and bone loss on long space voyages, granting DM+4 to Zero-G muscle atrophy checks. See *The Worlds of 2300AD* page 101 in the Hostile Environments chapter for more information.

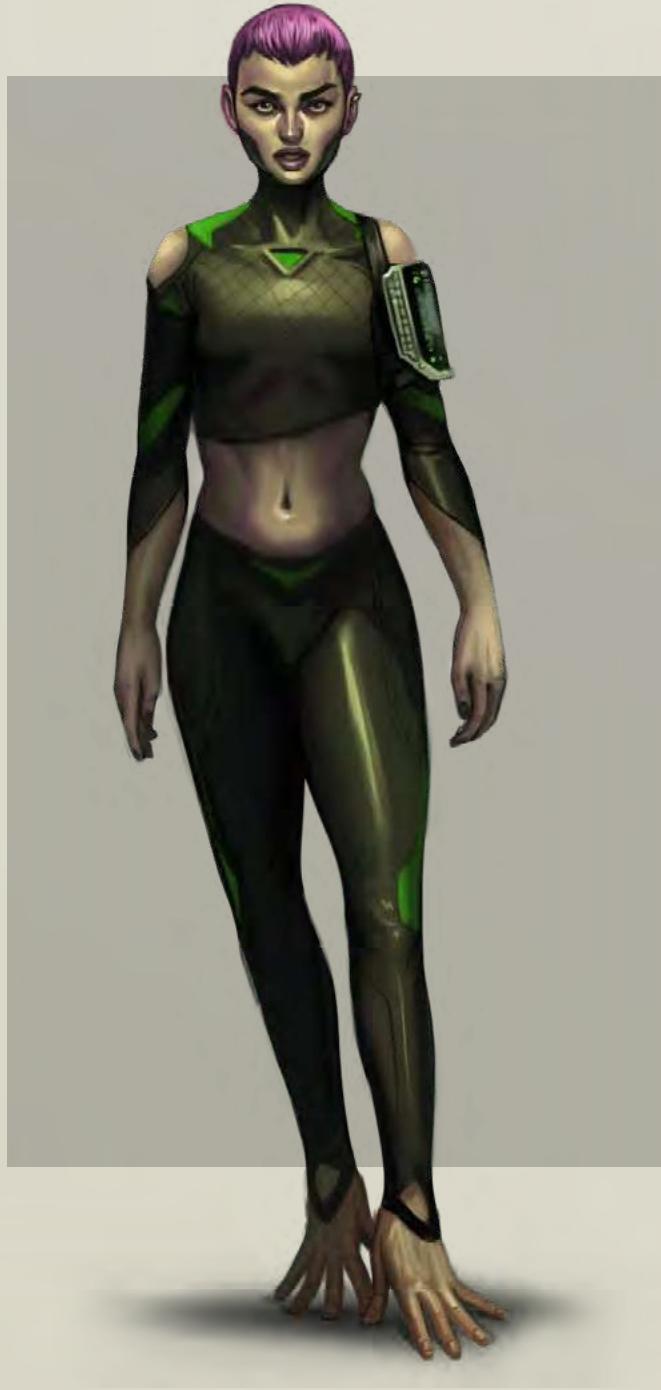
| Modification | TL | Type  | Cost   |
|--------------|----|-------|--------|
| Free Fall    | 10 | Minor | Lv6000 |

## FREE FALL (MORE HANDS)

As one of the oldest DNAMs in use, several variants of this modification have been produced. The most common variant is the More Hands, sometimes referred to as 'the Monkey's Paw'. It is more common among Belters and even Libertines. The More Hands modification turns the recipient's feet into a pair of hands, complete with opposable thumb.

The shape of these feet-hands is somewhat uncomfortable to walk on and the recipient reduces their speed by -1 metre when walking on a solid surface under Low-gravity or higher. All other effects of this DNAM are the same as the common PAX/DLX modification.

| Modification           | TL | Type  | Cost   |
|------------------------|----|-------|--------|
| Free Fall (More Hands) | 10 | Minor | Lv9000 |



## PLANETARY ENVIRONMENTAL ADAPTATION (PEA)

In recognition of how Frontier life offers challenges outside the realm of Core world experience, colonists typically receive this standard package. Each package is tailored to a specific world to address its Planetary Adaptation Syndrome. This modification gives the Traveller DM+4 to all PAS checks for the world for which it was designed.

Not all worlds have a PEA modification. Any world settled since 2270 or so will likely not have a PEA developed and there are a few worlds where the effects of PAS are either extremely minor or non-existent and do not require a genetic rewrite.

All other modifications designed for planetary environments also have the benefits of the PEA modification.

| Modification | TL | Type  | Cost   |
|--------------|----|-------|--------|
| PEA          | 10 | Minor | Lv7500 |

### SRR-564 LUT HOT WEATHER ADAPTATION

Some worlds are too warm for human comfort. Named for the hottest region found on Earth, the Lut hot weather adaptation increases height, darkens the skin and includes some minor water-saving measures, although as extensive as the dry world adaptation.

Travellers are rewritten to have DM+3 on checks to resist the effects of hot weather. Conversely, it imparts DM-2 to resist the effects of cold weather. They also need very little water, about 500 millilitres per day. This adaptation is combined with the PEA where applicable.

| Modification           | TL | Type  | Cost    |
|------------------------|----|-------|---------|
| Hot Weather Adaptation | 10 | Minor | Lv14000 |

### TRITON ULTRA

One of the most severe adaptations available, Triton Ultra is adapted for life in deep, cold oceans. It is a relatively-common modification in deep-water cities on Earth, along with some Frontier worlds. This modification is not an update to the PEA modification and does not include those changes. Tritons on Earth face significant bias outside of the underwater cities.

The Triton adaptation creates a being capable of living comfortably underwater, yet able to interact on land as well and the modification is legal in the Core.

This DNAM provides the Aquatic/2, Enhanced Senses and Tough (+2) traits, along with the same resistance to cold as the Cold Weather Adaptation. Travellers can breathe indefinitely underwater if the water is artificially oxygenated ('fizzy water').

| Modification | TL | Type  | Cost    |
|--------------|----|-------|---------|
| Triton Ultra | 12 | Major | Lv45000 |

## OTHER DNA MODIFICATIONS

### GENDER REASSIGNMENT

DNA modification for gender reassignment was one of the earlier DNA modifications produced and is the only one commonly available in the Core. For some of the elite, it has become a bit of a fad, termed 'gender-hopping'. Although it is listed as a Major modification, it does not interfere with the ability to breed with baseline humans. Gender-changed individuals are fully-capable of bearing, or siring, children. As this modification introduces no transgenic elements into the recipient's genome, it is far more easily tolerated than other DNAMs and can be applied multiple times with only DM-1 to the END checks. However, if the recipient already has other DNAMs, this modification uses the standard penalties. If this modification is applied before any other DNAM, the subsequent DNAM is treated as the first modification.

| Modification        | TL | Type  | Cost    |
|---------------------|----|-------|---------|
| Gender Reassignment | 12 | Major | Lv55000 |

### RETROGRADE

Strictly speaking, DNAMs cannot be reversed. A retrograde DNAM will remove all existing DNA modifications, with a further DM-2 on the END check for each additional DNAM after the first. Although this modification does not introduce any transgenic elements, the process of repairing the altered genome incurs a similar risk to applying an additional DNAM. The price of Retrograde includes the cost needed to engineer the custom virus to bring the recipient back to baseline standards, unique to each individual.

The Traveller will lose all advantages and complications gained from the DNAM.

| Modification | TL | Type  | Cost     |
|--------------|----|-------|----------|
| Retrograde   | 12 | Minor | Lv120000 |

# SYMBIOTS

Symbionts are genetically-engineered micro-organisms designed to co-exist within a Traveller's body and provide environmental support. Symbionts are widely used to combat the effects of PAS on many colony worlds and are used in micro-gravity environments as well. The restriction on the creation of new human-scale DNAMs does not extend to symbionts, as they do not create super-humans.

In many cases, symbionts straddle the line between the Hard Path and the Soft Path. They are often seen as just another tool to adjust environmental conditions, especially the varieties used to help maintain health in zero-gee. At the same time, the growing divide between the Hard Path and the Soft Path, fuelled by the Gene Riots and the Moratorium, makes it likely that even symbionts will come to be rejected by those who favour the Hard Path.

There are a wide variety of symbionts available, injected, ingested or inhaled, depending on their function. While they are engineered to avoid rejection or allergic reaction, there is a small possibility that they can have adverse effects.

The Traveller being infected with a symbiont must make an Easy END (4+) check (+Medic skill of attendant). Injected symbionts inflict DM-1 on this check, while ingested symbionts grants DM+1. Failure indicates that the Traveller has rejected the symbiont. This check is made each time an attempt is made to infect with the symbiont. If a new check is made within 48 hours of a failed infection attempt, it is made with DM-2.

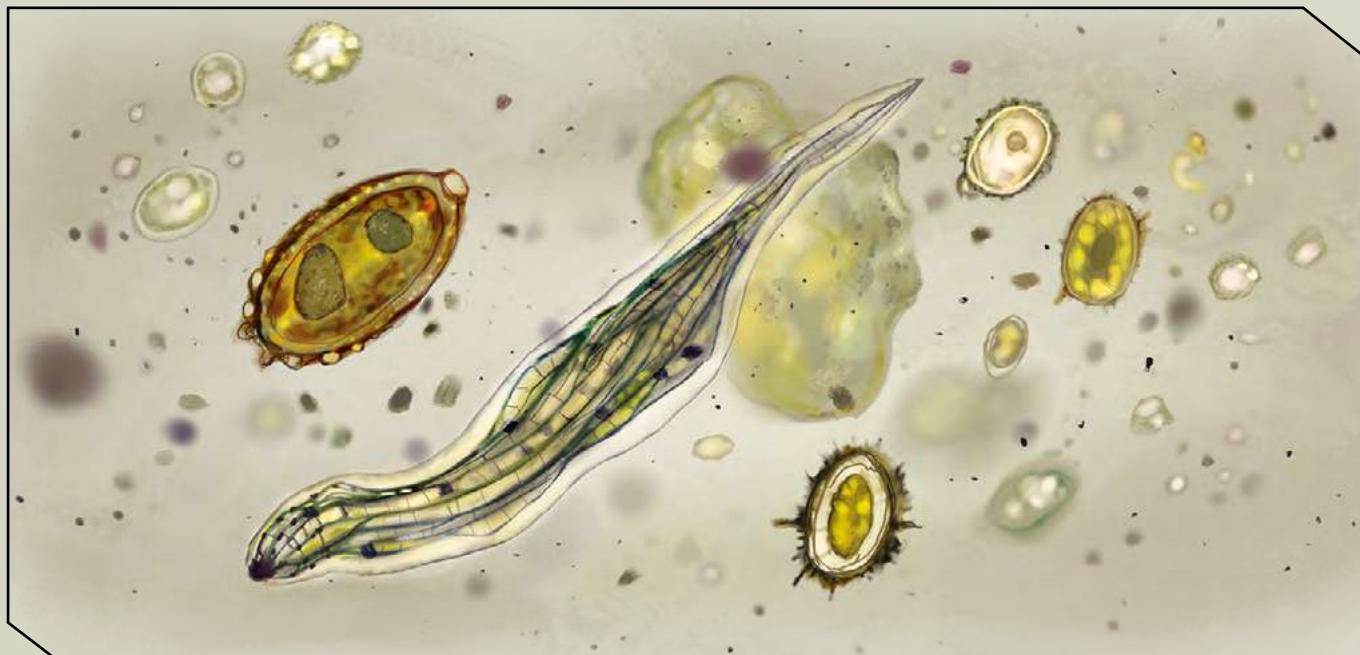
## ARTERIAL MAINTENANCE SYMBIONT (AMS)

The only multi-cellular symbiont, blood cleaners are engineered rotifers that clean the major blood vessels, removing fatty deposits and helping maintain arterial health. Blood cleaners grant DM+2 to aging rolls. They are considered a vital part of an anagathic regimen.

| Symbiont             | TL | Delivery | Cost   |
|----------------------|----|----------|--------|
| Arterial Maintenance | 12 | Injected | Lv2000 |

## ATMOSPHERIC FILTER SYMBIONT (AFS)

These symbionts are inhaled and live in the lungs. Each type is designed to neutralise a specific atmospheric toxin, like sulphur (on King), micro-pollen (on Nibelungen) and a variety of others. There are no varieties designed to neutralise toxins that affect a person through skin contact. Atmospheric filter symbionts will die if removed from the environment.



engineered for, so anyone going off-world would have to re-infect themselves upon returning. AFS grants DM+2 to PAS checks.

| Symbiont           | TL | Delivery | Cost  |
|--------------------|----|----------|-------|
| Atmospheric Filter | 11 | Inhaled  | Lv200 |

### BLOOD CLOTTING AGENT (BCA)

Although initially developed to assist with issues around the hyper-charged cardio-vascular systems of people with the King Ultra DNAM, the BCA has found use across the Frontier as the improved clotting capability can reduce severity of injuries. However, use of BCA is monitored, as the increased clotting can increase the risk of stroke and certain cardio-vascular diseases.

BCA reduces damage from wounds by one point. It also eliminates the wound severity penalty for the King Ultra DNAM (see page 31).

| Symbiont             | TL | Delivery | Cost  |
|----------------------|----|----------|-------|
| Blood Clotting Agent | 11 | Injected | Lv800 |

### CALCIUM FIXING SYMBIONT (CFS)

This blood-borne symbiont helps reduce the rate of bone decalcification in low and micro-gravity environments and is one of the more common in production, used for any spaceflight over a week in duration. Belters and others who permanently reside in micro-gravity environments will use this symbiont to address some of the health risks and give them a slightly easier transition to higher gravity environments should this be necessary.

However, once out of a micro-gravity environment, the CFS will continue to fix blood-borne calcium to bone, which can result in bone irregularities. Consequently, the CFS is usually removed by a targeted anti-microbial agent.

| Symbiont                | TL | Delivery | Cost  |
|-------------------------|----|----------|-------|
| Calcium Fixing          | 11 | Injected | Lv500 |
| Targeted Anti-Microbial | 11 | Injected | Lv100 |

### DIGESTIVE ENHANCING SYMBIONT (DES)

The structural and chemical makeup of plant and animal matter on colony worlds can be different enough to make digestion difficult. The DES is targeted to help break down this material more effectively and either make it more digestible or allow it to be eliminated without great discomfort. The DES is developed for specific worlds and grants DM+1 on PAS checks, in addition to any modifiers from DNA modification or other symbions. DES can have some side-effects, especially within the first month or so after ingestion, including gastric distress.

| Symbiont            | TL | Delivery | Cost   |
|---------------------|----|----------|--------|
| Digestive Enhancing | 9  | Ingested | Lv1000 |

### VITAMIN SYNTHESISING SYMBIONT (VSS)

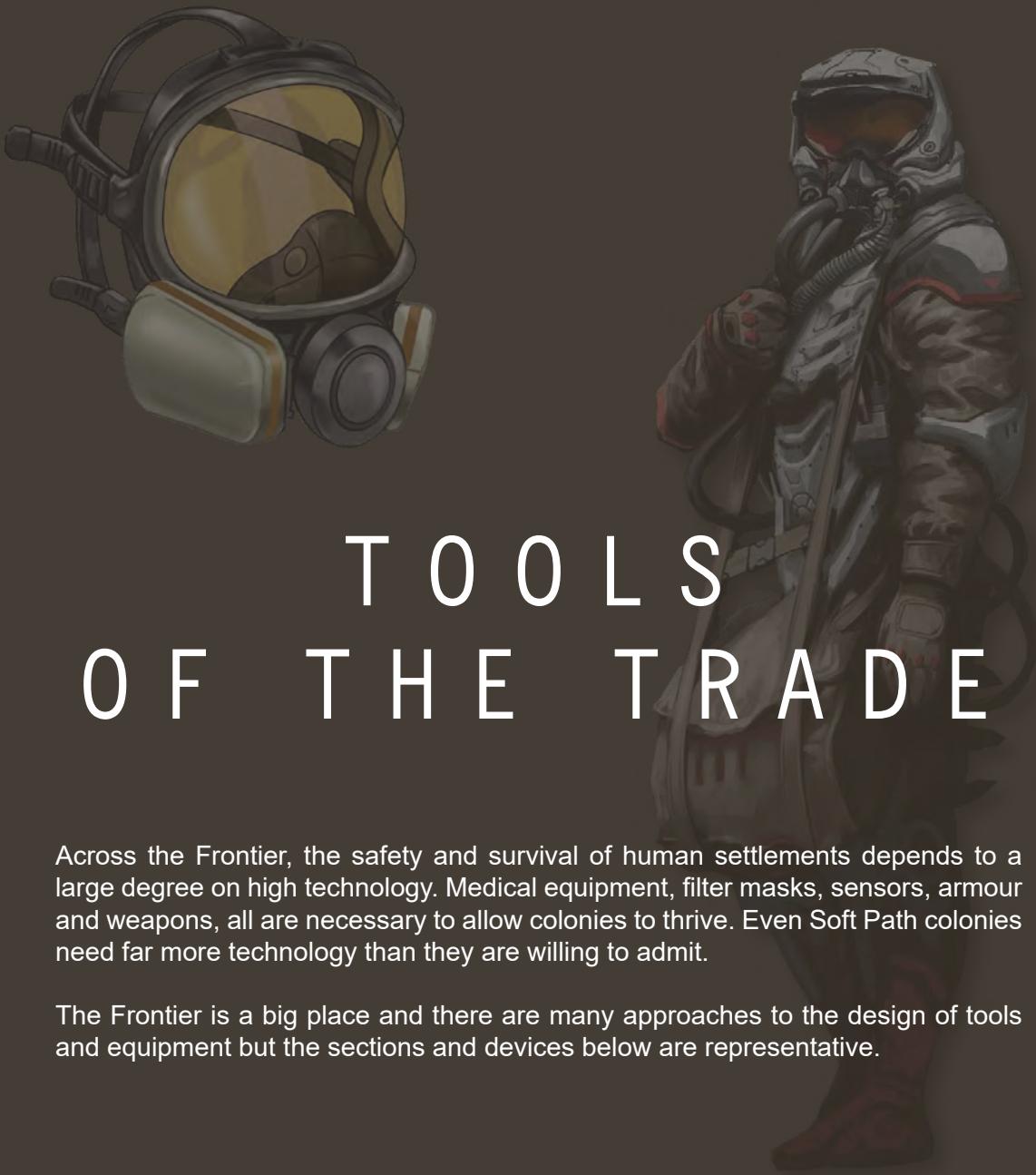
On some colony worlds, specific nutrients (in particular some vitamin groups) are simply not available. Humans do not have the ability to synthesise most vitamins (vitamin D excepted) and so the VSS was developed.

Each required vitamin needs a separate VSS and so a Traveller could be host to several of these agents. As a gut-dwelling organism, VSS is more vulnerable to being passed out of the system or accidentally-destroyed by antibiotics. For this reason, these symbionts need to be monitored, as their disappearance could make a colonist very sick, very quickly. The vitamin B complex group of vitamins is the most commonly missing group on the Frontier worlds, followed closely by vitamin C and vitamin K.

VSS grants DM+1 to PAS checks.

| Symbiont             | TL | Delivery | Cost  |
|----------------------|----|----------|-------|
| Vitamin Synthesising | 10 | Ingested | Lv400 |





# TOOLS OF THE TRADE

Across the Frontier, the safety and survival of human settlements depends to a large degree on high technology. Medical equipment, filter masks, sensors, armour and weapons, all are necessary to allow colonies to thrive. Even Soft Path colonies need far more technology than they are willing to admit.

The Frontier is a big place and there are many approaches to the design of tools and equipment but the sections and devices below are representative.

## Currency in 2300AD

The French Empire is the most powerful economy in human space. This economic clout has made the French Livre the most common internationally-traded currency in the world, accepted almost everywhere.

When converting values, 1 Livre (Lv1) in 2300AD = Cr1 from *Traveller*.

Using this conversion rate, you will find that many items of appropriate Tech Level can be used from other *Traveller* publications, such as the *Central Supply Catalogue*.

# WILDERNESS EXPLORATION AND SURVIVAL GEAR

Wilderness survival gear includes equipment usually used by exploratory teams but it might also be stored in a starship's escape pod or used by a military team. It could also be used by hikers and wilderness adventurers in the Core, but is liable to be much higher priced as a recreational item, and available in designer fabrics and colours.



## Autograpnel

The autograpnel consists of a handheld battery-powered compressor unit, which can fire a small grapnel as high as 20 metres in the air, then pull as much as 100 kilograms up the trailing rope. The battery is rechargeable and good for 20 uses.

| Item        | TL | Kg | Cost  |
|-------------|----|----|-------|
| Autograpnel | 10 | 7  | Lv660 |

## Backpack

This is a large, external-frame backpack used to carry and protect equipment and supplies, while keeping hands free. Small items can also be suspended from its frame. Using this, most fit Travellers can easily carry their STR x 5 in kilograms within normal gravity.

| Item     | TL | Kg | Cost |
|----------|----|----|------|
| Backpack | 10 | 1  | Lv75 |

## Climbing Kit

A climbing kit includes such tools as pitons, 100 metres of fine rope, small hammers and carabiners. Use of the climbing kit grants DM+2 to all Athletics checks made while climbing.

| Item         | TL | Kg | Cost  |
|--------------|----|----|-------|
| Climbing Kit | 10 | 2  | Lv500 |

## Cold Weather Clothing

This is a lightweight, adjustable body suit with hood, goggles and lower face cover. The suit contains a battery pack and internal heating elements with the ability to maintain a stable temperature in cold environments. Battery life is about eight hours under the coldest conditions but closer to 36 hours in more typical cool weather. Travellers wearing this suit take no damage under Arctic conditions (-25° Celsius) and only 1D per two hours under Martian (-50° Celsius) conditions.

| Item                  | TL | Kg | Cost  |
|-----------------------|----|----|-------|
| Cold Weather Clothing | 10 | 3  | Lv600 |



## Compact Rations

Each ration pack is a complete, pre-packaged, fortified meal in its own serving tray. The meal is self-heating (or self-chilling) as required. The chemical heating/cooling process is activated by breaking the seals and takes about 30 seconds. The quality of these meals can vary from blandly palatable to gourmet quality, although higher-quality offerings are often served aboard commercial starships.

