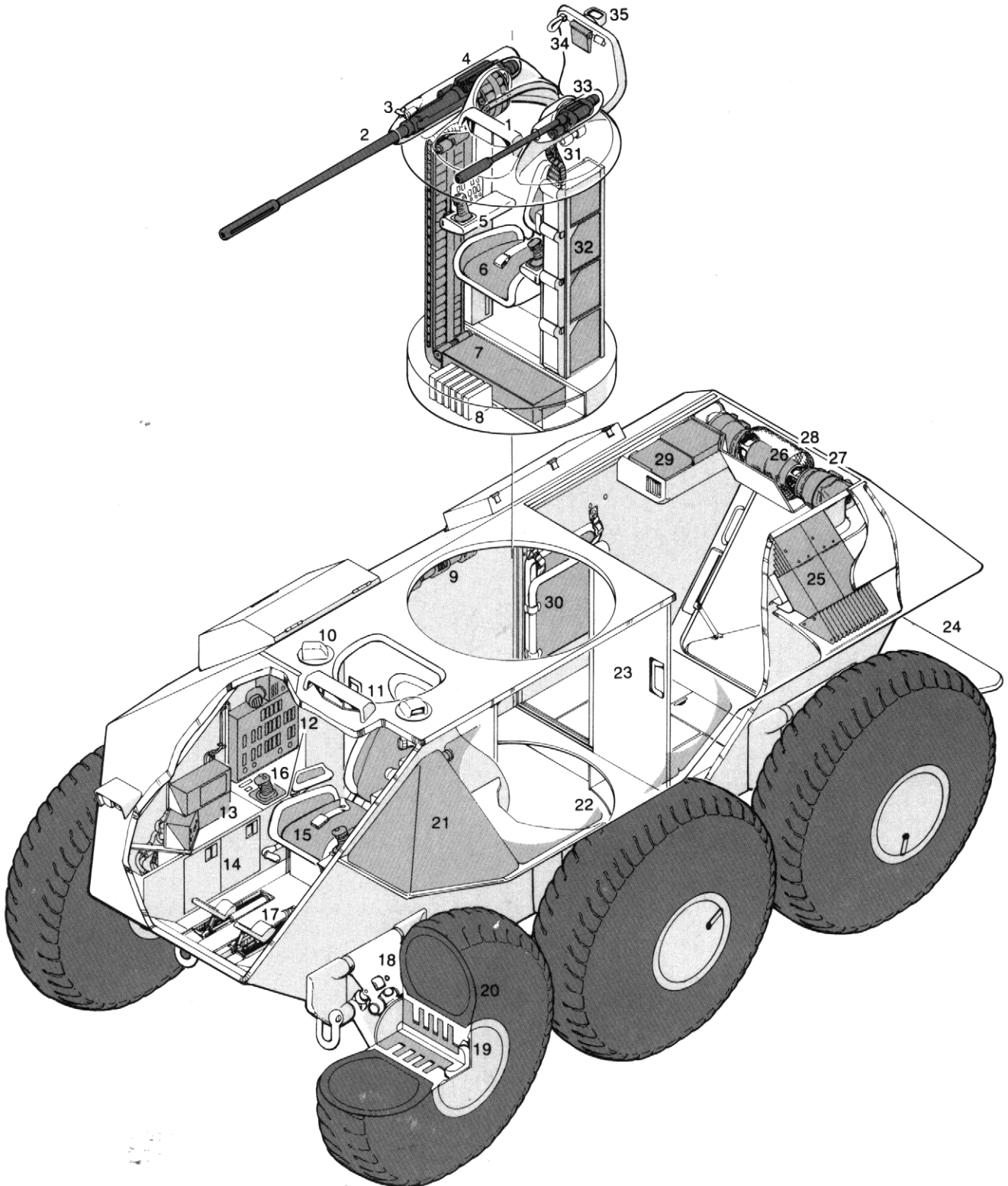# THOUGHTS & IMAGES
ALBEDO
THE ROLE-PLAYING GAME

BOOK 2: EQUIPMENT DESCRIPTION

ALBEDO ROLE PLAYING GAME
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Some extra thoughts on how things work. The common use of computers and a wide range of sensing systems can make it difficult, in many cases, to do any covert activity without someone or something watching. As previously mentioned, population monitoring is not uncommon, especially in the inner systems. Such is normally done by computers who politely ignore anything other than what they're supposed to look out for. They are, in turn, managed by elected personnel who ultimately have to answer to electric plebicites. (Most of the worlds are vigorously democratic, see the intro comments in book three for more.)

Computer supported sensing can largely dictate the flow of action in many situations. Are there "bugs"? Is the computer terminal watching you? Who can see you from orbit? Then, on the other hand, how snoopy can you be? And such sensing can do more than meerly see and hear. Visual information includes the full optical spectrum, from subtle changes in surface temperature with an individual's change in mood, to rates of ultra violet absorption in vegetation over valuable mineral deposits. Sonic analysis can be of microquaver rates in the answers to carefully designed questions or of the structural integrity of a ship's hull.
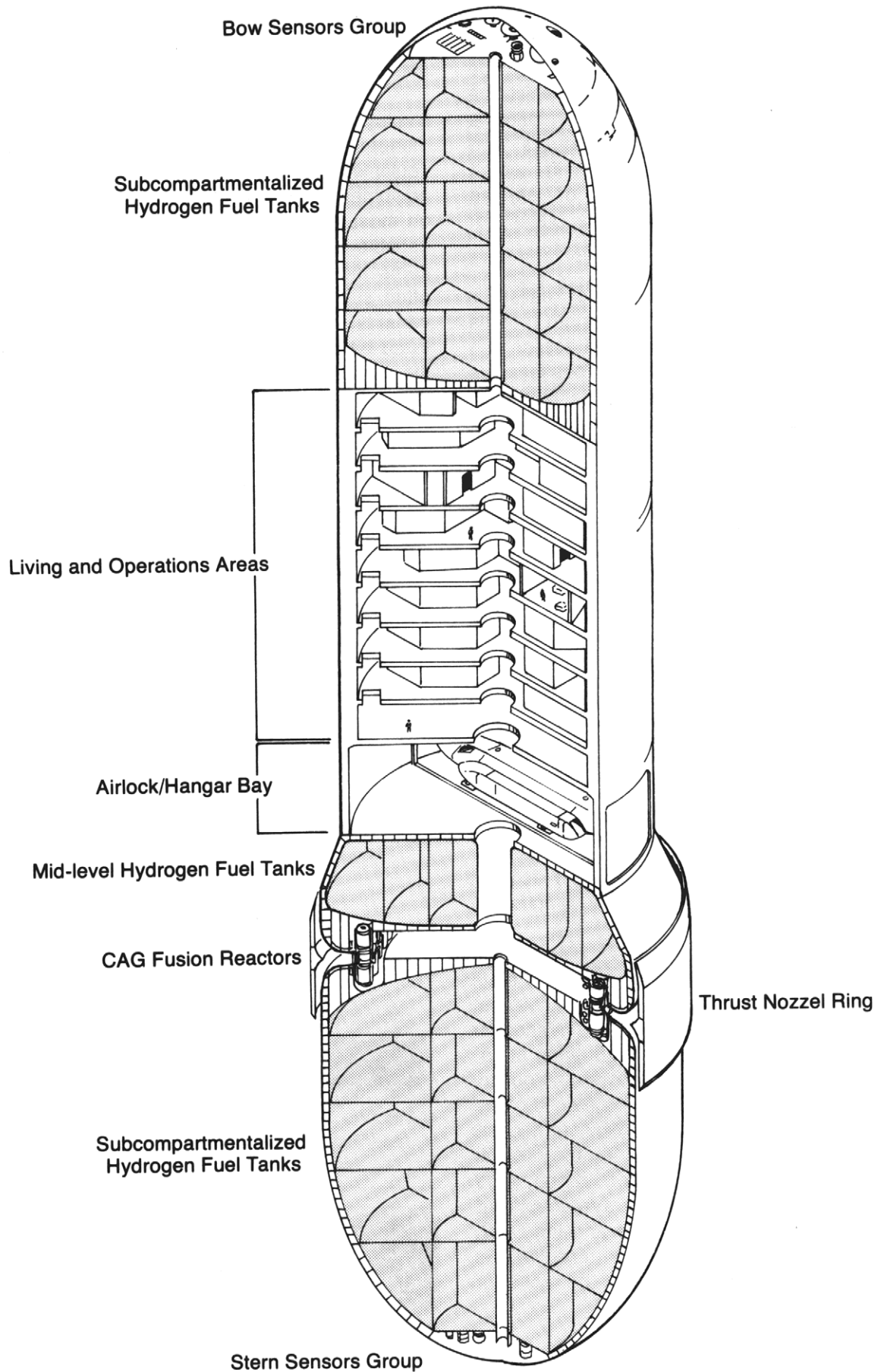
The trick to all that, is in knowing what and when to ask your handy-dandy hand terminal. Not that it has all these capabilities in itself, but it can link-up with other processors, with access to the appropriate programs and sensors which can help.

In the end, the player will have to not only worry about what kind of hardware (s)he has to carry, but also, what level of access and support (s)he can expect from the local computer network (and some careful pre-play planning on the part of both the players and referees as to how much knowledge of and access to the characters should have.) Such fun.

ILR 6x6 LIGHT ARMORED SCOUT VEHICLE

1. Fixed periscopes with laser range finders and sighting overlays.
2. 24 mm caseless autocannon with electric action and feed.
3. CCD/fibre-optic sight.
4. Power ammunition feed.
5. Side-stick controls, selectable for weapon aiming or vehicle driving.
6. Vehicle commander/gunner seat.
7. 24mm ammunition magazine.
8. Computer sub-group.
9. Turret drive.
10. 360° turnable CCD periscopes.
11. Fixed periscopes with laser range finders and sighting overlays.
12. Controls and circuit breaker panel.
13. Communications and computers.
14. Systems access and storage.
15. Driver's seat.
16. Side-stick controls, selectable for vehicle driving or weapons aiming.
17. Foot pedal controls, selectable for steering or accelerating/breaking.
18. Computer-controlled independent hydropneumatic suspension and six-wheel steering
19. Electric hub motor/break, all six wheels.
20. Foam filled, puncture-proof tires.
21. Extended-volume fuel tanks.
22. 24mm ammunition magazine automated reloader.
23. Optional compartment blast door.
24. Rear entry door.
25. Thermal/electric converters.
26. Air cooled generator.
27. Turbine.
28. Turbine intake filter.
29. Air conditioning/NBL unit.
30. Foldable passenger jump seat.
31. Power ammunition feed.
32. 8mm ammunition boxes.
33. 8mm caseless machine gun, electric action and feed.
34. Foldable flat screen display.
35. 360° turnable CCD periscope.

Typical Small FTL Scout Star-Ship

Bow Sensors Group

Subcompartmentalized
Hydrogen Fuel Tanks

Living and Operations Areas

Airlock/Hangar Bay

Mid-level Hydrogen Fuel Tanks

CAG Fusion Reactors

Thrust Nozzel Ring

Subcompartmentalized
Hydrogen Fuel Tanks

Stern Sensors Group

EQUIPMENT

As an alternative to preparing a written list of the equipment carried by a character, equipment can be represented by a card or slip of paper upon which the item's name, weight and any relevant information is recorded. Bags, pouches and containers are represented by labelled envelopes, in which equipment slips are placed. Worn or carried equipment is placed in full view of the player for convenience.

This system allows an amazing degree of realism in play. Unlike equipment lists, the slip system creates a situation where the player no longer has access to a detailed inventory of his entire worldly possessions at a glance. You will find characters suddenly running out of ammunition, or confused searches in the line of "well someone must have the bloody wrench!"

Different sized containers may hold a variety of different items. Body armours and webbing belts will be fitted with a number of "velcro'ed" utility pouches, so allow a considerable amount of leeway for pocket and pouch configuration (within reason). Too many containers can be very confusing, so be warned!