In military parlance, these are known as SSMs (Single-Serving Meals) and are the bane of any soldier's existence, despite generally being of high nutritional quality.

| Item            | TL | Kg | Cost     |
|-----------------|----|----|----------|
| Compact Rations | 10 | 1  | Lv15-150 |

## Diving Gear

The term diving gear is used here to describe a flexible, warm, wetsuit with swim fins, goggles and an air tank and regulator. It requires the Athletics (strength) skill to use effectively and adds 25% to a Traveller's underwater speed.

| Item        | TL | Kg | Cost   |
|-------------|----|----|--------|
| Diving Gear | 8  | 10 | Lv2100 |

## Flares

Flares are used to signal at a distance, such as in the marking of temporary landing areas. They are automatically seen by anyone with a line of sight to them.

| Item              | TL | Kg | Cost |
|-------------------|----|----|------|
| Flares (set of 6) | 10 | 1  | Lv10 |

## Goggles

These goggles are a photosensitive, auto-darkening piece of equipment to protect against steady bright light or sudden flares. They automatically protect against blindness induced by lasers or flares.

| Item    | TL | Kg | Cost  |
|---------|----|----|-------|
| Goggles | 10 | —  | Lv200 |

Daria checked the list again, scrolling it across the display tattooed on her left arm. It was all the stuff the company said she needed to have before she set out for the outpost on Sans Souci. She could just take the free equipment they provided everyone but she had a few *livre* burning a hole in her *Link* since her last job. Given how cold and hostile the outpost was, she opted to purchase a suit of high-end winter survival gear, complete with active heating inserts, fog-free goggles and a mask that pre-heated the air before she breathed it in. She also grabbed a couple of spare high-density power cells, just in case. Each was good for 12 hours, even during the Sans Souci night. Company regs didn't call for weapons, not on this frozen iceball, but she picked up an FC-70 hunting rifle, a Model-57 pistol and a few boxes of shells for both. You never know what you're going to run into.

hours. A larger version has a width of four metres and length of 10 metres, with a life support system good for 120 person-days. Both are self-assembling.

| Item                 | TL | Kg | Cost   |
|----------------------|----|----|--------|
| Pressure Tent, Small | 10 | 2  | Lv2000 |
| Pressure Tent, Large | 11 | 30 | Lv5000 |



Large Inflatable Shelter



Small Inflatable Shelter



Pressure Tent

### Inflatable Shelter, Large

The Large inflatable shelter provides shelter for up to eight, with four sleeping rooms. The shelter also is equipped with a large common room, a pair of work/storage rooms and an enclosed area that can be used as a fresher.

| Item                     | TL | Kg   | Cost   |
|--------------------------|----|------|--------|
| Large Inflatable Shelter | 10 | 1000 | Lv5000 |

### Inflatable Shelter, Small

The small inflatable shelter has room to comfortably house four people, with two sleeping rooms, a common room, storage and an enclosed room that can be used as a fresher. With an airlock added it can be a standalone structure but is often connected to a vehicle.

| Item                     | TL | Kg  | Cost   |
|--------------------------|----|-----|--------|
| Small Inflatable Shelter | 10 | 500 | Lv2000 |

### Pressure Tent

A small pressure tent is an inflatable hemispherical structure with a radius of two metres. The tent includes a small airlock along with a life support system good for 12 person-days (i.e. 12 people for one day or one person for 12 days). The airlock can be detached for use on worlds with breathable atmospheres. It is powered by a solar panel built into the roof but if that is obscured has power for 12

## Respirator

Often an entire protective suit is unnecessary and unwieldy. In such situations, Travellers commonly use a respirator mask to filter the air they breathe. Typically, the filters in such a mask must be changed every 6 to 12 hours, depending upon the amount of pollutants in the air. The mask grants DM+1 to END checks involving atmospheric taints.

| Item               | TL | Kg | Cost   |
|--------------------|----|----|--------|
| Respirator         | 10 | 1  | Lv1000 |
| Replacement Filter | 10 | —  | Lv15   |



*Water Purifier*

*Respirator*



## Thermal-Visual Camouflage

Thermal-Visual camouflage consists of two parts: the camouflage smock, or blanket itself, and a thermal regulation system that can adjust heat output to match the surroundings. Typically, it does this by redistributing heat patterns around the material to break up the thermal signature and dumping excess heat into the regulator. The chill can of the regulator is good for up to eight hours before it needs to be replaced.

The camouflage smock or blanket is essentially a tough, flexible sheet of electronic paper, which can change its colours and patterns to match surrounding terrain without light emissions. This system is only effective at medium to long ranges and only if the Traveller keeps still. It does not work well at all on the move. The camouflage grants DM+6 to all Stealth checks if the Traveller does not move, otherwise it only grants DM+1.

| Item                     | TL | Kg | Cost    |
|--------------------------|----|----|---------|
| Thermo-Visual Camouflage | 12 | 6  | Lv12000 |

*Thermal-Visual Camouflage*



## Water Purifier

A battery-operated micro-filter and chemical treatment machine for purifying natural water sources. It can also be used to recycle biological waste water.

| Item           | TL | Kg | Cost  |
|----------------|----|----|-------|
| Water Purifier | 10 | 5  | Lv800 |

These tools are commonly available on most colony worlds and outposts. The price is a baseline and can be much higher in some areas and worlds.

# TOOLS

## Basic Tool Kit

The basic tool kit includes small hand tools suitable for a variety of purposes, including wrenches, pliers, screwdrivers and so forth. This allows basic mechanical tasks (not for vehicles or spacecraft) to be performed without a penalty for lacking proper tools.

| Item           | TL | Kg | Cost  |
|----------------|----|----|-------|
| Basic Tool Kit | 10 | 5  | Lv250 |



## Construction Tools

This kit includes non-powered hammers, saws, squares, hatchets, chisels and other woodworking tools. Like the excavating tools, they are essential tools for a new colonist or homesteader.

| Item               | TL | Kg | Cost  |
|--------------------|----|----|-------|
| Construction Tools | 10 | 30 | Lv100 |



## Electronic Repair Tools

This specialised kit includes an assortment of small tools and testers for use on electronic and photonic equipment. It is designed to be connected to a Link phone for processing power.

| Item                    | TL | Kg | Cost   |
|-------------------------|----|----|--------|
| Electronic Repair Tools | 11 | 3  | Lv1000 |



## Excavating Tools

Picks, shovels, mattocks and other such tools. These are an essential part of a new colonist's kit.

| Item             | TL | Kg | Cost  |
|------------------|----|----|-------|
| Excavating Tools | 10 | 20 | Lv200 |



## Locksmith Kit

A locksmith kit contains tools for opening mechanical locks. On most worlds it is illegal for an individual to possess a locksmith kit without a local license. The locksmith kit allows a Traveller to use the Mechanic skill to pick mechanical locks. All locks are rated by the difficulty of picking them and lockpicks by the bonus they add to the Mechanic check. If the locksmith kit



is not available, then there is an additional DM+6 to the skill check. A license to carry a Lockpick set costs Lv100 x local Law Level

| Item                 | TL | Kg | Cost   |
|----------------------|----|----|--------|
| Locksmith Kit (DM+0) | 10 | 2  | Lv500  |
| Locksmith Kit (DM+2) | 10 | 2  | Lv1000 |
| Locksmith Kit (DM+4) | 11 | 2  | Lv1500 |

## Power Hand Tools

This kit includes a selection of rechargeable power tools, including a chainsaw, jigsaw, rotary saw and drill, as well as other small electrical tools, all organised into a rigid kevlex carrying case. The case can be used to convert the hand tools into stationary tools, including a table saw, scroll saw and drill press. These kits normally come with two rechargeable battery packs but spares can also be purchased; an electrical power source is required to recharge the batteries. A battery pack typically lasts for five hours before needing to be recharged.

| Item                | TL | Kg  | Cost  |
|---------------------|----|-----|-------|
| Power Hand Tools    | 10 | 35  | Lv450 |
| Replacement Battery | 10 | 0.5 | Lv20  |



## Vehicle Maintenance Tools

Specialised tools for repair and maintenance of vehicles. This kit includes torque wrenches, grease guns, engine calibration tools and other specialised tools. Use of these tools grant DM+1 to all Mechanic checks made on vehicles and aircraft, but not spacecraft.

| Item                      | TL | Kg | Cost  |
|---------------------------|----|----|-------|
| Vehicle Maintenance Tools | 10 | 10 | Lv400 |



## Electronic Security System Kit

An electronic security system kit is not intended to provide electronic security but to circumvent it and is usually even more illegal to own than a locksmith kit. The electronic security system kit allows the use of the Electronics (computers) skill to crack electronic locks. Electronic locks are rated by the difficulty required to circumvent them and security system kits are rated by the bonus they add to the Electronics (computers) check to bypass them. A licence for an Electronic Security System Kit costs Lv200 x local Law Level.

| Item                                  | TL | Kg | Cost   |
|---------------------------------------|----|----|--------|
| Electronic Security System Kit (DM+0) | 10 | 3  | Lv1500 |
| Electronic Security System Kit (DM+2) | 10 | 3  | Lv3000 |
| Electronic Security System Kit (DM+4) | 11 | 3  | Lv4500 |



# SPECIAL EQUIPMENT

Major expeditions and military teams are often able to acquire equipment that is state-of-the-art and unavailable to the general populace of Frontier worlds. However, this specialised equipment can often be found for sale on the Core worlds, at least to those able to pay the price.

## Spinner

Utilising some of the same technologies used in construction of the beanstalk, the spinner creates exceptionally strong carbon monofilament line. The 0.1mm line is capable of supporting up to 1,000 kilograms in normal gravity. Care has to be taken with the line when it is under tension, as the extremely thin cable can easily slice off fingers or even limbs. The spool of line, located in a cartridge forward of the pistol grip, contains approximately 2,000 metres of the 0.1mm line. The spinner is equipped with a wire blade capable of cutting the line, along with a supply of 20 special pads to handle the cable. If stretched taut, the cable can inflict up to 3D damage and ignores non-rigid and inertial armours.

| Item    | TL | Kg | Cost   |
|---------|----|----|--------|
| Spinner | 12 | 1  | Lv3000 |

## Stik-kit

A Stik-kit ('Gekkocott' in Europe) is a disposable adhesive patch about the size of a human hand. One side of the patch (colour-coded black) is a ridged, flexible plastic sheet; the other side is smooth and white. Between these two sides is a chemical interior. By grasping the ridged side, the user can flex the patch, releasing the chemical onto the white side, which then becomes very sticky. Note that the Stik-kit is not a conventional adhesive; rather, it utilises the van der Waals force, much like a gecko (thus the European name). Stik-kits will adhere to almost anything, except PTFE plastics like teflon, in almost any environment. A small electric charge deactivates the adhesive – a battery is included in the Stik-kit for this purpose. Stik-kits are not reusable.

Stik-kits can be used for anything from patching hulls to mounting wall fixtures, creating ladders, joining items or suffocating creatures. Each Stik-kit patch

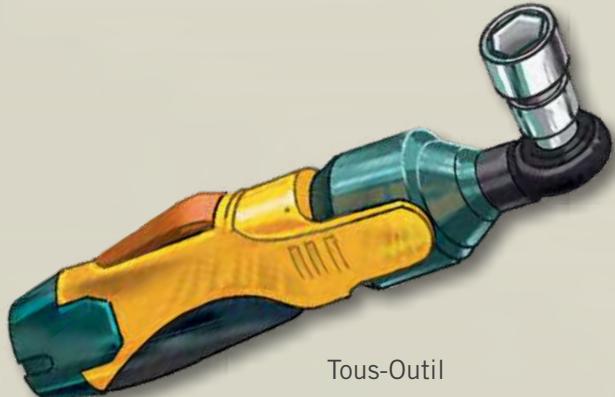
has a colour-coded band that indicates its holding strength: red 10g, orange 100g, yellow 1kg, green 10kg, blue 100kg, violet 1 ton, ultraviolet 10 tons. Ultraviolet strength patches are only available to properly accredited clients.

| Item                   | TL | Kg   | Cost   |
|------------------------|----|------|--------|
| Stik-Kit, red          | 11 | 0.25 | Lv20   |
| Stik-Kit, orange       | 11 | 0.25 | Lv40   |
| Stik-Kit, yellow       | 11 | 0.25 | Lv80   |
| Stik-Kit, green        | 11 | 0.25 | Lv160  |
| Stik-Kit, blue         | 11 | 0.25 | Lv320  |
| Stik-Kit, violet       | 11 | 0.25 | Lv640  |
| Stik-Kit, ultra-violet | 11 | 0.25 | Lv1000 |

## Tous-Util

In recent years, builders of new vehicles, especially those in the French sphere of influence, have agreed to use a uniform set of fasteners in their manufacturing processes. The Bessieres consortium is a leading proponent of this innovation. For work on these vehicles, a mechanic need not have several different types of wrenches and screwdrivers; they just need a Tous-Outils (multi-tool). This is a self-powered unit with a flexible head that automatically adjusts to fit the precise fastener size. Tous-Outils come in three gauges; most vehicles constructed at TL11 are designed for use with the Tous-Outils. Light vehicles only need the smallest gauge, while heavy vehicles typically require all three. The Tous-Outils grants DM+1 to all Mechanic checks made for repairs.

| Item                | TL | Kg  | Cost  |
|---------------------|----|-----|-------|
| Tous-Outils, Light  | 11 | 0.5 | Lv180 |
| Tous-Outils, Medium | 11 | 1   | Lv260 |
| Tous-Outils, Heavy  | 11 | 2   | Lv350 |



Tous-Util

# SENSORS

Sensors are available for a wide-range of purposes, from simple binoculars to computer-controlled perimeter surveillance systems.

## Basecamp Security Sensor

This is a multipurpose active/passive sensor suite designed to provide warning against intruders at remote sites. It must be attached to a vehicle power plant or other power source in order to function. It has effective Recon 2 to detect intruders. The basecamp security sensor has a range of 500 metres for ground targets and five kilometres for aerial targets. It cannot sense targets approaching from underground or underwater.

| Item                     | TL | Kg | Cost    |
|--------------------------|----|----|---------|
| Basecamp Security Sensor | 11 | 50 | Lv20000 |

## Binoculars

Visual binoculars that incorporate thermal imaging for night visibility and limited visibility in fog, gyro-stabilisation for high magnification steadiness and adjustable magnification from 1x through 50x. Some models are equipped with a light-intensification system and passive or active ranging systems. Most can be tripod-mounted as well.

| Item                  | TL | Kg     | Cost   |
|-----------------------|----|--------|--------|
| Binoculars            | 10 | 1      | Lv120  |
| Light Amplification   | 10 | 0.5 kg | +Lv400 |
| Passive Range Finding | 10 | —      | +Lv100 |
| Active Range Finding  | 10 | —      | +Lv200 |

## Large Life Form Detector

This is an IR sensor, which works as well on vehicles as actual life forms. Its short range makes it largely ineffective for military purposes, however, and is instead designed to be cheap and portable for zoological field teams. It grants DM+1 to Recon checks made to spot anything warmer than the ambient background temperature, with a range increment of 100 metres.

| Item                     | TL | Kg | Cost  |
|--------------------------|----|----|-------|
| Large Life Form Detector | 10 | 2  | Lv300 |

## FarSeer

The FarSeer is a brand of binoculars that incorporates both active and passive rangefinding and light amplification in one sturdy, armoured housing. The FarSeer typically costs Lv800.

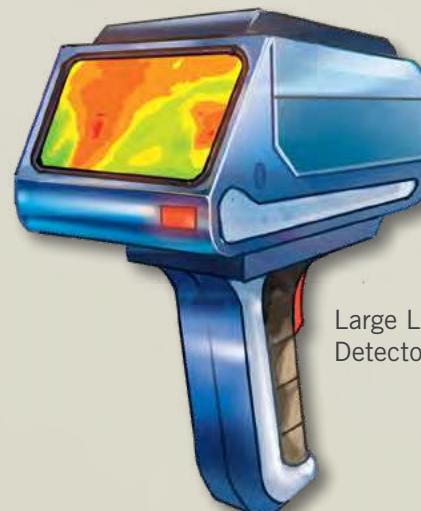
## Superconducting Electromagnetic Sensor (SCEMS)

The SCEMS system is capable of detecting any sort of electromagnetic energy, from the firing of vehicle spark plugs to the burst of a gauss weapon. It provides a rough guide to direction and range, along with the source's relative strength. Equipment and weapons can be shielded against SCEMS detection but it is expensive (Lv500 + double the cost of the weapon or device). The SCEMS has a range of 1,000 metres.

| Item  | TL | Kg | Cost   |
|-------|----|----|--------|
| SCEMS | 11 | 5  | Lv5000 |



Binoculars



Large Life Form Detector

# SCIENTIFIC EQUIPMENT

A variety of equipment is available to aid scientific teams in their work. The most common items are listed here.

## Imager

While Link phones serve as cameras for day-to-day tasks, dedicated imagers can provide far more detail and a greater range of features. They see use in professional work, such as reporting and scientific observations. Given the storage densities in common use, a scientific team will often mount a couple on headgear or remote-operated shoulder mounts and just leave them to run. Many police forces use a similar technology to record an officer's entire shift.

Most imagers can produce high-quality stills and videos. While on-board storage is considerable, most imagers make use of removable storage chips. Each chip can store roughly 24 hours of Super-HD quality or roughly 500,000 petabit-quality stills. Extra storage chips cost Lv5.

Most imagers include GPS sensors and a Link connection, although police imagers typically have the Link connection disabled to prevent their records from being hacked.

| Item   | TL | Kg | Cost  |
|--------|----|----|-------|
| Imager | 11 | 1  | Lv300 |

## Portable Lab

The portable lab can only be used towards one scientific specialisation, selected at time of purchase. Use of the lab in the field grants DM+1 to research-based checks.

Portable labs are not available for all specialisations. Models are typically available for archaeology,

biology, chemistry, physics, planetology and xenobiology. All portable labs require a portacomp in addition to the lab itself.

| Item         | TL | Kg | Cost    |
|--------------|----|----|---------|
| Portable Lab | 11 | 15 | Lv10000 |

## Remote Meteorological Station

A small data collection station for monitoring rainfall, humidity, atmospheric pressure, wind speed and direction, and other meteorological and climatological data. These are generally cheap, unmanned sensors designed to transmit to a base station, although these data-links are often unreliable. As a backup, they also record data on a memory chip. Each chip can record three years' worth of data before it starts to overwrite old files. These are very useful in the early stages of a survey of a habitable world and for every 10 remote meteorological stations deployed on a planet, add DM+1 to checks that determine planetary climate (maximum DM+4).

| Item                          | TL | Kg | Cost  |
|-------------------------------|----|----|-------|
| Remote Meteorological Station | 10 | 1  | Lv550 |

## Sampling Kit

A small kit carried by means of a shoulder strap used to take field samples and conduct quick analysis of any of a variety of substances. Sampling kits are available for soil, minerals, plants and gas (atmosphere).

| Item         | TL | Kg | Cost   |
|--------------|----|----|--------|
| Sampling Kit | 10 | 4  | Lv1200 |

## Stracher 'Jaeger' Autoinjector Gun

Sometimes called a tranq gun, this is a compressed-air rifle, which fires an autoinjector or radio micro-transponder, normally used to subdue or tag animals. The radio micro-transponder has a range of five kilometres and can be monitored from a radio direction finder. It broadcasts a simple electronic noise signal useful for determining direction and range. The associated direction finder weighs 1.5 kilograms and costs Lv50.

| Weapon                  | TL | Range | Damage | Kg  | Cost  | Magazine | Magazine Cost | Traits |
|-------------------------|----|-------|--------|-----|-------|----------|---------------|--------|
| Jaeger                  | 8  | 50m   | 2D     | 2.2 | Lv500 | 4        | Lv10          | Stun   |
| Micro-transponder Darts | 8  | —     | —      | —   | —     | 4        | Lv20          | —      |

# MEDICAL EQUIPMENT

In high-risk employment, violence and injury are a part of life, if not commonplace. However, in the 24th Century, high quality medical aid is often very close at hand.

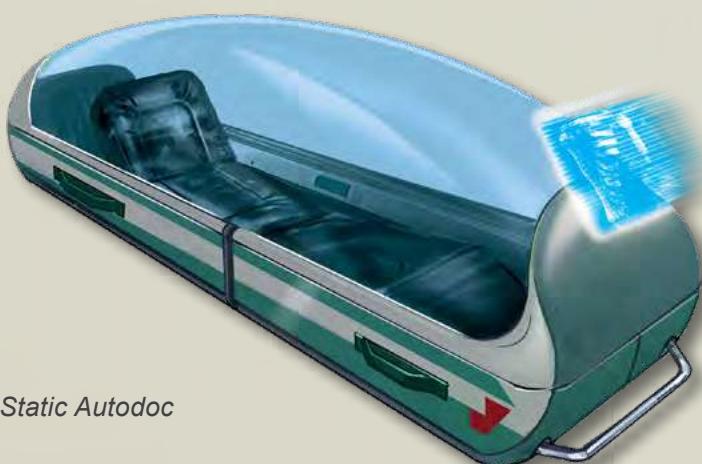
## Assistive Exoskeletons

Assistive exoskeletons are used to assist people in walking and interacting with their environment when they otherwise would be unable to do so. People with nerve damage, paraplegics and those operating in much heavier gravity regimes are all users of this technology. At best, an assistive exoskeleton will give its wearer capabilities similar to a healthy adult. It can also help carry heavy equipment and sees some military use for this purpose. However, the limited power supply of these machines limits their usefulness in extended deployments.

Assistive exoskeletons are rated by STR, which is added to the Traveller's STR. These exoskeletons cannot boost STR higher than 15.

A load-bearing exoskeleton grants no additional STR but allows a Traveller with mobility issues to move in their native gravity environment. It provides support for mobility and allows an otherwise mobile Traveller to carry 50% more without fatigue, so it does have some military uses.

Note that these exo-skeletons only help with movement. For assistance with brittle bones or cardiovascular problems, other therapies must be employed.



Static Autodoc

| Exo-Type     | Power   | Duration | Mass  | Cost    |
|--------------|---------|----------|-------|---------|
| Load-bearing | 6 hours |          | 8 kg  | Lv8000  |
| STR +2       | 4 hours |          | 10 kg | Lv12000 |
| STR +4       | 2 hours |          | 18 kg | Lv20000 |
| STR +6       | 1 hour  |          | 32 kg | Lv35000 |

## Lightweight Autodoc

Portable and inexpensive, this unit is popular with emergency teams and often used in large numbers for disaster relief. Military units will often have several deployed at the company level. Use of a portable autodoc boosts all healing rates by four times and adds DM+1 to all Medic checks. In the absence of a qualified human operator, the autodoc can operate with Medic 2 and INT or DEX +1.

| Item                | TL | Kg | Cost   |
|---------------------|----|----|--------|
| Lightweight Autodoc | 11 | 45 | Lv6000 |

## Medkit

This is a portable first aid kit containing spray-on bandages and other field dressings, along with various tools like crash scissors, scalpels and an autoinjector. The kit contains vials of antishock, antitoxin, antibiotic, stimulant and anaesthetic for use with the autoinjector. Given a modicum of medical skill, the medkit contains everything needed to treat minor injuries and stabilise serious conditions.

| Item   | TL | Kg | Cost  |
|--------|----|----|-------|
| Medkit | 10 | 1  | Lv800 |

## Static Autodoc

This static autodoc is designed for permanent emplacement in a hospital ward or on a starship. Use of a static autodoc boosts all healing rates by six times normal and adds DM+2 to all Medic checks. In the absence of a qualified human operator, the autodoc operates with Medic 2, INT 10 and DEX 10.

| Item           | TL | Kg    | Cost    |
|----------------|----|-------|---------|
| Static Autodoc | 12 | 1,000 | Lv25000 |

# DRUGS

## Interferon-Gamma

This is a potent anti-viral drug. In addition to combating viral diseases, it has other uses. If administered within 24 hours of infection by a DNAM retrovirus, Interferon-Gamma can stop it before any significant alterations happen. If administered after this time period, the interrupted process may give rise to cancers and teratomas.

| Item             | TL | Kg  | Cost   |
|------------------|----|-----|--------|
| Interferon-Gamma | 11 | 0.1 | Lv2000 |

## MetabolX

MetabolX is the name used by DeLambe et Frere for their line of metabolism-modifying drugs.

MetabolX Alpha slows the metabolism down by a factor of 10 and is often used for long journeys as a way to reduce supply consumption. It cannot be used indefinitely, however. MetabolX Beta slows the metabolism down by a factor of 100 and is often packed with spacecraft lifeboats as a kind of emergency hibernation kit. After about a week, however, a body under the influence of Beta starts to consume muscle tissue for survival, reducing STR by -1 for each additional week it is used.

MetabolX Omega, on the other hand, greatly increases the body's metabolism and is used to speed healing. For these purposes the Traveller being treated is usually put into an induced coma for the day the drug takes to run its course. A day of MetabolX Omega feels like two weeks has passed, with concomitant healing and recovery effects.

| Item           | TL | Kg | Cost   |
|----------------|----|----|--------|
| MetabolX Alpha | 11 | —  | Lv1000 |
| MetabolX Beta  | 11 | —  | Lv4000 |
| MetabolX Omega | 11 | —  | Lv750  |

## Phiadrenaline-19

This drug is used as a targeted treatment for anaphylaxis and similar severe allergic reactions, with minimal side-effects. As an adrenaline-analogue, it causes mild shakes and tremors, and can make the heart race (DEX -1 and END -1) but the effects wear

off after about 20 minutes. Phiadrenaline grants DM+4 to END checks made to resist severe allergy attacks and anaphylactic shock.

Phiadrenaline-19 is typically sold in single single-dose dispensers. These dispensers use a compressed-air injector that does not require a needle, although it needs skin contact.

| Item                       | TL | Kg  | Cost  |
|----------------------------|----|-----|-------|
| Phiadrenaline-19 Dispenser | 10 | 0.1 | Lv200 |

## Radox

This drug can mitigate the effects of radiation exposure, at least to some extent, if it is administered within five minutes of exposure. Radox has the effect of reducing the radiation dose by 200 rads. It cannot be used to remove accumulated radiation exposure, only acute exposure.

| Item           | TL | Kg  | Cost  |
|----------------|----|-----|-------|
| Radox Injector | 12 | 0.1 | Lv400 |

## Vasopressin-Y

This drug allows the human brain to modify its electrical pathways, which will make it easier for a Traveller to learn new topics and recall things that they have already learned. Due to its addictive effect, this drug is usually used by those beginning major projects and who can quit after the project's completion. While common in the Core, this drug is comparatively rare on the Frontier and price can be up to 10 times that listed here.

The drug must be taken in a daily dose for two full weeks for any effect. After that, the Traveller's INT characteristic will increase by D3.

If the Traveller remains on the drug for one month or less, they will suffer no side effects. For every month thereafter, they will lose one point of END, regained at the rate of one point per week after no more Vasopressin-Y has been taken. If a Traveller's END reaches zero, they will slip into a catatonic state. To quit taking Vasopressin-Y, the Traveller must make a Difficult (10+) END check. This can be retried once per week.

| Item          | TL | Kg  | Cost          |
|---------------|----|-----|---------------|
| Vasopressin-Y | 11 | 0.1 | Lv50 per week |

# COMMUNICATIONS

Communicators allow the transmittal of information over long distances. Civilian models tend to be lower powered and broadcast in a wider arc than do their military counterparts.

## Backpack/Vehicle Communicator

This is a heavier version of the hand communicator. In a vehicle it is normally linked to a vehicle's power plant, although it can operate from a portable power supply as well. The backpack model can be used as a data and video relay, as well as voice. It has a 200 kilometres range.

| Item                  | TL | Kg | Cost  |
|-----------------------|----|----|-------|
| Backpack Communicator | 10 | 3  | Lv300 |

## Hand Communicator

A battery-powered, handheld radio that broadcasts voice signals at relatively low power. Hand comms usually have some additional features, like voice recorders and transponders. They can relay data and video but available bandwidth is low. They have a range of 20 kilometres.

| Item              | TL | Kg  | Cost |
|-------------------|----|-----|------|
| Hand Communicator | 10 | 0.1 | Lv90 |

## Link Phone

A link phone connects to the networks and data services available on many advanced colony worlds, although typically only in cities and nearby regions. Link phones also serve as small computers (computer/1), game-playing devices, cameras, flashlights, voice recorders and GPS systems. They have a range of five kilometres.

Data access costs are equal to the UCP/UNP Telecommunications code x Lv5 per month

| Item       | TL | Kg  | Cost |
|------------|----|-----|------|
| Link Phone | 11 | 0.2 | Lv50 |

## Tight Beam UpLink

A tight beam communicator designed to provide secure communication between a ship in low orbit and a ground party, automatically tracking the ship or

satellite linked to it. When activated, the UpLink will point its small dish antenna toward the location of the ship and establish a tight beam communication link, provided the ship is above the horizon and in effective communication range. Two UpLinks can be used for secure ground transmissions if a communications satellite is overhead and if both UpLinks are connected to the satellite at the same time.

UpLinks allow high-bandwidth data connections, along with voice and video. It has a range of 200 kilometres, but on line of sight only.

| Item              | TL | Kg | Cost  |
|-------------------|----|----|-------|
| Tight Beam UpLink | 10 | 10 | Lv500 |



*Hand Communicator*



*Tight Beam UpLink*

# COMPUTERS

Computers make up a part of daily life for citizens of the Core worlds in the 24th Century, and are an essential part of nearly every mission group.

## Computer Programming

Low-level computer programming is an automated process; most programs can be produced just by describing the input, the processing and the results, and then checking the computer's sample outputs. Programs created this way are somewhat slower and consume much more in the way of system resources, than professionally-designed programs. Code-optimisation is a major industry for freelancers and other technical experts. Expert systems are extensively used and computers have replaced humans in many roles, in sales for example, but there is a niche for human creativity, intuition and problem-solving in all industries and organisations. Expert systems help in medical diagnosis and treatment recommendations but trained human doctors and nurses still spot things machines miss, as well as providing the human touch so vital in healing and recovery.

## The Link Network

The Link is a massively-redundant network, with no single points of failure. Data is stored in a virtual cloud, with every connected device donating a portion of their capacity to holding encrypted fragments of data. Again, in this way, there are no single points of failure, so losing a data-centre is inconvenient rather than disastrous.

While the Link is composed of sites, or channels, in a similar fashion to the old World Wide Web, it is no longer a free network. Base monthly data charges provide access to the most common channels at minimal cost, while access to premium channels, applications and meta-bases requires appropriate increases in pricing. Most applications do not exist 'on' a computer system but rather in the Link itself.

This has created a thriving black market in illicit data access, theft of accounts and spoofing of legitimate channels. The best hackers can live quite well by accessing high-level accounts and selling data to the highest bidders using illicit channels.

## Computer Viruses

The massively-connected nature of the Link network means it is vulnerable to certain types of malicious programming, including viruses. However, most computers are designed in such a way that they are not nearly as vulnerable as those of the pre-Twilight Era. Viruses and hacking still do occur, however, and when successful the impact can be enormous.

The so-called 'hel-Link' is a set of low-bandwidth channels that piggybacks alongside legitimate channels and provides a venue for these data thieves to hawk their wares. The actual transfer of data generally takes place over the higher bandwidth commercial networks, disguised as innocent transfers of data.

## Computer Workstation

Full-powered computer stations are not very common, as the sheer computing power they make available is unnecessary in most areas of life. These are portable systems far more powerful than any early 21st Century supercomputer and are found in research centres, hospitals and clinics, and industrial facilities. They can also be found as independent units aboard spacecraft and exploration vehicles. Workstations interact easily with any others on the same network, allowing information to be freely accessed from one unit by any other.

These machines have considerably more power at their disposal than a portacomp, although the demands on these resources typically run much higher as well. Most homes do not have full-size workstations, instead using a network of machines similar in power to a portacomp. In an emergency, a workstation could serve as a ship's computer, although it lacks the hardening and redundancy of ship-board systems.

A workstation is a computer/5 system.

| Item                 | TL | Kg | Cost   |
|----------------------|----|----|--------|
| Computer Workstation | 11 | 5  | Lv2500 |

## Portacomp

The portacomp is a small handheld programmable computer, usually carried in a plastic case on the belt or on a shoulder strap. Most portacoms are of the 'slate' variety, a lightweight touch-screen device designed to accept a variety of inputs, from touch-screen to voice to external keyboards, and even neural connections. All are equipped with multiple cameras and many have internal projectors to allow wall-sized projection.

Most of these machines are designed to run up to five memory/program chips, using the ubiquitous Digits operating system. For most purposes, internal storage is effectively unlimited. All portacoms are designed to make use of local Link networks when available and data charges are similar to those for a Link phone. Other models include wearable computers accessed via voice commands or neural jacks and even models built into clothing. Many vehicles have an onboard computer with capabilities similar to a portacomp.

The typical portacomp is a computer/4 system.

| Item      | TL | Kg  | Cost  |
|-----------|----|-----|-------|
| Portacomp | 11 | 0.5 | Lv300 |

## Portacomp Program/Memory Chips

These chips contain a greater volume of data than a small library. This is sufficient to provide an excellent working linguistic translation program or comprehensive reference guide for a single area of scientific specialisation. A scientific reference chip does not make the user an expert in a field; however, any more than a pile of chemistry reference books makes the owner an expert chemist. A blank chip costs Lv1. The storage available on a chip is effectively unlimited for most purposes other than experiential recordings.

### LANGUAGE CRACKER

A program that will analyse a spoken or written language and attempt to discover contextual similarities between it and the native language of the program. This is a slow and painstaking process with considerable trial and error involved. The language cracker chip confers DM+2 to Science (linguistics) checks. The language cracker chip also allows a Traveller to learn a language without a native speaker.

### REFERENCE GUIDE

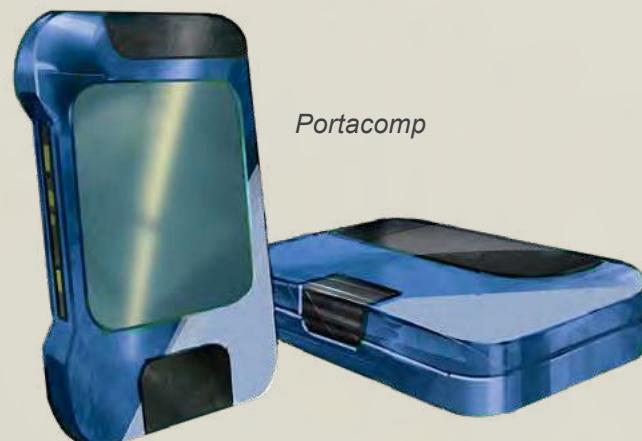
A comprehensive reference guide on any one subject is available on chip for a modest price. Possible subjects include (but are not limited to): biochemistry, physics,

chemistry, geology of any well-explored world, political history of the Earth (or any other inhabited world) and so on. The skill level of these guides is equal to their Bandwidth and available for any Science or Profession skills. Using these guides doubles any time required for checks but allows the Traveller to add the guide's level. Use a reference guide also allows an unskilled Traveller to attempt a skill with only a penalty of DM-2, rather than the usual DM-3. Time for the check is tripled, however.

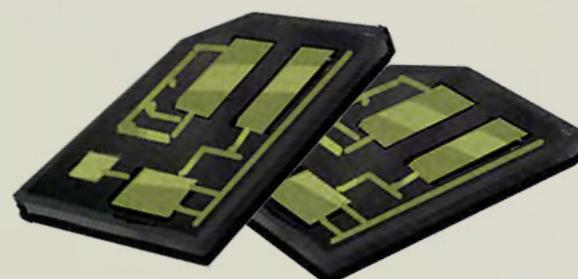
### TRANSLATION CHIP

This chip will translate spoken or written known languages. It is purchased with two complete languages on the chip (English/German, or Tajik/Farsi, for example) and will translate from one to the other at command. This program can also provide near-real-time translation of voice input, with a three to five second delay at most.

| Software         | Bandwidth | TL | Cost                |
|------------------|-----------|----|---------------------|
| Language Cracker | 4         | 12 | Lv1200              |
| Reference Guide  | 1-4       | 10 | Lv400 per Bandwidth |
| Translation Chip | 1         | 11 | Lv1000              |



Portacomp



Program/Memory Chip

# PERSONAL POWER

The most common portable power generators are described here.

## Fuel Cell

The portable fuel cell is used to provide power in many wilderness situations and is often used in concert with the fuel station. The fuel cell runs for 10 hours on a full load of fuel, equivalent to Power 1.

| Item      | TL | Kg | Cost   |
|-----------|----|----|--------|
| Fuel Cell | 10 | 25 | Lv1000 |

## Fuel Station

A solar-powered processor that produces electricity from sunlight and then uses it to crack water into hydrogen for vehicle fuel. The complete station consists of a central unit and 10 solar panels, along with a hydrogen tank. Each solar panel unfolds into a flat square 10 metres x 10 metres, requiring a space of 20 x 50 metres in order to fully deploy the station.

The station can also be used to produce direct electrical power while the sun is shining, equivalent to Power 2.

Light vehicles require 30 minutes per Hull point to refuel, while heavy vehicles require one hour per Hull point.

| Item         | TL | Kg  | Cost   |
|--------------|----|-----|--------|
| Fuel Station | 10 | 220 | Lv3500 |



# INDUSTRIAL EQUIPMENT

## Fabricators

Fabricators use powdered metals and ceramics to rapidly 'print' parts and models. The metals and ceramics are subjected to a chemical/heat curing process and are then ready to use. Although the parts are not quite as strong as the original, the ability to produce any spare part while in the field makes them incredibly useful. Most vehicles sold on the Frontier come with a chip containing a complete set of specifications that allow practically any spare part to be created. Note that fabricators do not make complete devices, only individual parts or non-functional 3D models. It is possible to create all the parts of a more complicated device on a fabricator and then assemble it by hand. However, most fabricators have controls built into their firmware to prevent them from being used to make parts for weapons. Of course, military fabricators do not have these constraints and fetch very high prices on the black market. All spacecraft workshops contain the equivalent of a light industrial fabricator.

## Black Market

### Fabricators

Fabricators are advanced 3D printers that can be used to create simple devices. Consumer-grade machines cannot reproduce electronics, although more advanced devices can. Fabrication technology is heavily-controlled, with all devices sold equipped with interlocks to prevent them from printing pirated or illegal content. The black market for unlocked fabricators is very lucrative and many colonies have opted to not ask too many questions about the source of their industrial fabricators.

### Light Industrial Fabricator

Possibly the most common type of fabricator, found throughout human space in the hands of colonists and technicians everywhere. The software and firmware controls on these models are the most restrictive, as they are large enough to turn out parts for assault weapons and various copyrighted technology. Military fabricators are the same size but lack some of the firmware controls. This model can create objects up 100cm x 100cm x 30cm, sufficient for most replacement parts. It takes approximately 10–15 minutes to print out an average size part on this device.

| Item                        | TL | Kg  | Cost   |
|-----------------------------|----|-----|--------|
| Light Industrial Fabricator | 10 | 220 | Lv7500 |

### Small Fabricator

Suitable for making small parts and models, this fabricator can create objects up to 15cm x 15cm x 15cm. It takes approximately two to three minutes to print out an average size part on this size of device.

| Item             | TL | Kg | Cost  |
|------------------|----|----|-------|
| Small Fabricator | 10 | 8  | Lv100 |



## Cargo Handling Equipment

Cargo handling equipment can be found at warehouses and spaceports across human space and exo-loaders form the basis for a number of different machines used in a variety of industrial and commercial roles.

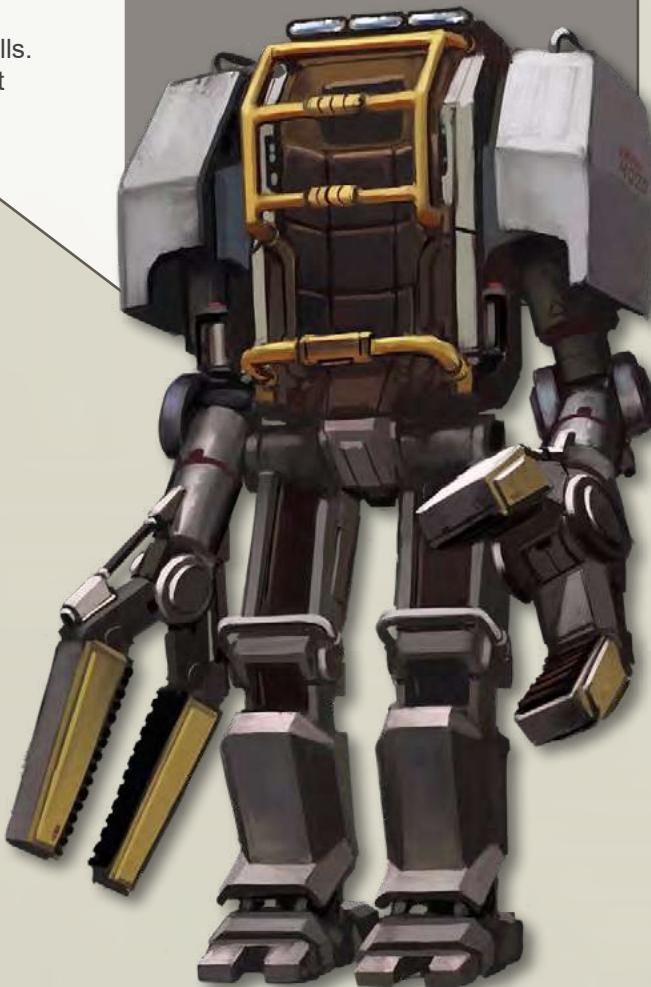
### PICHOT 4020

#### **HEAVY MATERIALS HANDLER HUMAN PHYSICAL ANALOGUE TOOL**

The Pichot 4020 HMHPAT, usually called simply ‘Hump-it’, is a heavy-duty relative of the assistive exoskeletons in use across human space. It was originated in Australia, by Pichot Industries, and has since found widespread use in America as well.