With the equipment card system in mind, one suggestion for play might be for the bulk of a characters money to be held in an account by the bank. The Character is given a credit card as one of its items of equipment, and it may draw on its money, perform a computer transaction or ask an automated teller for an account balance at any time that the opportunity presents itself, but the player's account balance is only constantly available to the umpire.

Sources of equipment.

In the inner ConFed, most individuals have a state provided allowance. Individuals who desire additional income can engage in "capitalistic" businesses or work for the state in service or administration. Individuals can petition the state for temporary access to costly goods and services for the good of the state or against future work credit. A citizen's basic allowance includes basic housing, food, medical support, primary and secondary education, and reasonable access to computer systems and information. The outer ConFed worlds and the I.L.R. are far more "capitalistic", and thus most of the abovementioned services will have to be paid for through an earned income or bank loans.

The standard prices given below are for equipment produced in state factories. While state produced tools and equipment are practical and efficient, they are in no way "jazzy". Privately produced equipment may be of better or worse quality than state supplied models, and tends to vary widely in price.

Military expeditions will normally have an "on hand" manufacturing capability which will be used to make equipment and weapons at need. While minor tools and equipment can be cobbled together in the workshops on most starships, the factories aboard VCLSV's are capable of mass producing very large and complex items indeed. Thus, the equipment listed below is often subject to a variety of local modifications and variants, and some of the equipment performances listed below could be modified in various ways given the correct resources, knowledge and skill.

STARTING EQUIPMENT:

A starting character could be expected to begin the game with 1D3 sets of clothes (which may be chosen from street, outdoor and work clothes) a hand computer and 1D100 x 20 credits. The player character will have miscellaneous equipment suitable for the scenario in play, at the discretion of the umpire.
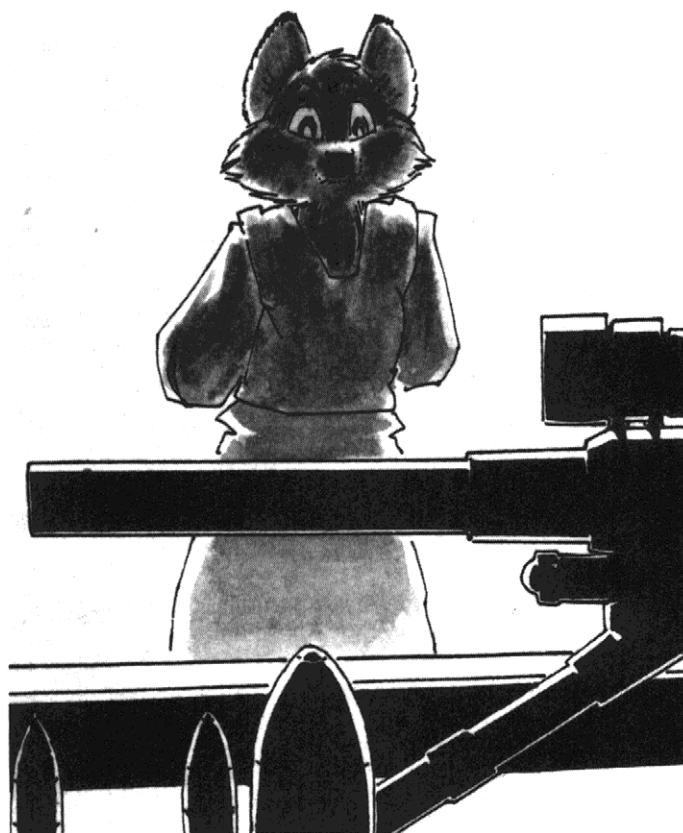
ARMOUR:

Body armour is common issue to combat troops, police and air crew. Military body armours are not available to the public, but a number of items of protective clothing are produced for the consumer public.

All body armours are flexible, since rigid body armour has proved to be prohibitively cumbersome, and is completely unsuited for wear by combat personnel. Flexible body armour has a worn life of about five years, after which it must be discarded due to the deterioration of the armour material (-1DRM to penetrate with any firearm).

Protective clothing.
Armour type: **Ballistic jacket/trousers**
Penetration resistance: 1
Impact distribution: 1
Weight: 1
Encumbrance: 0
Cost: 100-200
Coverage: Chest, abdomen, arms, legs.
Description: A frequent item of wear amongst persons who require a degree of protection against punctures, cuts and abrasions. Ballistic cloth protective clothes are a common item of wear amongst military personnel who expect to encounter combat. Ballistic clothing of this sort is identical in cut to normal fatigues.

Ballistic clothing provides a degree of protection from heat and fire. Protective coveralls will have a 50% chance of preventing the first burn result in each hit location when attacked by *intense* heat (eg. from a brewed-up vehicle or burning house).

Armour type: **Helmet Liner**
Penetration resistance: 0
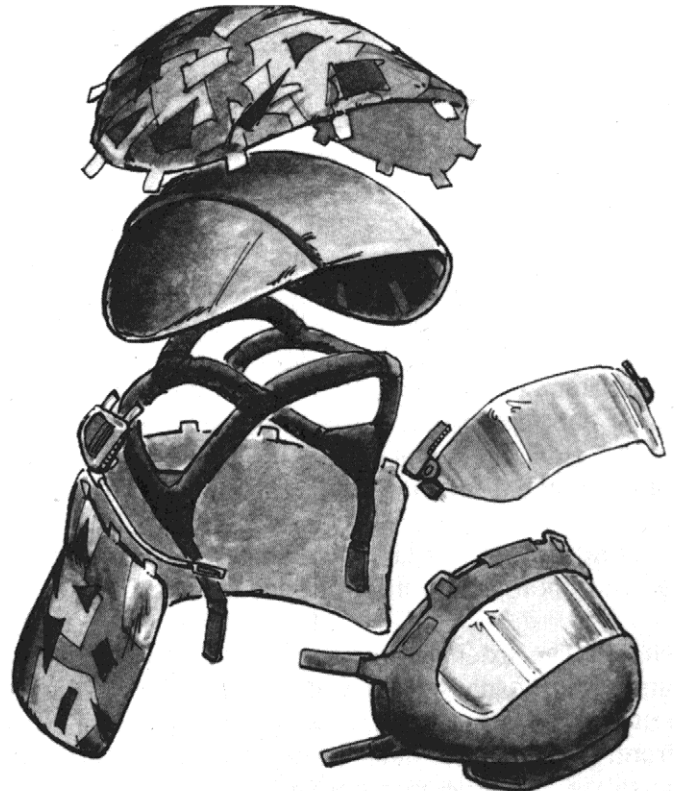Impact distribution: 1 (skull only)
Weight: neg
Encumbrance: 0
Cost: 50
Coverage: Head (skull only)
Description: A padded cap which is designed to fit underneath crash or battle helmets, providing a secure means of affixing earphones and microphones for communications equipment. Helmet liners are made from a tough, shock absorbent material, with long, earphone equipped padded pouches covering the wearer's ears. Helmet liners are exclusively used by officers, pilots and armoured vehicle crews, whose battle or crash helmets are specially constructed to allow for the added bulk of the liner. Many vehicle drivers will forgo the use of a crash helmet entirely in favour of wearing the liner by itself, which is more than sufficient protection against minor accidents. Similar padded head protectors are commonly worn during practice bouts of martial arts.