The Hump-it looks something like an oversized human skeleton, with arms and legs, and a torso cage to protect the operator’s head and body. The operator climbs into the cage, rests their weight on the seat, places their feet into the feet of the Hump-it and their hands onto the controls near the far end of the arms. When the operator moves their limbs, the Hump-it moves its limbs in response but enhances the operator’s movement, allowing them to lift 15 times as much weight as they could unassisted. Walking is made simple through gyrostabilisers and automatic locks that virtually prevent falls. The long arm span of the Hump-it allows the operator to lift objects up to two metres across.

|                |                  |
|----------------|------------------|
| TL             | 10               |
| Skill          | Drive (walker)   |
| Agility        | +2               |
| Speed (cruise) | Very Slow (Idle) |
| Range (cruise) | 57 (84)          |
| Crew           | 1                |
| Passengers     | —                |
| Cargo          | —                |
| Hull           | 1.5              |
| Shipping       | 0.75 tons        |
| Cost           | Lv25000          |



#### Armour

|       |   |
|-------|---|
| Front | 3 |
| Sides | 3 |
| Rear  | 3 |

#### Traits

Open Vehicle

#### Equipment

Control System (enhanced),  
Fire Extinguishers,  
Manipulator Arms  
(improved, STR 15, DEX 7) x2

#### Equipment

|                                    |   |
|------------------------------------|---|
| Autopilot (skill level)            | — |
| Communications (range)             | — |
| Navigation (Navigation DM)         | — |
| Sensors (Electronics (sensors) DM) | — |
| Camouflage (Recon DM)              | — |
| Stealth (Electronics (sensors) DM) | — |

# Explosives

The most prevalent non-combat explosives in the 24th Century are industrially-produced blocks of plastic explosive. These blocks are all of a uniform mass, one kilogram, but their explosive power varies. The most commonly used is Plastique-9. Multiple blocks of this explosive can be used together to create larger explosions or a single block can be broken down to a fragment of its size for smaller blasts. On less-advanced worlds old-fashioned dynamite, relatively easy to manufacture, is produced for local use.

Explosives are typically set off with a detonator cap, which is set off by radio control from any portacomp or link phone with the correct software and security settings. This software is only available to individuals with a valid local explosives permit.

Possession of explosives requires a local license on most worlds and penalties for noncompliance are severe.

## Dynamite

Traditional 'sticks' of dynamite are relatively easy, if somewhat hazardous, to manufacture. They require another explosion or heat to set them off and, under certain conditions, can become very unstable.

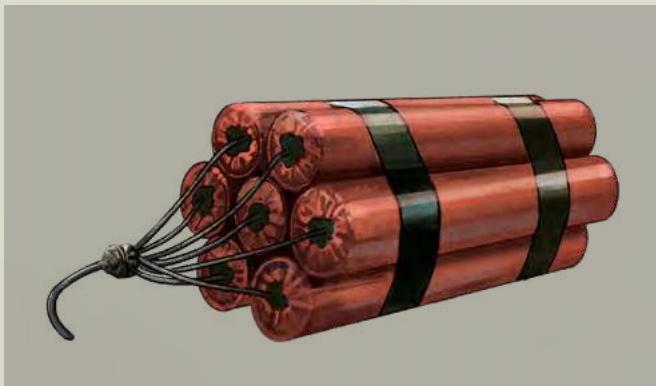
## Plastique-9

This mouldable putty-like explosive requires an electrical detonator; lighting it on fire or shooting it will not make it explode. It is safe to handle and leaves no residue behind.

| Item          | TL | Damage | Kg | Cost | Traits  |
|---------------|----|--------|----|------|---------|
| Dynamite      | 5  | 4D     | 1  | Lv20 | Blast 8 |
| Detonator Cap | 4  | —      | —  | Lv5  | —       |

| Item        | TL | Damage | Kg | Cost  | Traits   |
|-------------|----|--------|----|-------|----------|
| Plastique-9 | 10 | 5D     | 1  | Lv100 | Blast 10 |
| Detonator   | 10 | —      | —  | Lv10  | —        |

| Software          | Bandwidth | TL | Cost   |
|-------------------|-----------|----|--------|
| Detonator Control | 1         | 10 | Lv1000 |



# PENTAPOD EQUIPMENT

Pentapod analogues exist for much of the equipment listed in this chapter but are not widespread. If an analogue is available (determined by the referee), it costs at least twice as much as normal equipment but will last for many years since, as a living creature, it self-repairs. Rough treatment will kill a Pentapod analogue but this would as easily break human equipment.

## Biocontacts

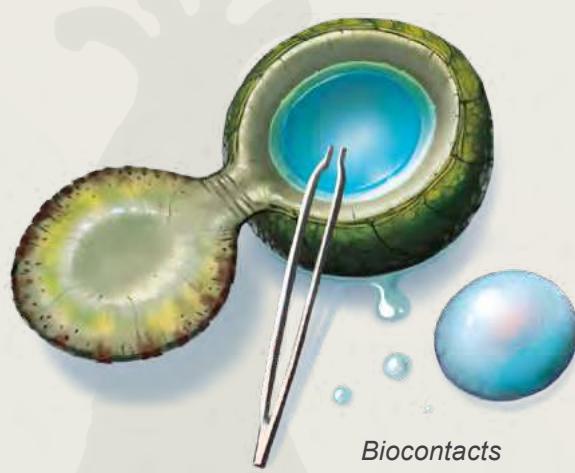
These were among the first Pentapod mass-produced bioengineered products for human consumption, widely distributed at low prices as a marketing experiment and a means of developing a distribution system for future products. Biocontacts are transparent lenses worn in

the eye, dormant and opaque when purchased. The Traveller must insert them, keep their eyes closed and remain at rest for eight hours to activate the contacts. This is normally done during a sleep period as they adapt to body chemistry.

Once activated, the biocontacts are specific to the Traveller and will not function for anyone else. They can be removed and stored or kept in the eyes indefinitely (they allow oxygen to pass freely to the cornea). Biocontacts draw nourishment from the Traveller's own tears and so must be stored in a special nutrient solution if not kept in the eyes.

Biocontacts grant the wearer enhanced infrared vision (used as night vision) and squinting will give up to a 5x magnification.

| Item       | TL | Kg | Cost  |
|------------|----|----|-------|
| Biocontact | 16 | —  | Lv500 |



*Water Breather*



## Biosampler

The biosampler is the most successful Pentapod product mass-produced for human consumption. It is an animal biochemically similar to a human, programmed to determine edibility of plant and animal tissue, and communicate that information to the Traveller. Communication is simple: if it eats the material, it is safe, if it refuses, it is toxic.

Although its appearance is unimportant to its function, the Pentapods have, in one of their few marketing successes, made it soft and furry, and programmed a limited pattern of semi-random behaviour to make it more appealing. This pattern becomes predictable after long viewing but the creatures have become popular as children's pets on many Frontier worlds. The Pentapods release a new version every few years, differing only cosmetically from previous models. However, few people are willing to 'upgrade' their biosamplers for these newer versions.

| Animal           | Hits           | Speed |
|------------------|----------------|-------|
| Biosampler       | 3              | 3m    |
| <b>Skills</b>    | Survival 3     |       |
| <b>Attacks</b>   | None           |       |
| <b>Traits</b>    | Small (-3)     |       |
| <b>Behaviour</b> | Omnivore/Eater |       |
| <b>Mass</b>      | 0.5kg          |       |
| <b>Price</b>     | Lv50           |       |

## Water Breather

In late 2299, the Pentapods released a new product for sale to humans, the water breather. It is a shelled creature that fits tightly to a human face, with a clear section over the eyes, a tube that projects into the mouth and an expandable sac at the chin. The sac expands as the Traveller exhales and contracts as they inhale. Meanwhile, the creature filters oxygen and food out of the surrounding water and exudes it into the sac, while filtering carbon dioxide out of exhaled air. If the breather is to be kept out of water for more than an hour, it must be placed in its water-filled carrying case or it will dry out and die. If taken off while in water, it will begin to slowly swim around in a circle.

Water breathers are very popular for casual diving but some fear the results of tearing the sac while working at deep levels. Others feel suffocated by a living creature covering their face. Still others are convinced the water breathers are part of some dark Pentapod plot.

| Animal           | Hits                | Speed |
|------------------|---------------------|-------|
| Water Breather   | 3                   | 2m    |
| <b>Skills</b>    | Survival 1          |       |
| <b>Attacks</b>   | None                |       |
| <b>Traits</b>    | Small (-3), Aquatic |       |
| <b>Behaviour</b> | Omnivore/Eater      |       |
| <b>Mass</b>      | 0.5kg               |       |
| <b>Price</b>     | Lv300               |       |



# MELEE WEAPONS

Although not used often in combat, melee weapons are very common in criminal circles and will do the job when nothing else is available.

## Axe

A long-handled tool used for chopping and splitting wood.

## Ceramic Knife

The ceramic knife is a tanto-style long knife made out of high-density ceramic. It is as strong as steel but sharp as glass and remains sharp longer than a steel weapon.

## Club

Any sort of heavy, blunt object used as an improvised weapon.

## Katana

This Japanese-style longsword is renowned both for its quality and its connection to the ideal of the samurai.

## Knife

A basic hunting or utility knife, not typically balanced for throwing.



| Weapon        | TL | Range | Damage | Kg  | Cost   | Traits |
|---------------|----|-------|--------|-----|--------|--------|
| Axe           | 10 | Melee | 3D     | 2   | Lv280  | Bulky  |
| Ceramic Knife | 10 | Melee | 3D     | 1   | Lv150  | AP 2   |
| Club          | 10 | Melee | 2D     | 1   | —      | —      |
| Katana        | 10 | Melee | 3D+3   | 2   | Lv1200 | —      |
| Knife         | 10 | Melee | 1D+1   | —   | Lv10   | —      |
| Hatchet       | 10 | Melee | 2D+2   | 1   | Lv250  | —      |
| Long Sword    | 10 | Melee | 3D     | 1   | Lv400  | —      |
| Short Sword   | 10 | Melee | 2D     | 1   | Lv100  | —      |
| Wakizashi     | 10 | Melee | 2D+2   | 1   | Lv800  | —      |
| Wire Knife    | 12 | Melee | 3D     | 0.3 | Lv200  | AP 10  |

| Weapon      | TL | Range | Damage | Kg  | Cost  | Magazine | Magazine Cost | Traits |
|-------------|----|-------|--------|-----|-------|----------|---------------|--------|
| Shock Baton | 10 | Melee | 2D     | 1   | Lv320 | 20       | Lv20          | Stun   |
| Shock Glove | 10 | Melee | 3D     | 0.4 | Lv250 | 10       | Lv30          | Stun   |
| Sick Stick  | 11 | Melee | 2D+2   | 1   | Lv550 | 20       | Lv20          | Stun   |

## Hatchet

A small, short-handled axe used for camping. Can be thrown.

## Longsword

Typical of long-bladed slashing weapons, such as the Cold Mountain Demon-sword.

## Shock Baton

While intended for police and prison work, short versions of these weapons are favoured by muggers and thieves. The power cell is inserted in the base of the baton and is good for 20 shocks.

## Shock Glove

Shock gloves have much the same effect as the shock baton but are more likely to be used by security guards and the military. To the casual observer, they look like a pair of heavy workgloves but a closer look will reveal all the electrical contacts of the stun system. The power cells are arm-mounted and connected to the gloves by a ribbon cable on the back of the hand.

## Shortsword

A short-bladed weapon, like a machete.

## Sick Stick

The sick stick is a prisoner/riot control device. When it touches a target, a modulated electrical pulse is discharged into the victim, making them nauseated and often violently ill.

A sick stick is treated in a similar way to a stunner. However, once struck, the target will start vomiting. Once their END reaches 0 they are incapacitated by their retching but will start to recover within five minutes. The power cell is inserted in the base of the stick and is good for 20 shocks.

## Wakizashi

This Japanese-style shortsword is almost always made as a pair with the longer katana.

## Wire Knife

The wire knife was originally designed as a cutting tool for the beanstalk and tether projects. The blade consists of an elliptical loop of single-fibre hyperdiamond, doped with superconducting ceramic. When an electrical charge is passed through the blade, the superconductor holds it rigid. With power turned off, the loop of wire can be retracted into the handle. Although hyperdiamond is very strong, the single-fibre strand, when held rigid by the charge, is relatively fragile and can be snapped by high-density objects.



Katana

Longsword

Wakizashi



Shock Baton



Wire Knife



Shock Glove



Sick Stick

# FIREARMS

There are three types of projectile weapons in general use by humanity in the 24th Century: conventional firearms, binary propellant firearms and gauss weapons.

## Conventional Firearms

Conventional firearms fire a fixed caseless round, with the bullet embedded in a solid cylinder of propellant. Virtually all civilian guns, and all handguns, are conventional firearms. Most major militaries switched from conventional firearms to either binary or gauss weapons but some still maintain conventional weapons for their simplicity, especially in colonial militias and police forces.

## Binary Propellant Firearms

Binary propellant ammunition consists of the bullet itself and a separate set of gas propellants. The propellant mixes are separately inert but when injected into the firing chamber combine explosively to propel the round. The main advantage is that compressed gases are much less bulky than conventional rounds and an individual soldier can carry more ammunition.

## Gauss Weapons

Gauss rifles are linear magnetic accelerators that fire fin-stabilised flechettes. Typically, the magazine for the gauss rifle also contains a battery pack that powers the gun. The long shape of the flechettes makes them unsuitable for spin stabilisation, so gauss weapons are not often used in airless environments.

Virtually all rifles incorporate basic optical sights. Also, as damage potentials have increased, weapons have incorporated more elaborate recoil-absorbing features. Most long-range rifles also have a laser range finder, which can be used in conjunction with computer-controlled fuses on some propelled grenades to improve accuracy.

## Current Service Rifles

The following rifles are currently being used by major military forces in the 24th century. In addition, weapons using APHE ammo, as well as all gauss weapons, are considered to be using AP ammunition, for the purposes of the variant ammunition available in the *Central Supply Catalogue*.

### Darlan Fabrique FTE-10 (Fusil de Tireur d'Élite-10)

Generally, a French squad contains one FTE-10 sniper rifle to use for long-range engagements. The Fusil de Tireur d'Élite-10 is a very low-signature weapon, which makes it excellent for harassment fire from concealment. The round will have hit its target well before the shockwave of its passage will have reached any observers. The FTE-10 can also penetrate light vehicle armour and hardsuits at reasonable ranges.

Due to its great physical length, the FTE-10 has been nicknamed the 'Kentucky long rifle' among American soldiers. Although long and bulky, the accurate, long-range firepower makes it a useful weapon for any infantry unit.

The FTE-10 comes equipped with a 1,000 metre electronic sight with red-dot, imaging, telescopic, low-light and thermal imaging capabilities.

|                  |  |
|------------------|--|
| Type:            | 10mm gauss sniper rifle  |
| Country:         | France   |
| Length:          | 192cm  |
| Mass:            | 12.5kg   |
| Action:          | Single shot  |
| Ammunition:      | 10x57mm flechette  |
| Muzzle Velocity: | 1,670mps   |
| Magazine:        | 10-round box magazine.<br>Separately loaded 30-round power cell. |
| Magazine Mass:   | 0.5kg  |
| Power Cell:      | 1kg  |
| RoF:             | 50rpm  |



Darlan Fabrique FTE-10

## Giscard FAM-90

### (Fusil Automatique Magnetique 2290)

The standard infantry weapon of first-line French infantry, the FAM-90 gauss rifle fires single shots at high velocity, giving good accuracy. It is designed to fire four-round bursts so rapidly that the fourth has fired before the first leaves the barrel, giving improved controllability. It does not have a full-auto function. The optic sights incorporate a red-dot and ranging and programming options. An HR17 30mm grenade launcher is mounted below the barrel and is designed to fire programmable grenades. The tight four-round burst grants DM+1 to attack rolls.

|                  |  |
|------------------|--|
| Type:            | 4.5mm gauss rifle                              |
| Country:         | France   |
| Length:          | 76cm   |
| Mass (empty):    | 4.5kg  |
| Action:          | Single shot or burst                           |
| Ammunition:      | 4.5 x 25mm flechette                           |
| Muzzle Velocity: | 1,600mps                                       |
| Magazine:        | 80-round box magazine with integral power cell |
| Magazine Mass:   | 0.5kg  |
| RoF:             | 2,000rpm in 4-round burst mode                 |
| Features:        | 30mm integral grenade launcher                 |



Giscard FAM-90

## Rorrtman Sk-19

Now the standard service weapon of the German Army, the Sk-19 is a progressive development of the Traylor Arms M-2 Assault Rifle. The main improvements over the M-2 consist of the substitution of a reliable binary propellant system for fixed cartridges and inclusion of an integral 30mm grenade launcher in the stock below the barrel. The binary propellant system includes a muzzle velocity governor keyed to the fire select switch, patterned after that on the French FAM-90. When on the burst setting, muzzle velocity is considerably reduced giving an extremely controllable auto-fire weapon.

|                  |   |
|------------------|---|
| Type:            | 9mm binary propellant assault rifle   |
| Country:         | Germany   |
| Length:          | 75cm  |
| Mass (empty):    | 4kg   |
| Action:          | Single shot or burst  |
| Ammunition:      | 9x12mm APHE   |
| Muzzle Velocity: | 700mps (burst fire 400 mps)   |
| Magazine:        | 50-round box magazine with separate propellant gas bottle with charge for 600 aimed shots or 200 bursts |
| Magazine Mass:   | 0.5kg   |
| Recharge Bottle  | 0.1kg   |
| Mass:            |   |
| RoF:             | 900rpm  |
| Features:        | 30mm integral grenade launcher  |



Rorrtman Sk-19

| Weapon      | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits              |
|-------------|----|-------|--------|-----|--------|----------|---------------|---------------------|
| FTE-10      | 12 | 1200  | 6D     | 14  | Lv5500 | 10       | Lv60          | AP 10, Bulky, Scope |
| FAM-90      | 12 | 700   | 3D+2   | 4.5 | Lv1700 | 60       | Lv50          | AP 5, Auto 6, Scope |
| Sk-19       | 12 | 400   | 4D     | 4.5 | Lv1320 | 50       | Lv30          | AP 5, Auto 6        |
| Gas Bottles | 12 | —     | —      | 0.1 | Lv100  | 600      | —             | —                   |

## Segetov AS-89 (Avtomat Segetov 2289)

The standard Russian and Ukrainian service weapon, the AS-89 incorporates a reliable optical sight and integral 30mm G2 grenade launcher. The AS-89 is aggressively exported and finds its way into the armies of many poorer nations, along with mercenaries, criminals and terrorists. This rifle cannot make use of computer-controlled programmable grenades without replacing the grenade launcher and sight.

|                  |  |
|------------------|--|
| Type:            | 4.54mm gauss rifle                             |
| Country:         | Russia   |
| Length:          | 73cm   |
| Mass (empty):    | 4kg  |
| Action:          | Single shot or burst                           |
| Ammunition:      | 4.54 x 21mm flechette                          |
| Muzzle Velocity: | 1,530mps                                       |
| Magazine:        | 60-round box magazine with integral power cell |
| Magazine Mass:   | 0.3kg  |
| RoF:             | 800rpm   |
| Features:        | 30mm integral grenade launcher                 |



Segetov AS-89

## Yen Shan State Armory Type-81 Storm Gun

Shortly before the Central Asian War, there was a flurry of interest in man-carried heavy calibre 'storm guns', mostly brought on by Manchuria's adoption of the Type-81. The storm gun was intended to provide light anti-vehicle and anti-bunker fire, and the exploding round was expected to give a good area fire capability. In service, however, the weapon proved disappointing. Although out of service with most Core nations, the Type-81 has received a great deal of interest from colonial militias, especially those unable to afford more expensive support weapons like plasma guns. It includes a basic 400 metres optical scope with a red dot.

|                   |  |
|-------------------|--|
| Type:             | 20mm binary propellant storm gun   |
| Country:          | Manchuria  |
| Length:           | 163cm  |
| Mass (empty):     | 12kg   |
| Action:           | Single shot  |
| Ammunition:       | 20x31mm APHE   |
| Muzzle Velocity:  | 840mps   |
| Magazine:         | 10-round box magazine; separately loaded internal gas bottles with charge for 100 rounds |
| Magazine Mass:    | 2kg  |
| Propellant Bottle | 2kg  |
| Mass:             |  |
| RoF:              | 30rpm  |



Type-81 Storm Gun

| Weapon      | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits              |
|-------------|----|-------|--------|-----|--------|----------|---------------|---------------------|
| AS-89       | 11 | 600   | 3D+1   | 4.3 | Lv1100 | 60       | Lv60          | AP 4, Auto 4, Scope |
| Type-81     | 10 | 400   | 5D     | 16  | Lv2250 | 10       | Lv50          | AP 6, Bulky, Scope  |
| Gas Bottles | 10 | —     | —      | 2   | Lv150  | 100      | —             | —                   |

## Firearms Laws

Each nation and colony has a stated Law Level, which describes, among other things, the legality of classes of weapons. It is possible to own weapons that would be otherwise banned at a certain Law Level but one must show a justified need and purchase the required permits. Permits cost Lv100 per Law Level (so Law Level 8 requires a Lv800 permit), are valid for one year and allow the holder to own weapons one Law Level below that normally permitted.

## Weapon Offenses

Possession of an illegal weapon holds a variety of penalties, based on the Law Level of the nation or world. For low law regions, the penalty will be little more than confiscation of the weapon and a fine (Law Level x Lv500). For more moderate areas, penalties include confiscation, a fine (Law Level x Lv1000) and possible jail time – make a Difficult (10+) Advocate check (EDU, 1D hours) to avoid imprisonment. Jail time is equal to the Law Level, in months. For high law worlds, the same applies, although the fine is Law Level x Lv2000 and there is no check to avoid jail time. Use of a weapon in the commission of a crime will result in automatic jail time, no matter the Law Level.