Reduce the initiative of the wearers of helmet liners by 2 when they are in a situation where hearing might count (ie at close ranges away from the noise of vehicle engines). Add the impact distribution of a helmet liner to that of any helmet with which it is worn.

Body armour.

Armour type: Ballistic vest

Penetration resistance:5

Impact distribution: 2

Weight: 2 *(Light, Average or Solid framed characters);*

      1.5 *(Small frame);*

      2.25 *(Huge frame).*

Encumbrance: 0

Cost: 150-300

Coverage: Chest, abdomen.

Description: A thinner version of Flak armour, ballistic vests are designed to offer protection against fragments and low velocity splinters, but are not intended as bullet proof protection. Ballistic vests have, however, proved capable of resisting low energy cross section ammunition (regular "ball" pistol ammunition) and I.L.R. 6mm pistol rounds. Ballistic vests lack the impact absorbing platelets and padding of full flack armour.

Ballistic vests will often be found being worn by logistics vehicle crews, pilots of non combat military aircraft and the like. Many police and security men might also wear light ballistic armour rather than the more cumbersome military suits.

Armour type: Flak armour

Penetration resistance: 8

Impact distribution: 3

Weight: 3.5 *(Light, Average or Solid framed characters);*

      3 *(Small frame);*

      4.25 *(Huge frame).*

Encumbrance: 1

Cost: 300-400

Coverage: Chest, abdomen, neck

Description: The most common form of body armour amongst ConFed troops, flak armour is an armoured body jacket formed from monomolecular laminate tiles sandwiched between layers of exotic ballistic fabrics. Flak armour is not made to cover the wearer's limbs, as this would be prohibitively cumbersome, but variants made on some worlds do have flaps which cover the upper arm. Flak armour is the standard armour of high tech combat infantry units, combat aircrew and combat ground vehicle crew.

Flak armour has adjustable side panels which allows a suit to fit a great variety of body shapes.

NOTE: The extensive collar of standard ConFed flak armour is typically worn open at the throat, and will not normally protect the wearer's neck from the front. If the suit's neck protection is fastened up, raise the suits encumbrance up to 2.

Armour type: I.L.R. Ballistic armour

Penetration resistance: 4

Impact distribution: 3

Weight: 3

Encumbrance: 1

Cost: 300-400

Coverage: Chest, abdomen, arms, legs, neck

Description: Unlike the ConFed, the Independent Lapine Republic prefers to give its troops a small measure of armoured protection over the largest possible area of the body. Thus Republican combat troops will normally wear a set of overalls fashioned from padded ballistic material. Plate inserts may be added to cover the frontal chest and abdomen, raising the armoured protection in these areas to 7 penetration resistance and 4 impact distribution, at a cost of raising the suit's encumbrance to 2 and its weight to 4.5 kilos. Like E.D.F. flack armour, an I.L.R. ballistic armour's collar does not normally protect the wearer in the front.

Armour type: Battle helmet

Penetration resistance: 8

Impact distribution: 2

Weight: .75

Encumbrance: 0

Cost: 100

Coverage: Skull. The helmet will protect the wearer's upper/lower face from the sides and rear.

Description: A light monomolecular laminate helmet. Most military helmets are open faced, but can be fitted with a visor which offers some small arms/ splinter protection to the upper face (pen res 2, impact dist 3), at a cost of reducing the wearer's intuition by 1. Most battle helmets come equipped with an integral short range communicator.

BAGS AND CONTAINERS:

In a game which uses cards to represent equipment, containers can become quite important. Use appropriately marked envelopes to represent "velcro'ed" pouches, bags and containers, and check carefully on the amount of equipment which players try to store in them.

The E.D.F. has a standard baggage allowance of 16 kg's, including kit (not including vacc suits!). Umpires should keep a careful track· of baggage weights and volumes.
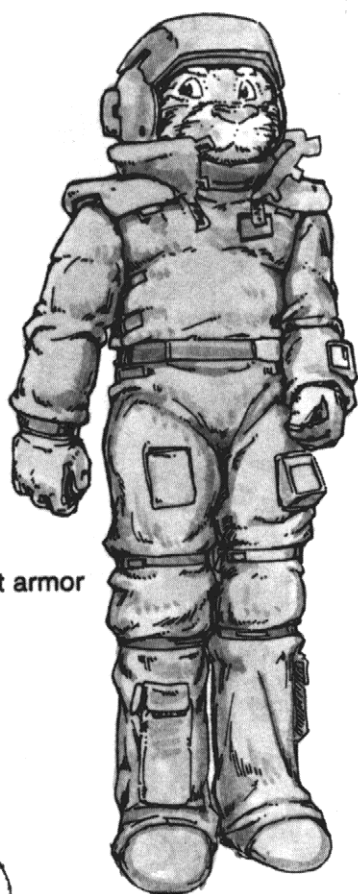
EDF aircrew light armor

EDF full battle armor

ILR skirmishing battle dress

ILR special assault armor

ITEM	COST	WEIGHT	NOTES
Backpack, simple	20-50	1/2kg	
Backpack, hiking	50-100	1/2kg	1.
Briefcase	100-200	1kg	
Canteen	10-15	1kg (full)	2.
Duffle bag	10-20	1/4kg	
Handbag	50-100	neg	
Jerry-can	20-50	2kg	3.
Magazine pouch	2-5	neg	4.
Pocket	-	-	
Pouch	2	-	5.
Purse/wallet	20-100	neg	
Suitcase	75-150	1kg	

1. 2 encumbrance when carried.
2. Holds 1 liter.
3. Holds 20 liters.
4. Holds a max of 2 x 20 rnd magazines. Magazine pouches are usually "velcro'ed" on to a suit of body armour or combat fatigues.
5. Pouches of all sorts of sizes are commonly "velcro'ed" onto clothing.

CLOTHING:

Even though most critters come equipped with fur coats, clothing is still a neccesity for most mammals due to the need for pockets, protection or simply because of nudity taboos (although there are a few worlds which are fairly liberal on this point). The exception to the above are avian characters, who will normally only wear decorative articles/rank badges and pouches, having neither the need nor the desire to wear clothes.

Clothing is bought as "outfits", comprising a full set of clothes, footwear, and a couple of changes of shirt and underwear. A full set of clothes weighs effectively nothing when worn, but masses 2 to 3 kilos when packed.

OUTFIT	COST	ENCUMBRANCE
Formal clothes	300-1000	2
Business clothes	200-500	1
Street clothes	120-200	
Work clothes	100-160	
Cold weather clothes	200-300	1

In addition to the above outfits, characters might wish to purchase an overcoat, cloak or over jacket. These items may be had for between 50 and 150 credits, and weigh between 1 to 3 kilograms.

Clothing styles.

The illustrations throughout the rules give a pretty good indication of the current fashions in ALBEDO. The most important note on clothes would be that many styles use velcro strips to allow them to conform to a variety of different body shapes. These adjustments are usually made on the garment's side panels to avoid muddling the lines of the garment.

Jewellery confines itself to fairly broad pieces which will not be concealed by the fur. Neck bands and bracelets are thus more likely than delicate chains or rings.

EDF utility overalls

EDF general duty uniforms

EDF formal dress uniforms

EDF battle dress

E.D.F. Uniform.

A brief description of the uniforms and equipment of the ConFed E.D.F. is now probably in order. We will divide E.D.F. uniforms into three sections - Combat uniform, Starship crew combat uniform and service dress.

- Battle dress: Green or camouflaged protective coveralls and flak armour worn over a vacc suit liner (blue). Gloves, boots and personal weapons complete the picture. All E.D.F. troops who are expected to come near a fire zone will wear head protection.

Flak armours and fatigue suits are equipped with "velcro" tabs to allow the securing of equipment pouches to the soldier. A medical status display is always affixed to the armour's left chest. The infantry soldier will wear a battle helmet equipped with a short range comm. Officers and AFV crews will normally have a vacc suit helmet (lacking the visor unit) and L.R. Comm packet for air liason and command co-ordination. Aerodyne crews will have full vacc suit helmets (visor unit included) and L.R. comm packets.

- Starship crew combat uniform: Ship uniforms consist of the usual protective coveralls worn over the ubiquitous vacc suit liner. Starship crew fatigues are normally well covered in velcro patches to facilitate movement in free-fall. Crew on combat alert will don vacc suit helmets and flak armour.

- Service dress: Neat, high collared adaptable jackets worn with trousers and forage cap are the normal service wear of E.D.F. personnel (green for planetary forces, blue for aerospace forces). More elaborate formal mess gear or full dress uniform are

available, and would be worn at special functions or full dress parades.

Homeguard uniforms vary greatly from planet to planet, although most planetary forces will use body armour and helmets copied from the E.D.F. model. Uniform clothing is not always based on E.D.F. patterns, and headgear in particular tends to vary widely from planet to planet. Berets, kepis, peaked caps and glengarries have all found favour with various formations.

COMPUTERS:

Computers are a very common tool in ALBEDO's technic society. An individual's hand computer will serve as his newspaper, receive his mail and perform a variety of other handy functions by remote linking into net or mainframe sources. Most bulk data is now stored on hi-density "laser disk" (storing the equivalent of perhaps a million pages of written text), and most computer memories are non volatile (ie they retain their current memory when switched off). Computers will accept verbal or keyboard input.

Computer system type	Cost	Weight
Hand computer	100	neg
Portable computer	300	.25
Home computer	500-800	1
Mini processor	5000	5
Processor core	10,000	6
A.I. core	50,000 +	8
Bulk data storage disk	5,000	2
Database package	20,000 +	5
Major system interface	10,000	2

Large computers and artificial intelligences are built up in kit form, with a core being linked into data bases and then mated to the systems which it is supposed to monitor.

FOOD, DRINK AND LODGING:

In an endeavour to encourage realistic play, it is important that the umpire does not forget that all characters must eat, drink, and have somewhere to stay. While the "socialist" governments on the ConFed's older central systems provide their citizens with basic housing and food (which includes rent and utilities), other environments may force characters to expend money to provide themselves with these assets. Depending on the quality, food and housing in the outworlds can be quite pricey. The food and drink section is also useful when someone decides to carouse or to take a client out to dinner. Remember that more money must be spent if the meal or lodgings are to be of high quality.

FOOD AND DRINK	WEIGHT	COST
1 Weeks camping rations	5kg	30-50
1 Weeks concentrated rations	2.5kg	70
1 weeks groceries	10kg	30-40
Take away food, snack	-	2-5
Take away food, meal	-	5-7
Restaurant meal	-	8-25
Catering for a party	30kg	200-300

Military "survival" rations are available at a cost of 6 credits for a packet designed to support one being for 1 day. These "iron rations" weigh .2 kilos, and consist of a selection of nutritional bars. Their taste leaves much to be desired, and they fail to properly create the illusion of being "full". On the third consecutive day of living on survival rations, penalize characters with the loss of 1 non recoverable fatigue point (which will disappear as soon as the character eats proper food).