## Surplus Service Rifles

The surplus service rifles described below are no longer the primary small arms of their countries' military forces. Nonetheless, the weapons are still in widespread use by a number of smaller forces and retain their effectiveness.

### M-2 Assault Rifle

The Traylor Arms M-2 'nine forty-four' assault rifle was one of the most popular weapons of its day in US service and is still a favourite today among paramilitary organisations of the Frontier. Simple and reliable, the M-2 was the first mass-produced weapon to use a 9mm APHE round.

|                  |                                |
|------------------|--------------------------------|
| Type:            | 9mm conventional assault rifle |
| Country:         | USA                            |
| Length:          | 79cm                           |
| Mass (empty):    | 3kg                            |
| Action:          | Single shot or burst           |
| Ammunition:      | 9 x 44mm fixed cartridge APHE  |
| Muzzle Velocity: | 800mps                         |
| Magazine:        | 30 rounds                      |
| Magazine Mass:   | 0.4kg                          |
| RoF:             | 550rpm                         |



M-2 Assault Rifle

| Weapon | TL | Range | Damage | Kg  | Cost  | Magazine | Magazine Cost | Traits              |
|--------|----|-------|--------|-----|-------|----------|---------------|---------------------|
| M-2    | 10 | 500   | 4D     | 3.4 | Lv580 | 30       | Lv15          | AP 5, Auto 3, Scope |

## Stracher SG-77 (Sturmgewehr-2277)

The Sturmgewehr-2277 has long been replaced by more modern weapons in Germany's arsenal; however, this rifle was once widely exported and can still be found in private hands, as well as in the armouries of many smaller armed forces and militias.

|                  |                                  |
|------------------|----------------------------------|
| Type:            | 5.5mm conventional assault rifle |
| Country:         | Germany                          |
| Length:          | 75cm                             |
| Mass (empty):    | 3kg                              |
| Action:          | Single shot or burst             |
| Ammunition:      | 5.5x40mm fixed cartridge ball    |
| Muzzle Velocity: | 1,200mps                         |
| Magazine:        | 40 rounds                        |
| Magazine Mass:   | 0.3kg                            |
| RoF:             | 650rpm                           |



Stracher SG-77



Type-49 Assault Rifle

## Wu-Beijing Type-49 Assault Rifle

The Wu-Beijing Type-49 is a rarity among modern military arms, with its use of the old-style conventional layout, which uses a trigger-magazine-barrel design rather than the more efficient 'bullpup' layout (a magazine-trigger-barrel design).

|                  |                                  |
|------------------|----------------------------------|
| Type:            | 7.5mm conventional assault rifle |
| Country:         | Manchuria                        |
| Length:          | 58cm                             |
| Mass (empty):    | 2.5kg                            |
| Action:          | Single shot or burst             |
| Ammunition:      | 7.5x32mm fixed cartridge ball    |
| Muzzle Velocity: | 880mps                           |
| Magazine:        | 25 rounds                        |
| Magazine Mass:   | 0.2kg                            |
| RoF:             | 650rpm                           |

| Weapon  | TL | Range | Damage | Kg  | Cost  | Magazine | Magazine Cost | Traits        |
|---------|----|-------|--------|-----|-------|----------|---------------|---------------|
| SG-77   | 9  | 400   | 3D     | 3   | Lv650 | 40       | Lv20          | Auto 4        |
| Type-49 | 10 | 300   | 3D+2   | 2.5 | Lv690 | 25       | Lv10          | Auto 4, Scope |



Giscard FC-70



Giscard FC-68

## Civilian Weapons

These are the most common civilian rifles of the 24th Century. Most civilian weapons are conventional firearms, although the SS-7 is a high-powered air rifle.

### Giscard FC-68 (Fusil Chasseur 2268)

The FC-68 was designed with the Frontier colonist in mind and is widely used by French civilians on a variety of worlds. It combines a militaristic bullpup configuration with full-automatic fire, although the round itself is little more than a varmint round. While it is lighter than the FAM-90, the felt recoil and rate-of-fire is similar.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 5mm sporting rifle            |
| Country:         | France                        |
| Length:          | 75cm                          |
| Mass (empty):    | 1.0kg                         |
| Action:          | Single shot or burst          |
| Ammunition:      | 5 x 15mm fixed cartridge ball |
| Muzzle Velocity: | 630mps                        |
| Magazine:        | 70-round box                  |
| Magazine Mass:   | 0.3kg                         |
| RoF:             | 600rpm                        |

### Giscard FC-70 (Fusil Chasseur 2270)

The FC-70 was designed to make use of the large quantities of 7.5mm surplus ammunition available on the open market and low firing cost has made it, and similar rifles, popular. It is widely used both as a target rifle and for medium-sized game hunting.

|                  |                                 |
|------------------|---------------------------------|
| Type:            | 7.5mm hunting rifle             |
| Country:         | France                          |
| Length:          | 102cm                           |
| Mass (empty):    | 3kg                             |
| Action:          | Single shot                     |
| Ammunition:      | 7.5 x 40mm fixed cartridge ball |
| Muzzle Velocity: | 910mps                          |
| Magazine:        | 5-round box                     |
| Magazine Mass:   | 0.2kg                           |
| RoF:             | 120rpm                          |



### Rockwell 12-81 Magnum

Deservedly enjoying a reputation as the most powerful sporting rifle in known space, the 12-81 can only be fired from a rest with the integral bipod extended and even then the provision of an in-stock shock absorber is necessary to avoid injury to the firer. The rifle was originally designed to provide a weapon with a high first-round killing capability against the Beowulf cave dragon and other dracoforms native to that world but has since enjoyed wide use in the armed forces of several nations as a long-ranged sniper rifle.

|                  |                                |
|------------------|--------------------------------|
| Type:            | 12mm big game and sniper rifle |
| Country:         | United Kingdom                 |
| Length:          | 144cm                          |
| Mass (empty):    | 14kg                           |
| Action:          | Single shot                    |
| Ammunition:      | 12 x 81mm fixed cartridge ball |
| Muzzle Velocity: | 1,100mps                       |
| Magazine:        | 6-round box                    |
| Magazine Mass:   | 0.5kg                          |
| RoF:             | 30rpm                          |
| Features:        | Bipod                          |

| Weapon | TL | Range | Damage | Kg   | Cost   | Magazine | Magazine Cost | Traits       |
|--------|----|-------|--------|------|--------|----------|---------------|--------------|
| FC-68  | 9  | 200   | 3D-1   | 1.3  | Lv720  | 70       | Lv20          | Auto 5       |
| FC-70  | 10 | 400   | 3D     | 3.2  | Lv650  | 5        | Lv10          | Scope        |
| 12-81  | 10 | 600   | 5D     | 14.5 | Lv1200 | 6        | Lv40          | Bulky, Scope |

## Stracher SS-7 (Scharfshutzen Modell 7)

The Stracher SS-7 is the only mass-produced air rifle in use as a hunting weapon (although a variety of low-power air rifles are used for recreational target shooting). The weapon is powered by compressed air from a central reservoir, which holds sufficient pressure for 20 shots at high pressure and 30 more at low pressure. The weapon can be recharged by hand but only to the low pressure level. A small, solar-powered compressor is available to accompany the weapon, which enjoys good sales along the French and Manchurian Arms.

|                  |                                  |
|------------------|----------------------------------|
| Type:            | 4mm sporting rifle               |
| Country:         | Austrovenia                      |
| Length:          | 72cm                             |
| Mass (empty):    | 1.0kg                            |
| Action:          | Single shot                      |
| Ammunition:      | 4x35mm flechette                 |
| Muzzle Velocity: | 480mps                           |
| Magazine:        | 20-round box                     |
| Magazine Mass:   | 0.1kg Air Recharge Bottle: 0.5kg |
| RoF:             | 120rpm                           |



Stracher SS-7

Compressor



## Compressor

The compressor can refill the reservoir of the SS-7 to the high-pressure level in two minutes when in direct sunlight or connected to a suitable power source. It is comparatively quiet.

| Item       | TL | Kg  | Cost  |
|------------|----|-----|-------|
| Compressor | 10 | 2.4 | Lv110 |

## Shotguns

Shotguns are conventional firearms, firing large-calibre, low-velocity rounds. They use a consumable rigid case to contain their payload until the weapon is fired. Payloads can include anything from birdshot, which fires many dozens of small metal or ceramic balls, to buckshot, which is a small number of large-diameter metal balls, to slugs and other specialty rounds.

### DunArmCo Close Assault Gun

This fully-automatic shotgun is often used by police and anti-insurgent forces. It is also a common weapon in light attack drones where it is fed from a larger cassette.

|                  |  |
|------------------|--|
| Type:            | 18mm automatic shotgun                             |
| Country:         | Australia  |
| Length:          | 68cm   |
| Mass (empty):    | 3.5kg  |
| Action:          | Single shot or burst                               |
| Ammunition:      | 18 x 60mm fixed cartridge buckshot (9 x 8mm slugs) |
| Muzzle Velocity: | 410mps   |
| Magazine:        | 20-round box                                       |
| Magazine Mass:   | 0.5kg  |
| RoF:             | 500rpm   |

### Stracher 'Wolf' Hunting Shotgun

The Wolf is a classic over/under double-barrelled shotgun, common throughout Europe and the French Arm as a gentleman's hunting shotgun. The Wolf is a luxury item, with its engraved barrel and custom furniture made from wood imported from Beta Canum.

|                  |  |
|------------------|--|
| Type:            | 18mm automatic shotgun                             |
| Country:         | Austrovenia  |
| Length:          | 102cm  |
| Mass (empty):    | 2.2kg  |
| Action:          | Single shot  |
| Ammunition:      | 18 x 60mm fixed cartridge buckshot (9 x 8mm slugs) |
| Muzzle Velocity: | 410mps   |
| Magazine:        | 2-round internal                                   |
| RoF:             | 30rpm  |

### Traylor Model 10 Riot Gun

This short-barrelled weapon comes with a folding stock, and variants of the design are a favourite with colonists on the Frontier, as well as police services throughout human space.

|                          |  |
|--------------------------|--|
| Type:                    | 18mm pump shotgun                                  |
| Country:                 | USA  |
| Length:                  | 96cm   |
| Mass (empty):            | 3kg  |
| Action:                  | Single shot  |
| Ammunition:              | 18 x 60mm fixed cartridge buckshot (9 x 8mm slugs) |
| Muzzle Velocity:         | 428mps   |
| Magazine:                | 9-round tube                                       |
| Mass of 9 loaded rounds: | 0.4kg  |
| RoF:                     | 30rpm  |

| Weapon            | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits |
|-------------------|----|-------|--------|-----|--------|----------|---------------|--------|
| Close Assault Gun | 10 | 80    | 4D     | 4   | Lv1340 | 20       | Lv16          | Auto 3 |
| Wolf              | 9  | 100   | 4D     | 2.2 | Lv2700 | 2        | Lv1           | —      |
| Model-10          | 10 | 80    | 4D     | 3.  | Lv750  | 9        | Lv3           | —      |

## Handguns

As with civilian rifles, a wide variety of handguns can be found in the 24th Century. The weapons shown here represent some of the range of capabilities in these weapons.

The principal types of handguns are revolvers and automatics. Revolvers are fed from a revolving cylinder, while automatics are fed from removable magazines. Automatics are more efficient but revolvers are more reliable. A revolver is carried with the firing pin resting on an empty chamber, which is not possible for an automatic unless the pistol is carried without a round in the chamber, in which case it must have the slide worked to chamber a round from the magazine before firing.

Because of their short range and limited stopping power, pistols are not generally issued to combat troops. Officers often carry a pistol as a badge of rank more than an actual weapon; a combat rifle is usually carried as well. Some troops buy heavy pistols and value them for their handiness at close range, their low bulk often enabling the firer to get off the critical first shot.

### Hancock Nine-Twenty-Three Enforcer

A common American police and personal defence weapon. A plastic speed-loader allows all six rounds to be inserted with a single Minor Action. Like most modern revolvers, it fires from the lowest cylinder, putting the barrel more in the centre of mass of the gun.

|                   |                             |
|-------------------|-----------------------------|
| Type:             | 9mm police revolver         |
| Country:          | USA                         |
| Length:           | 21cm                        |
| Mass (empty):     | 0.5kg                       |
| Action:           | Single shot                 |
| Ammunition:       | 9x23mm fixed cartridge ball |
| Muzzle Velocity:  | 390mps                      |
| Magazine:         | 6 round cylinder            |
| Mass of rounds in | 0.1kg                       |
| Reloader:         |                             |
| RoF:              | 30rpm                       |

### Rockwell 12-39 Magnum

Designed and marketed as a companion hunting weapon for the massive Rockwell 12-81 Magnum rifle, the 12-39 revolver is the most powerful production handgun mass-produced in human space.

|                  |                              |
|------------------|------------------------------|
| Type:            | 12mm hunting revolver        |
| Country:         | Britain                      |
| Length:          | 44cm                         |
| Mass (empty):    | 1.8kg                        |
| Action:          | Single shot                  |
| Ammunition:      | 12x39mm fixed cartridge ball |
| Muzzle Velocity: | 620mps                       |
| Magazine:        | 6 round cylinder             |
| Magazine Mass:   | 0.3kg                        |
| RoF:             | 60rpm                        |

### Stracher Modell 6

This compact pistol uses the same high-velocity ammunition as the MP-67 series.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 6 mm automatic                |
| Country:         | Austrovenia                   |
| Length:          | 32cm                          |
| Mass (empty):    | 0.7kg                         |
| Action:          | Single shot                   |
| Ammunition:      | 6 x 27mm fixed cartridge ball |
| Muzzle Velocity: | 860mps                        |
| Magazine:        | 22-round box                  |
| Magazine Mass:   | 0.3kg                         |
| RoF:             | 120rpm                        |

| Weapon   | TL | Range | Damage | Kg   | Cost  | Magazine | Magazine Cost | Traits |
|----------|----|-------|--------|------|-------|----------|---------------|--------|
| 9-23     | 10 | 30    | 3D     | 0.5  | Lv170 | 6        | Lv2           | —      |
| 12-39    | 10 | 80    | 4D     | 2.1  | Lv900 | 6        | Lv18          | —      |
| Modell-6 | 11 | 40    | 3D     | 1.0  | Lv370 | 22       | Lv30          | AP 4   |
| P-11     | 9  | 70    | 4D     | 1.7  | Lv350 | 7        | Lv15          | —      |
| M-57     | 11 | 30    | 3D     | 0.73 | Lv300 | 20       | Lv14          | —      |

## Stracher P11mm (Pistole 11mm Magnum)

A conventional 11mm automatic pistol. It is the most powerful production magazine-fed handgun in human space.

|                  |                                |
|------------------|--------------------------------|
| Type:            | 11mm automatic                 |
| Country:         | Austrovenia                    |
| Length:          | 35cm                           |
| Mass (empty):    | 1.5kg                          |
| Action:          | Single shot                    |
| Ammunition:      | 11 x 35mm fixed cartridge ball |
| Muzzle Velocity: | 580mps                         |
| Magazine:        | 7-round box                    |
| Magazine Mass:   | 0.2kg                          |
| RoF:             | 120rpm                         |



Hancock  
Nine-Twenty-Three



Rockwell 12-39 Magnum



Stracher Modell 6



Traylor Model 57

## Traylor Model 57 (Chip Traylor Special)

A common American military and police weapon. It is typical of light semi-automatic pistols common across human space.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 9mm automatic                 |
| Country:         | USA                           |
| Length:          | 20cm                          |
| Mass (empty):    | 0.6 kg                        |
| Action:          | Semi-automatic                |
| Ammunition:      | 9 x 24mm fixed cartridge ball |
| Muzzle Velocity: | 460mps                        |
| Magazine:        | 20-round box                  |
| Magazine Mass:   | 0.13kg                        |
| RoF:             | 120rpm                        |

## Submachine Guns and Assault Pistols

While of little use to most military units, submachine guns and assault pistols provide effective firepower for police tactical squads, as well as a handy defensive weapon for vehicle and aircrews.

### Stracher MP-67 PDW (Personal Defence Weapon)

Using a high-powered 6mm round that is more like a cut-down rifle round than conventional pistol round, the MP-67 is designed to provide compact and controllable firepower for rear-echelon troops and vehicle crews. It has also found use with police SWAT teams and military special forces and is often equipped with a suppressor to minimise hearing damage.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 6mm submachine gun            |
| Country:         | Austrovenia                   |
| Length:          | 60cm                          |
| Mass (empty):    | 1.7kg                         |
| Action:          | Single shot or burst          |
| Ammunition:      | 6 x 27mm fixed cartridge ball |
| Muzzle Velocity: | 910mps                        |
| Magazine:        | 50-round box                  |
| Magazine Mass:   | 0.7kg                         |
| RoF:             | 900rpm                        |



Stracher  
MP-67



Stracher  
MP-67K



Traylor T-50  
Assault Pistol

### Stracher MP-67K Compact Submachinegun

The smaller cousin of the MP-67, the MP-67K (K for Kurz or short) is little bigger than a large pistol, with almost the same firepower as its bigger relative.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 6mm submachine gun            |
| Country:         | Austrovenia                   |
| Length:          | 40cm                          |
| Mass (empty):    | 1.0kg                         |
| Action:          | Single shot or burst          |
| Ammunition:      | 6 x 27mm fixed cartridge ball |
| Muzzle Velocity: | 830mps                        |
| Magazine:        | 35-round box                  |
| Magazine Mass:   | 0.7 kg                        |
| RoF:             | 750rpm                        |

### Traylor T-50 Assault Pistol

A small, selective fire weapon, favoured by criminals and agents alike. The small size makes it hard to control (DM-2 on attack rolls when using full auto) and so is usually fired in bursts.

|                  |                               |
|------------------|-------------------------------|
| Type:            | 9mm submachine gun            |
| Country:         | America                       |
| Length:          | 40cm                          |
| Mass (empty):    | 1.0kg                         |
| Action:          | Single shot or burst          |
| Ammunition:      | 9 x 24mm fixed cartridge ball |
| Muzzle Velocity: | 750mps                        |
| Magazine:        | 32-round box                  |
| Magazine Mass:   | 1.2kg                         |
| RoF:             | 700rpm                        |

| Weapon | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits       |
|--------|----|-------|--------|-----|--------|----------|---------------|--------------|
| Mp-67  | 11 | 80    | 3D     | 2.4 | Lv1100 | 50       | Lv60          | AP 4, Auto 4 |
| MP-67K | 11 | 40    | 3D     | 1.7 | Lv900  | 35       | Lv40          | AP 4, Auto 4 |
| T-50   | 11 | 20    | 3D     | 2.2 | Lv700  | 32       | Lv10          | Auto 4       |

## Autoguns

Autoguns are a category of crew-served light automatic weapons fed from large capacity drums or flexible cassettes and are typically fired from mounts. They are similar to rifles but heavier construction enables them to sustain a higher rate of fire. Autoguns often have quick-

change barrels that can be swapped if they start to overheat from this sustained fire, while rotary guns are gatling-style weapons that use multiple rotating barrels to achieve extremely high rates of fire.

### DunArmCo Mini-12

Virtually a small cannon, the Mini-12 is found in licensed-built and copied forms in just about all militaries as a heavy infantry support weapon and light vehicle weapon.

|                  |                                     |
|------------------|-------------------------------------|
| Type:            | 12mm conventional heavy machine gun |
| Country:         | Australia                           |
| Length:          | 144cm                               |
| Mass (empty):    | 24kg                                |
| Action:          | Single shot or burst                |
| Ammunition:      | 12 x 95mm fixed cartridge ball      |
| Muzzle Velocity: | 940mps                              |
| Magazine:        | 100-round cassette                  |
| Magazine Mass:   | 7kg                                 |
| RoF:             | 800rpm                              |



DunArmCo Mini-12

### Giscard F-44 Gauss Gun

One of the few gauss machineguns in service, the F-44 was developed to ease logistical support for French units carrying the FAM-90 gauss rifle by providing ammunition commonality. The power pack for the weapon is included in the mass and cost of the drum.

|                  |  |
|------------------|--|
| Type:            | 4.5mm crew-served gauss support weapon |
| Country:         | France                                 |
| Length:          | 130cm                                  |
| Mass (empty):    | 20kg                                   |
| Action:          | Single shot or burst                   |
| Ammunition:      | 5.5 x 25mm flechette                   |
| Muzzle Velocity: | 1,100mps                               |
| Magazine:        | 5,000-round cassettes                  |
| Magazine Mass:   | 15kg                                   |
| RoF:             | 1,200rpm                               |



Giscard F-44 Gauss Gun

| Weapon  | TL | Range | Damage | Kg | Cost   | Magazine | Magazine Cost | Traits              |
|---------|----|-------|--------|----|--------|----------|---------------|---------------------|
| Mini-12 | 10 | 1000  | 5D     | 31 | Lv1800 | 100      | Lv125         | Auto 4, Bulky       |
| F-44    | 12 | 800   | 4D+1   | 35 | Lv2500 | 5,000    | Lv550         | AP 6, Auto 6, Bulky |

## MG-7 (Maschinengewehr Modell 7)

The small-calibre MG-7 was designed as a companion weapon to the SG-77 assault rifle, using the same ammunition. While the SG-77 has been dropped from current inventories, the machine gun carries on.

|                  |                                     |
|------------------|-------------------------------------|
| Type:            | 5.5mm conventional machine gun      |
| Country:         | Germany                             |
| Length:          | 107cm                               |
| Mass (empty):    | 4kg                                 |
| Action:          | Single shot or burst                |
| Ammunition:      | 5.5 x 40mm fixed cartridge ball     |
| Muzzle Velocity: | 1,200mps                            |
| Magazine:        | 75-round drum or 200-round cassette |
| Magazine Mass:   | 0.6kg (drum), 1kg (cassette)        |
| RoF:             | 750rpm                              |

## Rheinmetall M-97

This relatively new weapon uses the same ammunition as the Sk-19 assault rifle to simplify support requirements.

|                  |   |
|------------------|---|
| Type:            | 9mm binary machine gun                                      |
| Country:         | Germany   |
| Length:          | 97cm  |
| Mass (empty):    | 3.2kg   |
| Action:          | Single shot or burst  |
| Ammunition:      | 9 x 12mm binary APHE  |
| Muzzle Velocity: | 600mps  |
| Magazine:        | 200-round drum or 600-round cassette (includes gas bottles) |
| Magazine Mass:   | 1.5kg (drum), 5kg (cassette)                                |
| RoF:             | 1,000rpm  |

## Wu-Beijing Type 381 Machinegun

The Type 381 is typical of many medium machineguns found in arsenals all over Earth and charted space.

|                  |                                 |
|------------------|---------------------------------|
| Type:            | 7.5mm conventional machine gun  |
| Country:         | Manchuria                       |
| Length:          | 122cm                           |
| Mass (empty):    | 7kg                             |
| Action:          | Single shot or burst            |
| Ammunition:      | 7.5 x 32mm fixed cartridge ball |
| Muzzle Velocity: | 940mps                          |
| Magazine:        | 150-round cassette              |
| Magazine Mass:   | 2kg                             |
| RoF:             | 900rpm                          |



Wu-Beijing Type 381

| Weapon   | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits       |
|----------|----|-------|--------|-----|--------|----------|---------------|--------------|
| MG-7     | 9  | 500   | 3D     | 4.6 | Lv1740 | 75/200   | Lv55          | Auto 6       |
| M-97     | 12 | 400   | 4D     | 4.7 | Lv2500 | 200/600  | Lv100         | AP 6, Auto 6 |
| Type 381 | 10 | 600   | 3D     | 9   | Lv1700 | 150      | Lv100         | Auto 6       |

## Lasers

Lasers emit beams of coherent light that cause damage to a target. The short-duration, high-energy beam produces such a rapid temperature change in a target's surface that it explosively vaporises, causing shock damage. Due to this, laser weapons cannot be used as laser designators for missiles or artillery.