LODGING	COST
1 Person tent	30-40, Weighs 3/4 kg
2 Person tent	40-50, Weighs 1 kg
3 Person tent	50-70, Weighs 1.5 kg
1 night at a travellers hotel	20-50
Rented flat or house, per month	350-450

HOME GOODS:

Household goods are essential creature comforts for any character. Entertaining a client in a bare room, or living in a bare apartment can be both uncomfortable and embarrassing. State provided housing and military quarters will usually come equipped with basic home goods.

ITEM	COST
Minor appliance (food processor, ghetto blaster etc)	50-200
Casual furniture (bean bags etc)	c.50
Simple furniture (utility desk etc)	c.100
Major items of furniture (stereo, lounge chairs, beds etc)	300-1000

Furniture tends to run towards fairly clean, functional designs.

HOSTILE ENVIRONMENT EQUIPMENT:
Military vacc suit helmet.
Penetration resistance:
    Helmet = 8 (Skull).
    Visor unit = 2 (upper face), 6 (lower face)
Impact distribution: 3
Weight: 1.2 (.9 kilos with visor unit removed but comm gear retained)
Cost: 300 + cost of comm package
Coverage: Skull. Visor unit covers face.
Encumbrance: 1 while visor is attached.

The vacc suit helmet is a sturdy and flexible piece of equipment with armoured protection equal to battle helmet standards. The basic vacc suit helmet is a three piece unit consisting of a fairly hemispherical open faced helmet, a separate visor/faceplate unit and a communications/life support package. Vacc suit helmets are always worn with a helmet liner, which keeps the wearer's earphones and hair in place.

The basic helmet unit is often worn by itself in pressurized environments, and is common wear for E.D.F. officers. Attached to the helmet is an integral visor guard, which may be slipped down to cover the faceplate in case of flashes or abrasive particles (pen. res. of 4, but the wearer's intuition score and spot hidden skills are penalized by a DRM of 2). The helmet has integral S.R. communications gear.

The faceplate is a separate unit which may be fitted onto the basic helmet, allowing the helmet to be fully sealed when linked to a vacc suit or vacc suit liner.

At the back of the helmet's skull is an exterior communications/life support unit. These come in a number of configurations, which include the following:

- L.R. Comm: A multi-channeled air/ground military communicator. L.R. Comm packs are common wear for combat aerodyne crew and infantry officers, who often have need of air liason equipment. (Cost = 400 credits)

- Life support Monitor: The standard packet for vacuum wear. A life support monitor provides the helmet with short range radio and laser communications equipment, and it will monitor a vacc suit's internal/external environment and keep the wearer informed (via a head up display) of any losses of pressure, undesirable gases or similar mishaps. (Cost = 500 credits)

Civilian vacc suit helmets.
Civilian versions of vacc suit helmets are one piece bubble helmets designed to screw into the neck ring of a civil vacc suit. Bubble helmets are encumbrance 1, have a penetration resistance of 6 and cost 300 credits. They normally come equipped with short range comms.

Vacc suit liner.
Cost: 300
Weight: neg
Encumbrance: 0

A tight, flexible body sheath designed to afford the wearer a measure of protection from a vacuum. When accompanied with a vacc suit helmet, gloves and boots, vacc suit liners will protect the wearer from vacuum exposure for a limited amount of time. After 30 minutes of exposure, characters will start to suffer discomfort from their unsupported internal organs, which causes all fatigue losses from movement to be doubled.

Torso supporter
Pen res: 1
Impact dist: 1
Cost: 300
Weight: neg
Encumbrance: 1

Designed to compliment a vacc suit liner, semi-rigid torso units will provide the wearer with the support for the abdomen and lungs lacking in a vacc suit liner. This extends the time that a vacc suit liner may be worn without adverse fatigue effects to about 60 minutes.

Vacc suit.
Pen res: 3
Impact dist: 1
Cost: 8000
Weight: 5 (Light, Average or Solid framed characters);
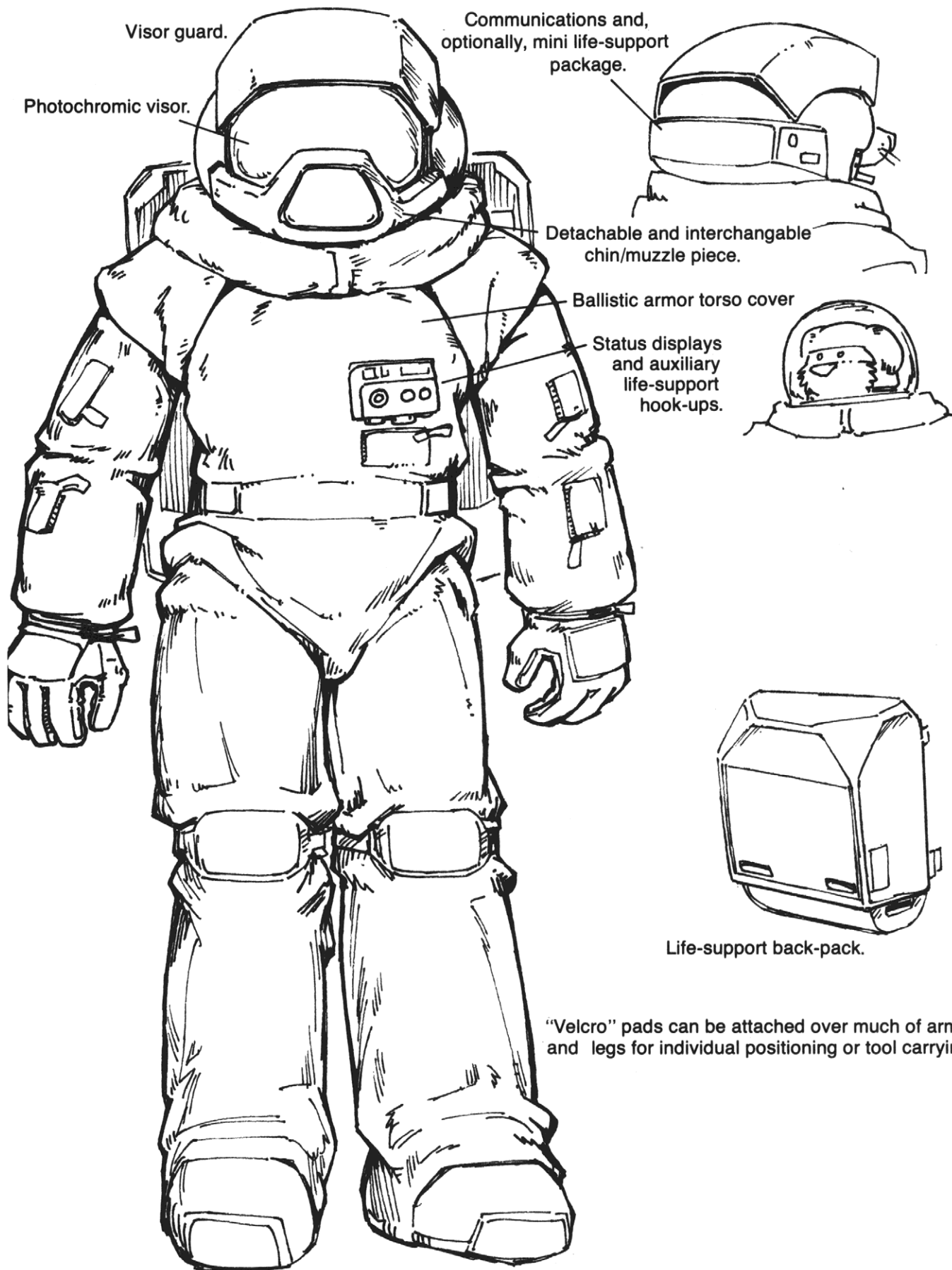   4 (Small frame);
        6 (Huge frame).
Encumbrance: 2