Lasers are typically powered by high-efficiency liquid metallic suspension (LMS) battery packs. Since a battery's discharge rate is insufficient to directly power a strong beam, the battery 'pumps' a fast-discharge homo-polar generator, which comprises most of the laser

mechanism. The generator stores energy in a rapidly spinning flywheel (at about 50,000rpm) until it has enough for a pulse.

Lasers are generally referred to by their output power in megawatts and pulse duration in hundredths of a second. A 40-01 laser would thus have an output of 40 megawatts for one one-hundredth of a second. Actual beam energy is a function of the power output multiplied by the pulse duration. Since one watt for one second produces one joule, a 40-megawatt pulse for one one-hundredth of a second would produce four-tenths of a megajoule. In comparison, a stick of dynamite produces roughly one megajoule of energy.

### Gonzalves-Brazilia Luce-7

The Luce-7 replaced the Luce-4 in Brazilian service. Although lower-powered than most laser rifles, it has enough punch to deal with most targets, and an integral 30mm GB30B grenade launcher gives it a good area fire capability.

|                  |   |
|------------------|---|
| Type:            | 40-01 laser rifle with integral 30mm grenade launcher |
| Country:         | Brazil  |
| Length:          | 69cm  |
| Mass (empty):    | 3kg   |
| Action:          | Single shot   |
| Pulse Energy:    | 0.4 megajoules  |
| Muzzle Velocity: | C   |
| Magazine:        | 5 MJ LMS cell (12 pulses)                             |
| Magazine Mass:   | 1kg   |
| RoF:             | 120rpm  |
| Features:        | 30mm integral grenade launcher                        |



Goncalves-Brazilia Luce-7

### Mueller-Rivera F-19 (Fusile-19)

The Mueller-Rivera F-19 is the current service laser with Argentine troops and widely exported too. It is the most effective and efficient man-portable laser weapon in use.

|                  |                              |
|------------------|------------------------------|
| Type:            | 70-01 laser rifle            |
| Country:         | Argentina                    |
| Length:          | 69cm                         |
| Mass (empty):    | 1.5kg                        |
| Action:          | Single shot                  |
| Pulse Energy:    | 0.7 megajoules               |
| Muzzle Velocity: | C                            |
| Magazine:        | 12 MJ FDLMS cell (15 pulses) |
| Magazine Mass:   | 1kg                          |
| RoF:             | 120rpm                       |

Mueller-Rivera F-19



| Weapon | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits        |
|--------|----|-------|--------|-----|--------|----------|---------------|---------------|
| Luce-7 | 11 | 200   | 3D +2  | 2.5 | Lv2500 | 12       | Lv5           | Zero-G        |
| F-19   | 12 | 400   | 6D     | 2.5 | Lv2150 | 15       | Lv15          | Scope, Zero-G |

## Mueller-Rivera P3 (Pistole-3)

The P3 is a very handy lightweight laser, one of the few available in 'pistol' format. The combination of low power output and high discharge rate of the power cell makes for a high cyclic rate of fire and limited burst fire capability. The power cell is worn on the belt and connected to the pistol by means of a heavy cable.

|                  |                            |
|------------------|----------------------------|
| Type:            | 20-01 laser pistol         |
| Country:         | Argentina                  |
| Length:          | 27cm                       |
| Mass (empty):    | 1kg                        |
| Action:          | Single shot or burst       |
| Pulse Energy:    | 0.2 megajoules             |
| Muzzle Velocity: | C                          |
| Magazine:        | 7MJ FDLMS cell (35 pulses) |
| Magazine Mass:   | 1kg                        |
| RoF:             | 300rpm                     |

## Rorttmann Lk-1 (Laserkarabiner1)

A very modern and deadly assault weapon, the LK-1 combines a powerful 35-01 combat laser with a 30mm grenade launcher. Most of these weapons mount an integrated sight that allows programming of the grenades.

|                  |                                |
|------------------|--------------------------------|
| Type:            | 35-01 laser rifle              |
| Country:         | Germany                        |
| Length:          | 65cm                           |
| Mass (empty):    | 2.5kg                          |
| Action:          | Single shot                    |
| Pulse Energy:    | 0.35 megajoules                |
| Muzzle Velocity: | C                              |
| Magazine:        | 12 MJ FDLMS cell (30 pulses)   |
| Magazine Mass:   | 1.4kg                          |
| RoF:             | 120rpm                         |
| Features:        | 30mm integral grenade launcher |

## SVB (Snayperskaya Vintovka Belnikarpova)

Although the Belnikarpova is the highest-energy man-portable laser in service with any army, more modern designs produce the same damage at lower power levels. Nonetheless, the SVB remains effective and is the standard service laser in use by Russia, where it serves as the squad-issue sniper weapon.

|                  |                            |
|------------------|----------------------------|
| Type:            | 120-01 laser rifle         |
| Country:         | Russia                     |
| Length:          | 83cm                       |
| Mass (empty):    | 2kg                        |
| Action:          | Single shot                |
| Pulse Energy:    | 0.8 megajoules             |
| Muzzle Velocity: | C                          |
| Magazine:        | 6 MJ FDLMS cell (6 pulses) |
| Magazine Mass:   | 1kg                        |
| RoF:             | 120rpm                     |

Muelle-Rivera P3



Rortman Lk-1



SVB



| Weapon | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits         |
|--------|----|-------|--------|-----|--------|----------|---------------|----------------|
| P-3    | 12 | 30    | 3D+2   | 1   | Lv2100 | 35       | Lv15          | Auto 3, Zero-G |
| Lk-1   | 12 | 200   | 4D     | 3.9 | Lv2550 | 30       | Lv15          | Scope, Zero-G  |
| SVB    | 11 | 500   | 5D     | 3.0 | Lv2300 | 6        | Lv15          | Scope, Zero-G  |

# Plasma Guns, Human-Portable

A plasma gun contains a laser ignition system in the weapon that superheats a hydrogen-telluride fuel pellet to a plasma state. The plasma is contained in the ignition chamber briefly and then allowed to escape through a magnetically focused field along the weapon's barrel. The high velocity plasma bolt is initially about two millimetres in diameter but begins to dissipate almost immediately. Dissipation is minimised by having the bolt ride a 'tunnel' of heated air generated by a laser beam from the weapon.

## Jaschonek Fabrikant

### A-9 Sturmgewehr

The A-9 is the newest and most compact, man-portable plasma gun issued to any military, intended to be used as an assault rifle rather than as a squad support weapon. While not seriously considered as an Sk-19 replacement, the A-9 is issued on an experimental basis to back up the SK-19.

|               |                                       |
|---------------|---------------------------------------|
| Type:         | Man-portable 5MW plasma gun           |
| Country:      | Germany                               |
| Length:       | 83cm                                  |
| Mass (empty): | 4.5kg                                 |
| Action:       | Single shot                           |
| Ammunition:   | 10x70mm 5MW photonic core plaser cell |
| Magazine:     | 6 cells in rotating cylinder magazine |
| Ammunition    | 1.8kg                                 |
| Mass:         |                                       |
| RoF:          | 60rpm                                 |

*Jaschonek Fabrikant A-9*



The ammunition for the weapon consists of photonic core plasma cells, each containing a fast discharge battery to pump the weapon's laser ignition and pathfinder beam and a fuel pellet for the plasma bolt. After firing, the spent cells are ejected and are not reusable. Some care must be exercised in the selection of the location of the plasma gunner as ejected cells are extremely hot, with semi-molten centres and can cause minor burn injuries to other troops (1D-2 damage) or even ignite dry, flammable materials.

## Kurita Arms Type 21F

The Kurita Type 21F is the classic second-generation man-portable plasma gun, incorporating more punch in a much more efficient design. It is currently the standard squad heavy support weapon with the Japanese Army and will probably continue in that role for the foreseeable future.

The Type 21F has been extensively exported and serves in numerous armies and some of the more prosperous mercenary operations. Sumatro-Fabrique recently concluded a license production arrangement with Kurita for the purpose of equipping the Indonesian Army.

|               |  |
|---------------|--|
| Type:         | Man-portable 10MW plasma gun           |
| Country:      | Japan                                  |
| Length:       | 137cm                                  |
| Mass (empty): | 12kg                                   |
| Action:       | Single shot                            |
| Ammunition:   | 12x121mm 15MW photonic core laser cell |
| Magazine:     | 4 cells in internal tubular magazine   |
| Ammunition    | 0.4kg per cell                         |
| Mass:         |  |
| RoF:          | 60rpm                                  |



*Kurita Arms Type 21F*

| Weapon   | TL | Range | Damage | Kg   | Cost   | Magazine | Magazine Cost | Traits                |
|----------|----|-------|--------|------|--------|----------|---------------|-----------------------|
| A-9      | 12 | 50    | 4D     | 6.3  | Lv4800 | 6        | Lv24          | AP 8, Blast 1         |
| Type 21F | 12 | 200   | 8D     | 10.6 | Lv4200 | 4        | Lv42          | AP 14, Blast 2, Bulky |

## Quinn-Darlan Mk 2-A2 PGHP (Plasma Gun, Human-Portable)

The result of a joint venture by Quinn Optronics, Inc. and Darlan Optophysique, the Mk 2-A2 is the heaviest human-portable plasma weapon now in service with American and French armed forces. It is used as a heavy point fire weapon against hard targets at the squad level. The impact of the plasma bolt can cause considerable concussion and fragmentation effects.

|               |  |
|---------------|--|
| Type:         | Human-portable 20MW plasma gun           |
| Country:      | France/USA                               |
| Length:       | 166cm                                    |
| Mass (empty): | 12kg                                     |
| Action:       | Single shot                              |
| Ammunition:   | 17 x 91mm 20MW photonic core plaser cell |
| Magazine:     | 10 cells in internal tubular magazine    |
| Ammunition    | 0.65kg per cell                          |
| Mass:         |  |
| RoF:          | 40rpm                                    |
| Features:     | Bipod                                    |

## Wu-Beijing Type 1 High Energy Assault Gun

The Type 1 was the first human-portable plasma gun to see service. Although outclassed by many newer types, it is still popular with militias and mercenary units that cannot get access to newer weaponry.

|               |   |
|---------------|---|
| Type:         | Human-portable 10MW plasma gun          |
| Country:      | Manchuria                               |
| Length:       | 137cm                                   |
| Mass (empty): | 12kg                                    |
| Action:       | Single shot                             |
| Ammunition:   | 12x120mm 10MW photonic core plaser cell |
| Magazine:     | 4 cells in internal tubular magazine    |
| Ammunition    | 0.4kg per cell                          |
| Mass:         |   |
| RoF:          | 40rpm                                   |

Wu-Beijing Type 1



Quinn-Darlan Mk 2-A2

| Weapon       | TL | Range | Damage | Kg   | Cost   | Magazine | Magazine Cost | Traits                |
|--------------|----|-------|--------|------|--------|----------|---------------|-----------------------|
| PGHP Mk 2-A2 | 12 | 350   | 10D    | 18.5 | Lv5400 | 10       | Lv54          | AP 18, Blast 2, Bulky |
| Type 1       | 11 | 100   | 6D     | 13.6 | Lv3900 | 4        | Lv36          | AP 10, Blast 1, Bulky |

## Heavy Plasma Guns

Heavy plasma guns are commonly found in fixed locations and as vehicle weapons. As they have a low rate of fire, they are often paired with heavy machineguns or autocannons.

### Darlan CLP-1A (Cannon Leger Pyrotechnique-1A) Field-mounted Plasma Gun

The first field-mounted plasma gun to enter service, it incorporated a complex cruciform mount to allow more stable, accurate and rapid fire. Because it is virtually immobile on the battlefield, it has been withdrawn from frontline service but can often be found in fixed locations. Many CLP-1As have been exported, often as light vehicle armament upgrades.

|               |                                       |
|---------------|---------------------------------------|
| Type:         | Field-mounted 175MW plasma gun        |
| Country:      | France                                |
| Length:       | (Gun Tube Only): 274cm                |
| Mass (empty): | 344kg                                 |
| Action:       | Single shot                           |
| Magazine:     | 10-cell clip fed into overhead hopper |
| Ammunition    | 3.5 kg per cell                       |
| Mass:         |                                       |
| RoF:          | 30rpm                                 |



Darlan CLP-1A

### Jaschonek Waffenfabrik A4T Plasmagewehr

The A4T is a modification of the A4 plasma gun often found mounted in the Kz7 battlesuit. Specifications for the two weapons are the same but the A4T is a crew-served, tripod-mounted regular infantry version. The A4T proved very effective in the German War of Reunification and has since become standard issue.

|               |  |
|---------------|--|
| Type:         | 30MW plasma gun                          |
| Country:      | Germany                                  |
| Length:       | 166cm                                    |
| Mass (empty): | 20 kg + 10kg tripod                      |
| Action:       | Single shot                              |
| Ammunition:   | 20x 107mm 30MW photonic core plaser cell |
| Magazine:     | 5-round box                              |
| Ammunition    | 1 kg per cell                            |
| Mass:         |  |
| RoF:          | 30rpm                                    |



Jaschonek Waffenfabrik A4T

| Weapon | TL | Range | Damage | Kg  | Cost    | Magazine | Magazine Cost | Traits               |
|--------|----|-------|--------|-----|---------|----------|---------------|----------------------|
| CLP-1A | 11 | 800   | 16D    | 380 | Lv27900 | 10       | Lv1500        | AP 6, Blast 2        |
| A4T    | 12 | 500   | 14D    | 25  | Lv16500 | 5        | Lv300         | AP 6, Blast 1, Bulky |

# HEAVY WEAPONS

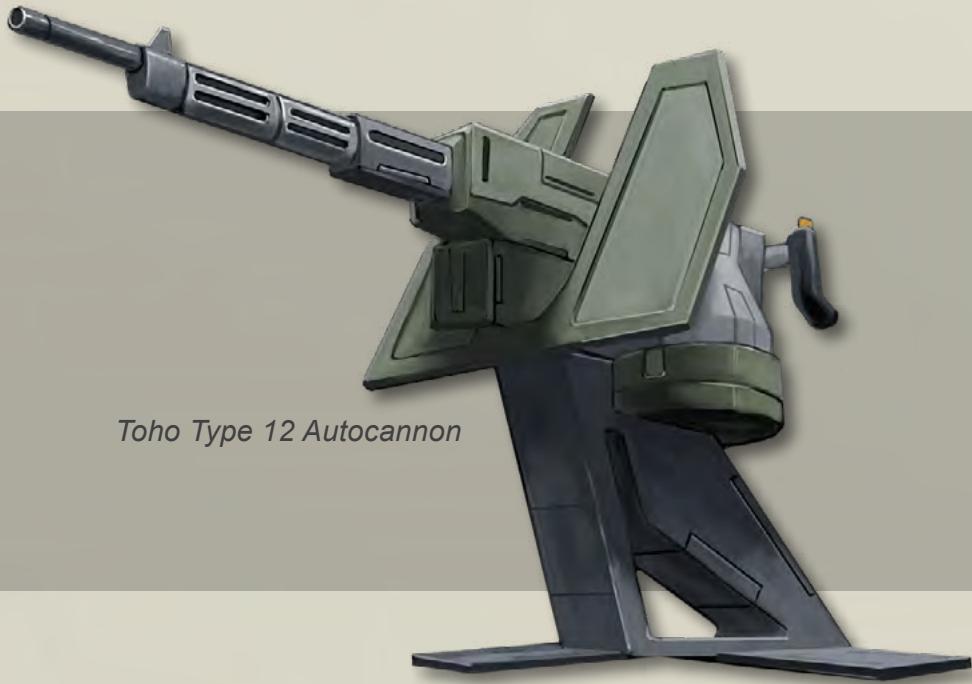
While missiles are often the primary armament of light armoured vehicles, gun systems are common as secondary and back-up weapons. The technology of chemically-propelled rounds has changed little since Twilight, with incremental improvements rather than major changes. Most heavy weapons embed the round in a block of propellant, reducing the length of the shell. The rounds are normally covered by a layer of combustible composite to protect the propellant block from shock, rough handling and humidity.

Binary propellant is also common in vehicle heavy weapons but gauss weapons are not due to their power requirements.

## Toho Type 12 Autocannon

The Type 12 is typical of most light autocannons, and variations on this weapon can be found everywhere from IFVs to aircraft to anti-missile systems.

|                  |                                 |
|------------------|---------------------------------|
| Type:            | 25mm conventional autocannon    |
| Country:         | Japan                           |
| Length:          | 190cm                           |
| Mass (empty):    | 600kg                           |
| Action:          | Single shot or burst            |
| Ammunition:      | 25 x 161mm fixed cartridge APHE |
| Muzzle Velocity: | 1,100mps                        |
| Magazine:        | 50-round drums                  |
| Magazine Mass:   | 15kg                            |
| RoF:             | 660rpm                          |



Toho Type 12 Autocannon

| Weapon  | TL | Range | Damage | Kg  | Cost   | Magazine | Magazine Cost | Traits       |
|---------|----|-------|--------|-----|--------|----------|---------------|--------------|
| Type 12 | 11 | 800   | 6D     | 600 | Lv1000 | 50       | Lv525         | AP 8, Auto 4 |

# NON-LETHAL WEAPONS

Sonic stunners project focused sound energy, usually in the ultrahigh frequency range, with sufficient energy to stun the target. They are only effective in atmospheres and against targets not wearing heavy armour (particularly airtight armoured helmets). As a result of these limitations and the fact that sonic bursts merely stun an opponent, they are of limited combat value. However, they are highly effective non-lethal control weapons, used extensively by police and security forces.

Sonic weapons are designed for use against terrestrial life and can have variable effects when used against alien. When used against a non-terrestrial species, roll D66. On a roll of 11–16, the weapon has no effect, from 21 to 46 the effect is normal and from 51 to 65 an additional 1D is added to the Stun damage. On a roll of 66, however, the weapon does actual, rather than Stun, damage. Kaefers, for example, are unaffected by sonic weapons.



*Brandt Audionique AS-3*

## Brandt Audionique AS-3

This sonic stunner is often used by police and security guards. Like the P-3 laser pistol, the power pack is separate, carried on the belt beside the weapon's holster.

|                  |                          |
|------------------|--------------------------|
| Type:            | Sonic stun pistol        |
| Country:         | France                   |
| Length:          | 47cm                     |
| Mass (empty):    | 2kg                      |
| Action:          | Single shot              |
| Muzzle Velocity: | Local speed of sound     |
| Magazine:        | 5MJ LMS cell (40 pulses) |
| Battery Mass:    | 0.5kg                    |
| RoF:             | 130rpm                   |

## Quinn Optronics Restraint Carbine

The heavier restraint carbine is used for high-risk situations where its greater power overrides its more cumbersome size.

|                  |                           |
|------------------|---------------------------|
| Type:            | Sonic stun police carbine |
| Country:         | America                   |
| Length:          | 73cm                      |
| Mass (empty):    | 4kg                       |
| Action:          | Single shot               |
| Muzzle Velocity: | Local speed of sound      |
| Magazine:        | 5MJ LMS cell (15 pulses)  |
| Battery Mass:    | 1kg                       |
| RoF:             | 300rpm                    |



*Quinn Optronics  
Restraint Carbine*

| Weapon            | TL | Range | Damage | Kg | Cost  | Magazine | Magazine Cost | Traits       |
|-------------------|----|-------|--------|----|-------|----------|---------------|--------------|
| AS-3              | 10 | 20    | 2D+2   | 2  | Lv400 | 40       | Lv15          | Stun         |
| Restraint Carbine | 10 | 60    | 3D+2   | 5  | Lv600 | 15       | Lv15          | Auto 3, Stun |

# GRENADES & LAUNCHERS

A variety of grenade launchers are mounted integral to many combat rifles, all roughly similar in performance. In addition, a few older magazine-loading grenade launchers are also available, although they are seldom used now by first-line troops. All modern grenade launchers can mount rangefinder sights, which, when used with programmable grenades, allow the round to be detonated at a set range, allowing such tactics as air-bursting over a trench or in the middle of a room.

## 30mm Integral Grenade Launcher

This weapon is normally encountered as part of another weapon system, such as the AS-89. The listed mass and cost are for adding a launcher to a rifle.

An accessory module is available that will convert the launcher into a standalone weapon for Lv180, with pistol grip, folding stock and rail mount for sights and other accessories.

|                  |   |
|------------------|---|
| Type:            | 30mm grenade launcher (integral to rifle) |
| Country:         | Generic                                   |
| Length:          | N/A                                       |
| Mass:            | 1.1kg unloaded                            |
| Action:          | Single shot                               |
| Ammunition:      | Any 30 x 40mm propelled grenade           |
| Muzzle Velocity: | 400mps                                    |
| Magazine:        | 3-round internal tubular magazine         |
| RoF:             | 60rpm                                     |

## Propelled Grenades

These 30x40mm propelled grenades are suitable for use with all 30mm grenade launchers. For double the listed price, the grenades can be equipped with programmable fuses that can receive ranging information from a gun-mounted sight. The usefulness of this is explained on page 82.

| Grenade      | Damage | Kg   | Price | Traits  |
|--------------|--------|------|-------|---------|
| Baton        | 3D     | 0.25 | Lv27  | Stun    |
| Flechette    | 4D     | 0.2  | Lv30  | Blast 3 |
| HE           | 6D     | 0.2  | Lv24  | Blast 6 |
| HEAP         | 6D     | 0.2  | Lv30  | AP 10   |
| Smoke        | —      | 0.2  | Lv42  | Blast 9 |
| Splash Round | 1D     | 0.25 | Lv20  | Blast 4 |

**BATON ROUND:** A ‘less-lethal’ round, this launches a hard rubber baton that spreads into an X-shape after it is fired.

**CONCEALMENT:** Creates a thick obscuration cloud which blocks visual and thermal images for 1D x3 minutes.

**FLECHETTE:** This round turns the grenade launcher into a giant shotgun, firing fin-stabilised darts.

**HIGH EXPLOSIVE ARMOUR PIERCING:** A light anti-armour round designed for use against light vehicles and combat walkers.

**HIGH EXPLOSIVE:** Standard anti-personnel round.

**SPLASH ROUND:** This round is loaded with a volatile liquid that rapidly evaporates and is often used in microgravity and space craft environments due to its lack of penetrative capability.

## Hand Grenades

The following grenades are representative of the common range of grenade types that are available.

| Round      | Damage | Mass | Price | Traits        |
|------------|--------|------|-------|---------------|
| Flash-Bang | 3D     | 0.3  | Lv30  | Blast 9, Stun |
| HE         | 6D     | 0.3  | Lv10  | Blast 9       |
| Smoke      | —      | 0.3  | Lv20  | Blast 9       |

**FLASH-BANG GRENADE:** Produces an extremely loud sound and a series of highly-intense flashes. Causes disorientation and nausea. Any targets in the blast radius must make a Difficult Endurance check, or have a -2 DM to all actions for 2D rounds due to a combination of flash blindness and disorientation from the noise. Those with proper protection are unaffected.

**HIGH EXPLOSIVE FRAGMENTATION GRENADE:**

Explosive grenade with concussive and fragmentation effects.

**SMOKE GRENADE:** Visual and IR-blocking smoke grenade.

| Weapon                         | TL | Range | Damage | Magazine | Cost  | Kg  | Traits |
|--------------------------------|----|-------|--------|----------|-------|-----|--------|
| 30mm Integral Grenade Launcher | 9  | 300m  | Varies | 3        | Lv200 | 2.2 | —      |

# WEAPON ADD-ONS

Most weapons can be fitted with upgrades and options, while others have this equipment built into them as standard. This equipment enhances the capabilities of the weapon, making them far more effective in combat.

## BARREL EXTENSION

A barrel extension, or more typically a barrel replacement, can extend a weapon's effective range by 20%.

| Item             | TL | Kg   | Cost |
|------------------|----|------|------|
| Barrel Extension | 10 | +20% | +10% |

## BAYONET

A bayonet is a long combat knife affixed to the front of a rifle. It has long fallen out of use but the TFL on Aurore have started to revive training for it, to help deal with kaefer close-assaults. It turns a combat rifle into a short spear.

| Weapon  | TL | Range | Damage | Kg  | Cost | Traits |
|---------|----|-------|--------|-----|------|--------|
| Bayonet | 10 | Melee | 2D     | 0.4 | Lv50 | —      |

## BIPOD

Use of a bipod with a rifle or larger weapon grants an additional DM+1 to attack rolls when aiming (see page 71 of the *Traveller Core rulebook*).

| Item  | TL | Kg | Cost  |
|-------|----|----|-------|
| Bipod | 9  | 2  | Lv250 |

## FOREGRIP (WITH FLASHLIGHT)

A foregrip allows a weapon to be more quickly brought to bear, granting DM+1 to initiative but DM-1 to attack rolls. The built-in flashlight provides a strong light source.

| Item                  | TL | Kg  | Cost |
|-----------------------|----|-----|------|
| Foregrip w/Flashlight | 10 | 0.2 | Lv15 |

## LASER DESIGNATOR

The laser designator is a small, flashlight-sized accessory for a rifle, allowing it to be used as a laser designator for missiles and artillery. It must be held

on-target until the missile or artillery round arrives and a successful attack roll will grant DM+2 to the attack roll of the incoming weapon. The designator has a range increment of 400 metres.

| Item             | TL | Kg  | Cost  |
|------------------|----|-----|-------|
| Laser Designator | 10 | 0.5 | Lv950 |

## SUPPRESSOR

The use of a suppressor inflicts DM-1 to all Recon checks made to determine where the sound of the gun shot came from. It reduces noise but does not eliminate it. Gauss weapons cannot use suppressors.

| Item       | TL | Kg | Cost  |
|------------|----|----|-------|
| Suppressor | 10 | —  | Lv200 |

Bayonet



Bipod



Suppressor

## Sights

There are a variety of sights available for modern rifles and pistols. These sights cannot be combined into the same unit unless otherwise specified.

### IMAGING SIGHT

An imaging sight includes a camera and feeds the image to a HUD or other imaging device. This allows the Traveller to shoot around corners or use the weapon as a periscope while only exposing their hand.

| Item          | TL | Kg   | Cost  |
|---------------|----|------|-------|
| Imaging Sight | 10 | +0.1 | Lv200 |

### LASER SIGHT

The laser sight is a small laser attached to the weapon allowing rapid and more accurate target acquisition. It grants DM+1 to attack rolls at short range and at all ranges if combined with a telescopic sight. Laser sights can also be quite intimidating. The use of laser sights grants DM+1 to Recon checks made to spot the shooter.

| Item        | TL | Kg | Cost |
|-------------|----|----|------|
| Laser Sight | 10 | —  | Lv75 |

### RED-DOT SIGHT

The red-dot sight uses a small, non-magnifying scope on top of the weapon with a large lens area. The sight projects a red dot in the centre of the sight, giving the same benefits as a laser sight without announcing the presence of the Traveller. This grants DM+1 to attack rolls but only at less than long range.

| Item          | TL | Kg  | Cost  |
|---------------|----|-----|-------|
| Red Dot Sight | 10 | 0.1 | Lv100 |

### SCEMS OVERLAY

This add-on places a SCEMS (Super-Conducting Electromagnetic Sensor) sensor on a scope and overlays it with an image of any radio-frequency activity, in particular leakage from electrical devices. This allows the Traveller to see electrical devices and activity through almost any cover.

| Item          | TL | Kg   | Cost   |
|---------------|----|------|--------|
| SCEMS Overlay | 12 | 0.15 | Lv2000 |

### SMART GRENADE SIGHT

The smart grenade sight reads exact distance to the target and feeds range information to propelled grenades, which then explode at the set distance, likely over a target or within a room. This grants DM+2 to attack rolls with compatible propelled grenades.

| Item                | TL | Kg  | Cost  |
|---------------------|----|-----|-------|
| Smart Grenade Sight | 11 | 0.2 | Lv600 |

### TELESCOPIC SIGHT

These sights are available in a variety of ranges and usually matched to the range of the weapon they are used with. Adding a telescopic sight gives a weapon the Scope trait. The cost of a telescopic sight is equal to the Range of the weapon, in Lv.

| Item             | TL | Kg  | Cost   |
|------------------|----|-----|--------|
| Telescopic Sight | 9  | 0.2 | Varies |



Telescopic Sight

# PERSONAL ARMOUR AND PRESSURE SUITS

In many lines of work in the universe of 2300AD, body armour is extremely important. It may be all that stands between a Traveller and a sudden, nasty death. There are two basic classifications of armour; civilian and military. Military armour is used widely by police forces, as well as actual military units, while civilian armour is usually designed to be worn under regular clothing or even pass itself off as regular clothing. Military armour has no such pretensions and it is obvious what it is.

All types of armour incorporate memory-plastic flaps and vents to promote comfort, yet can be sealed almost instantly in the event of a firefight.

## Civilian Armour

The following examples of armour are typical of what is available to the civilian market. More effective armour is controlled or restricted, especially in the Core. These armours are either concealable under clothing or else appear to be clothing to casual examination.

### Armoured Jacket

Although it appears to be a normal three-quarters length jacket, close examination of this armour may reveal its true nature. This would require a Very Difficult (12+) Investigate Check (1D minutes).

### Fluidic G-suit

By filling a pilot's lungs with oxygenated fluorocarbons, the fluidic g-suit can compensate for a great deal of the G stresses a pilot can be subjected to. The suit adds DM+2 to all END checks associated with high-G manoeuvres.

### Protective Vest

This is a standard 'bullet-proof' vest that can be easily concealed under most normal clothing. A Very Difficult (12+) Investigate Check (1D minutes) would be required to spot it.

## The Law and Body Armour

Body armour is almost as rigidly-controlled as weapons. Most nations require a permit to own body armour, although these rules are considerably more relaxed on the Frontier. In general, civilian body armour is controlled at Law Level 12-Protection of the armour, while military body armour is controlled at Law Level 10-Protection.



Armoured  
Jacket



Protective Vest



Fluidic  
G-suit

| Armour Type     | Protection | TL | Rad | Kg | Cost    | Required Skill |
|-----------------|------------|----|-----|----|---------|----------------|
| Armoured Jacket | +6         | 10 | —   | 2  | Lv500   | None           |
| Fluidic G-Suit  | +2         | 10 | —   | 8  | Lv50000 | None           |
| Protective Vest | +5         | 10 | —   | 1  | Lv250   | None           |

## Military Body Armour

Military models appear obviously as armour and are not concealable in any appreciable way.

*Full body  
inertial armour*



*Full body  
rigid armour*



| Armour Type               | Protection | TL | Rad | Kg | Cost   | Required Skill |
|---------------------------|------------|----|-----|----|--------|----------------|
| Full-Body Inertial Armour | +8         | 11 | —   | 8  | Lv3600 | None           |
| Full-Body Rigid Armour    | +12        | 11 | —   | 10 | Lv7000 | None           |
| Inertial Armour Vest      | +6         | 11 | —   | 3  | Lv500  | None           |
| Rigid Breastplate         | +10        | 11 | —   | 5  | Lv4000 | None           |
| Vedette Half Armour       | +2         | 10 | —   | 2  | Lv1200 | None           |

## Full-body Inertial Armour

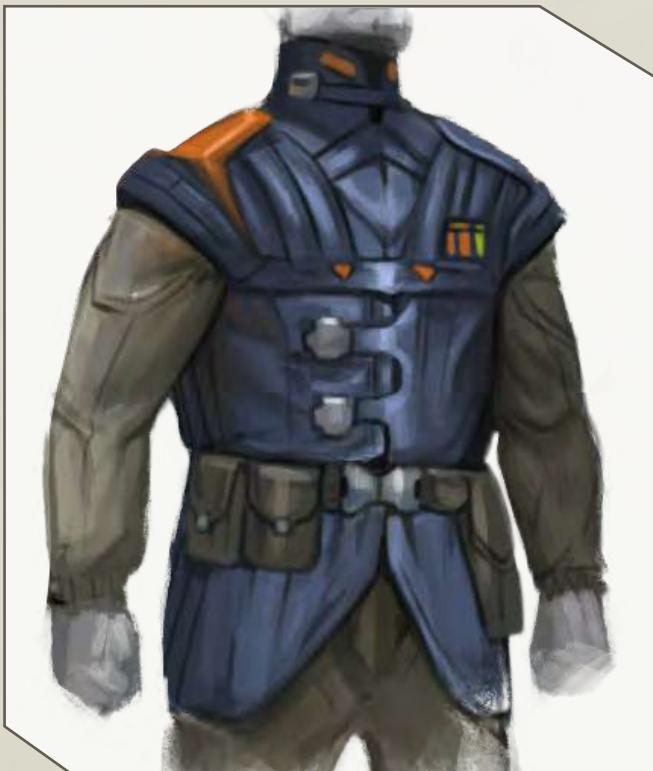
Inertial armour is a thick, yet flexible, armour that includes several layers for thermal and impact protection. It protects equally well against kinetic and energy weapons, and includes reinforcement at critical locations.

## Full-body Rigid Armour

Full body rigid armour is also known as 'clamshell' armour. While heavy and fatiguing to wear, it provides excellent protection.

## Inertial Armour Vest

This long vest is not concealable and incorporates additional padding and thicker armour than its civilian counterpart. The vest cannot be worn over top of any other armour.



*Inertial armour vest*

## Rigid Breastplate

This heavy front-and-back armour is often combined with full-body inertial armour for maximum protection. Most soldiers dislike the armour as it is heavy and awkward.



*Rigid breastplate*



*Vedette half armour*

## Vedette Half Armour

The vedette half armour is a rigid ceramic/alloy plate designed to protect the chest and shoulders. Variations on this theme are found throughout human space. This armour can be combined with full-body inertial armour.

## Helmets

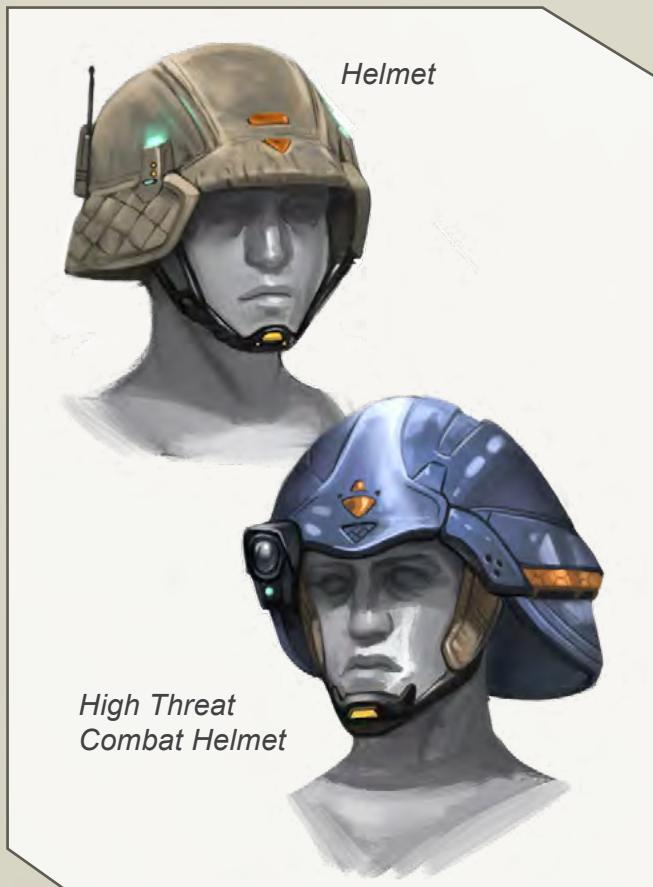
Most helmets incorporate communications systems and many have HUD systems and vision enhancements as well. A helmet worn alone provides no Protection. However, when worn with other armour it adds its full value to a Traveller's overall Protection score.

### Helmet

This item is made of moulded composite materials and is standard issue for most forces. These helmets come with a 10 kilometres tactical radio and can add a full-face visor or gas mask.

### High Threat Combat Helmet

The high threat combat helmet is the best protection available for the skull. It is normally equipped with a 10 kilometres range radio, tactical camera and a visor that includes a heads up display and low-light imaging. It is usually found only in first-line units of the more advanced militaries.



## Helmet Add-Ons

All of these helmet add-ons can be combined with one another and can be mounted on any helmet.

### FULL-FACE VISOR

Constructed from transparent diamondoid material on a clear synthetic back, the faceplate is hardened to stop bullets and shrapnel, and includes an auto-darkening feature to protect the Traveller from flash effects, including blinding lasers. Due to the way it constricts the wearer's field-of-view, all visually-based Recon or Investigate checks suffer DM-1.

| Item            | TL | Kg  | Cost  |
|-----------------|----|-----|-------|
| Full-face Visor | 11 | 0.2 | Lv250 |

### HUD SYSTEM

A HUD (Heads-Up-Display) puts data and images on a reticule right in front of the Traveller's eyes. The HUD can be coupled to electronic sights on a weapon, giving range and windage information, and providing DM+1 to attack rolls. It can also be used with some sights to shoot around corners while only exposing the firing hand to return fire.

HUDs can also be linked to body comps and sensor systems through PANs or fibre-optic lines. Wireless data communication is also possible but discouraged, as it creates a significant data security risk.

| Item       | TL | Kg  | Cost  |
|------------|----|-----|-------|
| HUD System | 11 | 0.3 | Lv400 |

### LOW-LIGHT IMAGING

This option allows the Traveller to negate all penalties related to poor lighting, as long as there is some sort of weak light source (such as star light).

| Item              | TL | Kg  | Cost  |
|-------------------|----|-----|-------|
| Low-light Imaging | 10 | 0.1 | Lv250 |

| Armour Type               | Protection | TL | Rad | Kg  | Cost   | Required Skill |
|---------------------------|------------|----|-----|-----|--------|----------------|
| Helmet                    | +1         | 10 | —   | 0.5 | Lv140  | None           |
| High Threat Combat Helmet | +2         | 12 | —   | 1.1 | Lv2500 | None           |

## TACTICAL CAMERA

The tactical camera is more often found among law enforcement officials than the military, as the need to document their actions is more a function of the former than the latter. The tactical camera is designed to both record internally and narrowcast what it sees back to a command centre. Both recordings have to match in order for the video to be admissible in court. The camera has a narrowcast range of 500 metres, and can store six hours of high-resolution video and audio internally.

| Item            | TL | Kg | Cost |
|-----------------|----|----|------|
| Tactical Camera | 10 | —  | Lv80 |

## THERMAL IMAGING

This option allows the user to see heat sources, which are colour-coded by the microprocessor in the overlay to go from blue (cold) to white (hot). This sight negates cover penalties for spotting, as long as the cover is not more than 30 centimetres thick.

| Item            | TL | Kg  | Cost  |
|-----------------|----|-----|-------|
| Thermal Imaging | 11 | 0.1 | Lv350 |

## Dragon Tooth Soldiers

The Drachentruppen battlesuit is a combination of full-body rigid armour, breastplate and high-threat combat helmet, along with a pair of armoured boots, mated to an undergarment that provides cooling and additional protection for the joints. This undergarment also provides a databus to connect weapons and accessories to the helmet HUD and under-armour power packs. Full life support is provided for six hours through a built-in system, although the battlesuit is not rated for combat in vacuum. The only drawback to the battlesuit is that they are fatiguing to wear and combat effectiveness is only a few hours at best. These suits are not powered and the heavy armour takes its toll after time, even with the cooling layer.

The helmet is equipped with a HUD, with both low-light and thermal imaging, along with a five kilometres range radio with encryption. The helmet's visor incorporates an active anti-blinding coating, preventing vision damage from lasers and dazzle attacks.



| Armour Type               | Protection | TL | Rad | Kg | Cost    | Required Skill |
|---------------------------|------------|----|-----|----|---------|----------------|
| Drachentruppen Battlesuit | +16        | 12 | 50  | 32 | Lv44000 | None           |

## Pressure and Environment Suits

Pressure suits and environment suits come in two basic varieties: softsuits and hardsuits. Softsuits are similar to suits used in the era before Twilight. Their internal pressure is much lower than standard atmospheric pressure and so pre-breathing exercises are required. Pre-breathing takes 1D minutes and must be done before the suit is sealed and switches to internal pressure. Hardsuits are rigid designs that maintain a constant volume of air inside, allowing free and easy movement. They are also quicker and easier to remove.



## Guderian Protective Systems K-19B Combat Vacuum Suit (CVS)

The CVS was developed for use in boarding actions and combat in a vacuum environment. It was developed from a commercial hybrid suit design with a rigid torso and flexible limbs, incorporating a suit-lock for ease of entry. The K-19 is designed with a limited self-sealing system that consists of an inner gel layer that hardens on exposure to air or vacuum. This system can only handle small breaches, such as those made by small-calibre weapons. It includes a radio with a 20 kilometres range and the helmet visor has an anti-dazzle coating, and the armoured backpack is equivalent to a personal life support system. It is treated as a hardsuit.

On some early models (K-19A) the seal on the suit can fail on exposure to certain volatile materials, earning them the nickname of 'Widowmaker'. While most of these suits were recalled, there are some still out there on the tertiary markets.