The standard Vacc suit is a tough, double skinned garment which sandwiches a layer of puncture sealant between its inner and outer skins. This sealant will plug most minor punctures and tears, but heftier breaches must be sealed with emergency suit patches, one or two of which are stored in the emergency equipment pockets of every suit. The joints of the suit are "concertina-ed" to minimize the encumbrance of the suit, but the garment still manages to be fairly stiff and heavy.

The standard Vacc suit has a number of "velcro" patches on the soles/toes of the feet, the knees, elbows, thighs, shins and gloves to facilitate movement or to attach items of personal equipment. Magnetic boot soles and palm liners may be activated at the whim of the wearer if so desired. Other suit fittings include lights, and jacks (plugs) allowing the wearer to hook into intercom or computer systems. The pockets of most suits will contain emergency suit patches and a length of tether line.

Visor guard.

Communications and, optionally, mini life-support package.

Photochromic visor.

Detachable and interchangable chin/muzzle piece.

Ballistic armor torso cover

Status displays and auxiliary life-support hook-ups.

Life-support back-pack.

"Velcro" pads can be attached over much of arms and legs for individual positioning or tool carrying.

Military vacc suits have the torso fitted with flak armour, which gives the suit the same coverage and protective value as a flack jacket in the chest, abdomen and neck (the neck is not protected from the front). The addition of armour to a vacc suit raises the suit's weight by the weight of a set of flak armour, but does not increase the suit's encumbrance.

Hostile environment suit.
Penetration res: 5
Impact dist: 3
Cost: 20,000
Weight: 9 *(Light, Average or Solid framed characters);*
 7 *(Small frame);*
 11 *(Huge frame).*
Encumbrance: 3
Hostile environment suits are bulky, rigid armoured vacc suits designed for wear during repairs on "hot" areas of starship drive units, or in areas prone to high concentrations of floating junk. Their ability to handle punctures through their integral sealant material is very high, as is their resistance to accumulating punctures in the first place.

Life support pack.
Cost: 5000
Weight: 5
Encumbrance: 0 unless in close quarters, in which case encumbrance = 1
The standard life support pack, designed for use with vacc suits which are independent of "umbilicals", is a lozenge shaped back pack which slots directly onto the rear of the suit. The normal issue life support pack contains air scrubbers and tanked oxygen capable of sustaining the wearer for about 4 hours, and includes gas jets for personal manoeuver. In emergencies, the oxygen supply can be used as additional manoeuver fuel.
A variant on the basic form has half the normal oxygen supply, but three times the manoeuvring capacity of the standard pack. The life support packs of some vacuum work crews will have additional features allowing a monitoring computer to remote control the unit if the wearer should become incapacitated. This feature costs an additional 500 credits, and its use requires the wearer to be in communications contact with a monitoring computer (either by radio or cable link).

Rescue ball.
Cost: 250
Weight: 3
Rescue balls are clear plastic envelopes with a three hour oxygen supply. They are designed as emergency

equipment for vacuum installations and large vessels. Getting into a rescue ball in only one turn requires a Co-ord check vs 10.

Punctures to self-sealing suits.
The chart below shows the score required on 1D6 for a vacc suit to successfully seal a puncture using only its internal sealants. Any breach may be sealed with an emergency patch, requiring a roll of the character's M.Dex vs 10 to do so. Each attempt to patch a suit takes one full turn.

Type of suit breach	Vacc suit	Hostile env. suit
Minor puncture	1-6	1-6
Puncture	1-4	1-5
Tear	1-3	1-4
Major tear	no	1

- Hits to a vacc suit helmet will not self-seal. If a character's helmet is penetrated, then the suit will explosively decompress.

INFORMATION:
Information exchange and communications is the life blood of any technological society. Most societies allow citizens a basic allowance of public domain computer time and library access, which are readily hooked into through the average citizens hand computer. This is supplemented by free computer "billboards", public debate nets and information exchanges. Player characters who wish to perform extensive research may have to pay for the additional access, and are referred to the following chart.