## Ruffin Orbital Science 'Khatar' Hostile Environment Suit

The Khatar ('Danger') is a heavy-duty hardsuit designed for use in particularly hostile places, like corrosive atmospheres or radiological and toxic environments. The helmet is solid, with audio and visual sensors linked to in-helmet monitors.

The hostile environment suit is good for up to 20 hours total use in a corrosive atmosphere and up to eight hours in an insidious atmosphere. After that it will begin to break down at the rate of one point of Protection per hour. Internal life support is good for six hours and can be extended to 12 hours with the addition of an auxiliary oxygen bottle. Note that there are no external fittings on the suit to allow external bottles to be connected. An additional bottle must be loaded when the operator dons the suit. It cannot be used with a personal life support system.

The suit contains a short-ranged (five kilometres) radio in addition to built-in sensors.

| Armour Type                     | Protection | TL | Rad | Kg | Cost    | Required Skill |
|---------------------------------|------------|----|-----|----|---------|----------------|
| Guderian K-19B CVS              | +12        | 11 | 100 | 28 | Lv17000 | Vacc Suit 0    |
| Khatar Hostile Environment Suit | +9         | 11 | 300 | 25 | Lv19000 | Vacc Suit 0    |
| Raffik Pressure Suit            | +6         | 11 | 50  | 13 | Lv9000  | Vacc Suit 0    |
| Personal Life Support System    | —          | 10 | —   | 12 | Lv1800  | —              |
| Additional Tank (3-hour bottle) | —          | 10 | —   | 5  | Lv100   | —              |

## Ruffin Orbital Science 'Raffik' P-Suit

The Raffik is a close-fitting softsuit with bubble helmet and a battery-powered life support system, including heating, cooling and air recycling. This unit has a duration of four hours on a small internal air bottle but a second can be added to the system to extend the duration by another six hours. The helmet includes a short-ranged (five kilometres) radio and beacon. A personal life support system can be added to greatly extend the suit's endurance.

## Trilon Support Service 'Far Traveller' Personal Life Support System, Type C

The PLSS-C extends the capabilities of a pressure suit, adding additional power and life support capabilities. A PLSS is good for 12 hours of use and can be extended up to 24 hours by adding additional bottled oxygen (up to four three-hour bottles in an external rack).



*Far Traveller Personal Life Support System*



*Khatar Hostile Environment Suit*



*Raffik P-Suit*

# ROBOTS & DRONES

Robots are very common in the universe of 2300AD. Robotic systems can be found almost anywhere, from the automated surveillance drones that wander the streets of the Core cities to the mining equipment used on remote colonies. Robots in 2300AD are defined as machines that follow a set of guidelines without human supervision or intervention. These machines have a limited learning capacity too, allowing them to remember solutions and implement them in similar situations. They are not capable of thinking but can simulate intelligence if skilfully programmed. With the most advanced models, there is active debate over whether they can be considered truly intelligent. One of the more common arguments against this is the fact that they do not go insane, unlike typical lab-programmed AIs. Of course, Dolls do develop problems but they are of a different sort.

Drones are simply remote-controlled vehicles, requiring almost constant operation and supervision. Many robots also have a remote-control facility, however, blurring the lines between the two. Typically, a robot can be remote-operated but a drone has no self-guiding capability and is thus considerably cheaper. In many cases, like the ubiquitous surveillance drones of the Core, drones are controlled by remote computers, which monitor audio-visual signals from the drones, looking for suspicious activity.

## DRONES

Drones, or remote piloted vehicles (RPVs) are a common sight across the worlds of human space. While they are designed to be piloted by humans, most of them, especially in the Core, are piloted by remote computer systems. These systems handle all routine functions and can call upon a human operator for assistance as required.

Telepresence drones are a special case, using advanced sensors and feedback systems to give a true sense of 'being there' and are often used in biological survey and rescue operations. It is possible

to use a Doll body as a drone, along with a 5D sensors group and neural link, for an extraordinary telepresence experience.

### Giscard Series 'S' Attack Drones

While slightly larger than the microdrone, attack drones use the same swarm logic programming to navigate and attack. While they require a human controller, they need merely to be pointed in the right direction and they will figure out how to get there on their own. Attack decisions still must come from a controller, however. It is the controller that provides the requisite logic and programming.

Attack drones carry a 6mm SMG with armour-piercing ammunition, along with 0.5kg of plastique-9. They can deploy the explosive with a launcher or be used to crash into a target and explode.

For every four drones in a swarm, DM+1 is granted to Electronics (remote ops) and Recon checks, and attack rolls, to a maximum of DM+4.

| Robot               | Hits   | Speed | Cost    |
|---------------------|--|-------|---------|
| Series S            | 7  | 20m   | Lv50000 |
| <b>TL</b>           | 12   |       |         |
| <b>Locomotion</b>   | Aeroplane  |       |         |
| <b>Skills</b>       | Athletics (dexterity) 1, Athletics (endurance) 1, Weapon () 2  |       |         |
| <b>Attacks</b>      | 6mm Machine Pistol (3D AP4, Auto 4), Explosive (4D Blast 5)  |       |         |
| <b>Manipulators</b> | None (STR 0, DEX 7)  |       |         |
| <b>Endurance</b>    | 24 (5) hours   |       |         |
| <b>Traits</b>       | Armour (+4), Flyer, Small (-2), (medium) (high)  |       |         |
| <b>Programming</b>  | Drone (INT 0)  |       |         |
| <b>Options</b>      | Audible Sensor, Transceiver 50km (improved), Visual Spectrum Sensor, Drone Interface, Wireless Data Link, Encryption Module, Fire Control System (improved), Weapon Mount Autoloader (small) |       |         |

## Quinn Mobile Systems Gz-5 Microdrone

The disc-shaped Gz-5 microdrone deploys from racks carried on vehicles and walkers. It is equipped with a ducted fan in the centre of the disk that provides both lift and forward propulsion, and the disk also features six legs that allow it to scurry over the ground. Sensors on a microdrone are minimal, little more than a low-light camera and microphone but they are very quiet. While drones require human operator input, they have swarm-logic programming that enables them to navigate capably on their own and orients the cameras and microphones of all drones to provide the best possible coverage.

For every four drones in a swarm, DM+1 is granted to Electronics (remote ops) and Recon checks, and attack rolls, to a maximum of DM+4.

| Robot               | Hits   | Speed | Cost   |
|---------------------|--|-------|--------|
| Gz-5 Microdrone     | 1  | 5m    | Lv7300 |
| <b>TL</b>           | 12   |       |        |
| <b>Locomotion</b>   | VTOL   |       |        |
| <b>Skills</b>       | Recon 1, Stealth 2, Stealth 2, Stealth 1   |       |        |
| <b>Attacks</b>      | None   |       |        |
| <b>Manipulators</b> | None   |       |        |
| <b>Endurance</b>    | 24 hours   |       |        |
| <b>Traits</b>       | Armour   |       |        |
| <b>Programming</b>  | None or Drone (INT 0)  |       |        |
| <b>Options</b>      | Audible Sensor (broad spectrum), Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker, Wireless Data Link, Camouflage: Audible (improved), Camouflage: Visual (improved), Drone Interface, Stealth (basic), Thermal Sensor, Recon Sensor (improved) |       |        |

## Aquitaine MV-4a Recon Drone

This small remotely-operated quad-rotor is generally unarmed, although it can be equipped with a weapon such as a submachinegun. The adaptive rotors render it extremely quiet and it can hover as high as 6,000 metres above a target or as close as two metres. Without a remote operator, it is only capable of either orbiting in place or returning to base.

| Robot               | Hits  | Speed | Cost    |
|---------------------|---|-------|---------|
| MV-4a               | 1   | 6m    | Lv12000 |
| <b>TL</b>           | 12  |       |         |
| <b>Locomotion</b>   | VTOL  |       |         |
| <b>Skills</b>       | Recon 1, Stealth 3, Stealth 2, Weapon 1   |       |         |
| <b>Attacks</b>      | None  |       |         |
| <b>Manipulators</b> | None (STR 0, DEX 7)   |       |         |
| <b>Endurance</b>    | 22 hours  |       |         |
| <b>Traits</b>       | Armour (+0), Flyer, Small (-4), (idle), Heightened Senses, IR Vision, IR Vision   |       |         |
| <b>Programming</b>  | None (INT 4)  |       |         |
| <b>Options</b>      | Audible Sensor (broad spectrum), Transceiver 50km (improved), Thermal Sensor, Visual Spectrum Sensor, Wireless Data Link, Camouflage: Audible (advanced), Drone Interface, Encryption Module, Light Intensifier Sensor (advanced), (spare slot), Camouflage: Visual (improved), Recon Sensor (improved), Geiger Counter |       |         |



Attack Drone



Microdrone



Recon Drone



Undersea Vehicle

## Benthic II Remote Operated Undersea Vehicle

While the ROUV can be operated remotely, it requires either a cable attachment or the drone must remain close enough to surface (20 metres) to receive radio transmissions. It is normally operated in an autonomous mode and used for undersea resource surveys, rescue operations or even sub-hunting. It is equipped with a range of manipulators and a limited sampling rig for collecting mineral or biological samples.

| Robot               | Hits  | Speed | Cost   |
|---------------------|---|-------|--------|
| Benthic II ROUV     | 12  | 3m    | Lv2300 |
| <b>TL</b>           | 12  |       |        |
| <b>Locomotion</b>   | Aquatic   |       |        |
| <b>Skills</b>       | Mechanic 0, Navigation -1, Recon 2, Recon 2, Science (Planetology) 0  |       |        |
| <b>Attacks</b>      | None  |       |        |
| <b>Manipulators</b> | 2 X (STR 7, DEX 8)  |       |        |
| <b>Endurance</b>    | 72 hours  |       |        |
| <b>Traits</b>       | Armour (+8), Seafarer, Small (-1), (idle), Amphibious, IR Vision, IR Vision   |       |        |
| <b>Programming</b>  | Basic (recon) (INT 4)   |       |        |
| <b>Options</b>      | Audible Sensor, Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker, Wireless Data Link, Cutting Torch (advanced), Scientific Toolkit (enhanced), Amphibious Environment Protection, Drone Interface, Light Intensifier Sensor (advanced), Thermal Sensor, Geiger Counter, Recon Sensor (enhanced), Underwater Sensor Group |       |        |

## Shell

A Shell is a Doll without a robot brain. It is controlled entirely by a neural link through an encrypted channel and is used to conduct remote business and telepresence. It requires a good connection to the controller and a poor signal can cause the sensory input to be erratic and even disorienting, or just to drop entirely. A world or colony must have a UCP Network Code of 8 or higher in order to provide a connection of sufficient speed and capacity to control a Shell. They are often used from a ship or station in orbit, to save on interface costs.

Shells otherwise are designed as an android and are equipped with at least a 4D Sensor Suite, if not a 5D suite. Rental Shells are often available on worlds that can support them. On others, like King, the atmospheric composition and deep radiation belts prevent the use of telepresence technologies from orbit.

| Robot               | Hits  | Speed | Cost     |
|---------------------|---|-------|----------|
| Shell               | 20  | 5m    | Lv280000 |
| <b>TL</b>           | 14  |       |          |
| <b>Locomotion</b>   | Walker  |       |          |
| <b>Skills</b>       | None  |       |          |
| <b>Attacks</b>      | None  |       |          |
| <b>Manipulators</b> | 2 X (STR 9, DEX 8)  |       |          |
| <b>Endurance</b>    | 72 hours  |       |          |
| <b>Traits</b>       | Armour (+2), ATV, (idle), Heightened Senses, 4D Sensor Group  |       |          |
| <b>Programming</b>  | Drone (INT 0)   |       |          |
| <b>Options</b>      | Audible Sensor, Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker (broad spectrum), Wireless Data Link, Android (advanced), Olfactory Sensor (improved), Drone Interface, Avatar Receiver, (spare slot) |       |          |



## ROBOTS

Robots normally operate in a fully-autonomous mode, although most are capable of being remotely-operated like a drone. Most mobile robots have some ability to learn over time, enabling them to adapt to rapidly-changing environments and situations. Note that something like a factory or warehouse robot likely lacks this capability.

### Aquitaine Node-6 Doll

A Doll is a robot that appears fully human, an android. It can walk, talk and interact in such a way that it is difficult to tell it is a machine. Any medical test will instantly discover their true nature, however, and interaction with one over time will reveal limitations. They are by no means any sort of artificial intelligence and a significant amount of their processing power is used to maintain a semblance of humanity.

Dolls can be manufactured with any gender or lack thereof. Some are even designed to be able to change or mix genders on command. This option doubles the cost of the pseudobiological modification.

Dolls are used in a variety of roles, from receptionists and assistants, to servants and sex workers, especially on Frontier worlds where there are 20 jobs for every person. By law in most nations, dolls are required to bear a bar code or other identifying mark to prevent them from being mistaken for human.

Dolls tend to be blandly-pleasant in personality. They can hold a conversation on a variety of topics and access the local Link network for further information. Unfortunately,

after about six to eight years of service, dolls tend to start acting erratically and are often wiped or retired. Some owners, however, are adamant about letting their dolls 'live', even when confronted with examples of erratic, and often dangerous, behaviour. For this reason, ownership of dolls in the Core is tightly-monitored and controlled, with mandatory wiping or destruction required after six years of operational time.

| Robot               | Hits  | Speed | Cost     |
|---------------------|---|-------|----------|
| Doll                | 20  | 5m    | Lv280000 |
| <b>TL</b>           | 14  |       |          |
| <b>Locomotion</b>   | Walker  |       |          |
| <b>Skills</b>       | Athletics (strength) 1, Carouse 1, Profession (domestic servant) 2, Science (Psychology) 1, Steward 2   |       |          |
| <b>Attacks</b>      | None  |       |          |
| <b>Manipulators</b> | 2 X (STR 9, DEX 8)  |       |          |
| <b>Endurance</b>    | 72 hours  |       |          |
| <b>Traits</b>       | Armour (+2), (idle), Heightened Senses, 4D Sensor Group   |       |          |
| <b>Programming</b>  | Very Advanced (INT 10)  |       |          |
| <b>Options</b>      | Audible Sensor, Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker (broad spectrum), Wireless Data Link, Android (advanced), Olfactory Sensor (improved), Drone Interface, Avatar Receiver, (spare slot) |       |          |

## Sistemas Domésticas Compañera de Cuarto Domestic Robot

The Roommate, as it is sometimes called, is an all-purpose wheeled robot, designed to handle any routine domestic duty. They closely resemble an old-style upright vacuum cleaner with arms and a head – which is pretty much exactly what they are. While they cannot cook well, they can microwave prepared food and follow directions to cook simple meals. They are primarily intended to provide cleaning and upkeep services for individuals or small groups. These short (1.1 metre) robots have a good vocabulary and are quite capable of holding a conversation, or even playing some games (chess, backgammon, and others). They come with all cleaning attachments built-in and simply need to recharge from a wall socket every so often. In addition to their cleaning capabilities, they are also equipped with environmental sensors and some basic emergency equipment in case of trouble. They are very popular with spacecraft crews and in space habitats of all sorts. More expensive bipedal versions are also available, although uncommon.

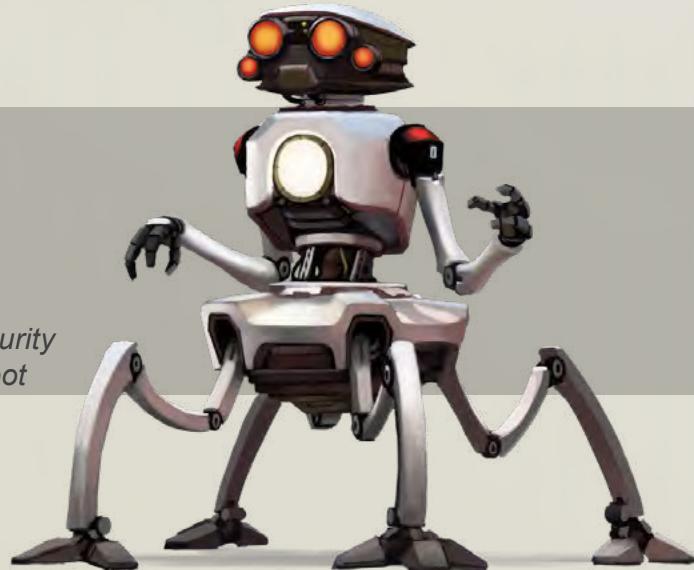
| Robot               | Hits   | Speed | Cost    |
|---------------------|--|-------|---------|
| Compañera de Cuarto | 6  | 5m    | Lv27000 |
| <b>TL</b>           | 13   |       |         |
| <b>Locomotion</b>   | Wheels   |       |         |
| <b>Skills</b>       | Carouse 0, Medic 0, Profession (Cleaner) 1, Profession (domestic servant) 2, Stealth 1, Steward 1, Weapon 1  |       |         |
| <b>Attacks</b>      | None   |       |         |
| <b>Manipulators</b> | 2 X (STR 5, DEX 8)   |       |         |
| <b>Endurance</b>    | 72 hours   |       |         |
| <b>Traits</b>       | Armour (+0), Small (-2), (idle), Heightened Senses, IR Vision, Alarm,  |       |         |
| <b>Programming</b>  | Advanced (INT 7)   |       |         |
| <b>Options</b>      | Audible Sensor, Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker, Wireless Data Link, Audible Sensor (broad spectrum), Drone Interface, Encryption Module, Light Intensifier Sensor (basic), Thermal Sensor, Fire Extinguisher, Forensic Toolkit (basic), Weapon Mount (small), Lightbar, Siren |       |         |

## Sortech FE-909 Security Robot

The FE-909 is a small four-legged unit designed to provide perimeter patrol for a large compound. Equally suitable for indoor or outdoor work, the FE-909 comes equipped with low-light and infrared vision, along with a powerful spotlight and a set of rotating red flashers and siren. By law, these robots cannot be armed but many facilities on the Frontier arm them with sonic weapons or even lasers. Some mercenary groups (and terrorists) have pressed these units into combat; their lack of significant armour and light-weight construction make them of limited usefulness in this role, however.

| Robot               | Hits   | Speed | Cost    |
|---------------------|--|-------|---------|
| FE-909              | 12   | 5m    | Lv75000 |
| <b>TL</b>           | 12   |       |         |
| <b>Locomotion</b>   | Wheels, ATV  |       |         |
| <b>Skills</b>       | Gun Combat (Energy), Investigate 1, Recon 1, Tactics (military) 1, Weapon  |       |         |
| <b>Attacks</b>      | Sonic Stunner (3D Stun)  |       |         |
| <b>Manipulators</b> | 2 X (STR 7 DEX 7)  |       |         |
| <b>Endurance</b>    | 72 hours   |       |         |
| <b>Traits</b>       | Armour (+4), ATV, Small (-1), (idle), Heightened Senses, IR Vision, Alarm,   |       |         |
| <b>Programming</b>  | Advanced (INT 7)   |       |         |
| <b>Options</b>      | Audible Sensor, Transceiver 5km (improved), Visual Spectrum Sensor, Voder Speaker, Wireless Data Link, Audible Sensor (broad spectrum), Drone Interface, Encryption Module, Light Intensifier Sensor (basic), Thermal Sensor, Fire Extinguisher, Forensic Toolkit (basic), Weapon Mount (small), Lightbar, Siren |       |         |





## CHANGES FROM THE ROBOT HANDBOOK

The *Robot Handbook* contains a complete Robot and Drone Design System for *Traveller*. However, *2300AD* has different tech assumptions for some robot components, including brains and pseudobiological modifications (Dolls).

### Brains

Robot brains of all types are only 10% of the cost listed in the *Robot Handbook*. Likewise, Bandwidth improvement costs are also only 10% of the Robot Handbook value.

### Pseudobiological Modifications

Pseudobiological modifications in *2300AD* do not apply the x3 cost modifier on top of the cost per Slot.

The following sensor upgrades are also available for robots in *2300AD*.

### 4D Suite

A 4D sensor suite provides a set of additional sensors that do not have conventional tactical value but would be useful for search and rescue, or true telepresence. This includes taste, smell, air pressure and touch sensors. These are commonly found on Dolls and Shells designed for telepresence. A 4D Sensor Suites replaces the standard array of sensors that all robots come with.

| Item     | TL | Slots | Cost  |
|----------|----|-------|-------|
| 4D Suite | 12 | 1     | 10000 |

### 5D Suite

The 5D sensor suite includes all the capabilities of the 4D suite but with much finer resolution. They can also be programmed for more unusual sensations, best left to the imagination. These signals are designed to feed into a neural link for true telepresence. These specialized sensors are only used in Dolls and Shells, and due to their expense are rare. A telepresence rig linked through a neural jack to a Shell with this sensor suite is just as good as being there and according to some aficionados, even better. A 5D Sensor Suites replace the standard array of sensors that all robots come with.

| Item     | TL      | Slots | Cost  |
|----------|---------|-------|-------|
| 5D Suite | 12 (14) | 2     | 50000 |

### Underwater Suite

This sensor suite includes everything that basic sensors have, plus sonar imaging, sonar range-finding, (5km range), depth and pressure sensors and a blue-green laser LIDAR with a 500 metre range.

| Item             | TL | Slots | Cost  |
|------------------|----|-------|-------|
| Underwater Suite | 12 | 2     | 50000 |

### Seismic and Engineering

This suite of tools includes ground sensors for seismic events, ground-penetrating radar with a 50 metre range and EM sensors for buried power or electronics.

| Item                            | TL | Slots | Cost  |
|---------------------------------|----|-------|-------|
| Seismic and Engineering Sensors | 12 | 2     | 50000 |

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