INFORMATION	COST
Purchase a map or paperback book	6-10
Purchase a text book	25-50
Minor software package	25-50
Major software package	100-300
Specialist software package	500-1000
Library access cost	2-5
Single use of a public domain A.I.computer	5
Send message via routine FTL torpedo	10

Use of private newspaper/public debate nets costs 5 credits per month (access to the state nets will be free on socialist worlds). This gives the character ready access to current events and public opinions.
For a charge of 20 credits, the character may purchase minor advertising space on a "newspaper" net.

MEDICAL EQUIPMENT & SUPPLIES:

Since people can get hurt, it is important to include the means of repairing physical damage. Despite the volume of medical equipment available, I can assure you that the ones your characters will get the most use out of will be bandages and pain killers - and this is as it should be. Medical skill is required for the use of any advanced equipment.

Medical equipment.

Field bandage

Cost: 1

Weight: neg

Field bandages are used in the emergency staunching of wounds. They are commonly kept in pouches on soldier's armour, and make a damned fine tea strainer.

First aid kit

Cost: 30-50

Weight: 1kg

Contains constrictive bandages, field bandages, Coagulant sprays, quick setting foam splints and a set of slings for broken limbs, along with a variety of antiseptics, pain killers, anti-biotics and an injection gun.

Medical status display

Cost: 100

Weight: neg

A small display unit which attaches to the breast of a vacc suit or combat armour. A medical status display is designed to show the wearer's pulse, respiration, blood pressure and EEG readings at a glance.

Medical pod

Cost: 200,000+

Weight: 40

Med pods are designed to provide patient support for major wounds. As such, they replace lost blood, treat shock, and co-ordinate the efforts of a doctor and medical computer to best advantage. Give a -2 recovery DRM to any patients with massive or catastrophic wounds, or who have suffered severe fatigue from blood loss (+3 fatigue DRM or greater) if they are swiftly brought to a med pod.

Life support unit.

In near hopeless cases, life support units can freeze a character into cold sleep until it can be brought to better medical care. Characters who are frozen into cold sleep survive the experience if the can successfully make a roll of their stamina vs 10 (do not apply fatigue DRM's - lets give them a sporting chance). . .

Medical services.

The worlds of the inner ConFed will provide free medical care to their citizens. On capitalist worlds, such services must be paid for in hard cash.

SERVICE	COST	TREATS?
Visit to Doctor	20-50	Minor illnesses, grazes
Visit to hospital emergency	100-200	Sets bones, dresses light wounds etc.
Hospitalization per day	500-800	Serious wounds, massive wounds.
Intensive care per day	1000+	Catastrophic wounds.

Common drugs.

DRUG	USE	COST	EFFECT
Pain killer	oral	.2	Removes the pain from headaches, grazing hits etc (reduces "shock" fatigue by 1 point). Takes 6 turns to take effect.
Coagulant	spray	5	Gives a -2 DRM to control bleeding.
Hvy pain killer	injection	5	Removes 2 points of shock fatigue after 4 turns.
Synaptic damper	injection	10	Removes 5 points of shock fatigue after 4 turns. Reduces all neuro physical characteristics to 1/2 their original level.

A character may not gain benefit from more than one dose of painkiller/pep pill at once.

ROBOTS:

Several types of robot are currently available on the commercial market in ALBEDO, most of which take full advantage of the high state of AI technology. Robots are commonly used to perform a variety of tedious or dangerous tasks, providing the bulk of the manual labour required for the maintainance of technic society. Robots see no use as combative "soldiers" due to the abhorrence with which this concept is viewed (the computers are not too keen on the idea either!)

Robots are created in specialised, practical shapes, and are not specifically anthropomorphic. Robots race about the place on tracks, legs or wheels, and have senses and manipulative devices designed purely for their intended job.

Most simple robots will cost at least 10,000 credits. Robots with more extensive memories, manipulative equipment and special fittings will cost considerably more. Some possible types of robot might include fire fighting 'bots, valets, cargo loaders, librarians, and repair men. The expensive robots necessary for the crewing of installations and starships will usually be supplied or leased from the state.

Example: **Probot**
Cost: 75,000
Weight: 130
A flexible, intelligent machine designed to provide a wide array of sensitive detection gear for search/ exploration tasks. The robot has gas jets for zero-G manoeuver, 4 legs equipped with grippers, and a flexible neck equipped with sensory arrays and two small manipulative arms. The device's sensors include the following: UV/Visible/IR optics, sonar/ seismar, limited mass detection, charged/uncharged particle sensors, pan spectrum EM monitors and audio pickups.

Probots are useful items for exploring the extent of battle damage on starships, search and rescue missions and scouting.
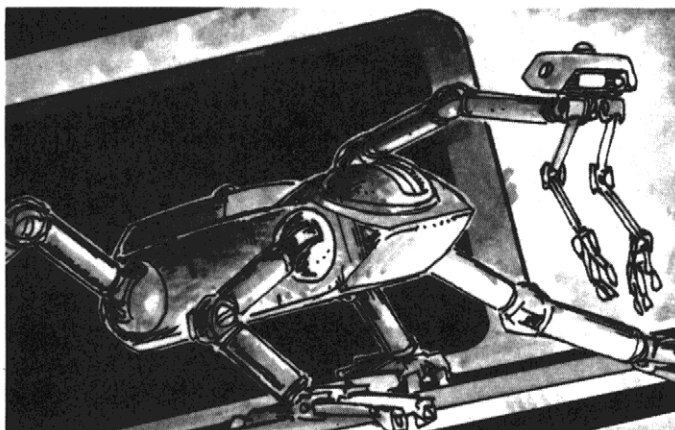
EXAMPLE: Engineering robot
Cost: 50,000
Weight: 150
The hands and eyes of a starship A.I. net, engineering robots are used to effect repairs and perform construction tasks in zero-G or hostile environments. Engineering robots are equipped with legs, gas jets, a number of light and heavy manipulative arms, tools, and have sensory gear attuned to their task of close in work. Most starships will have a gaggle of engineering 'bots on board for use in emergencies, and for performing routine maintainance. Simpler versions of this device will be used for construction work and repairs performed on planetary surfaces.
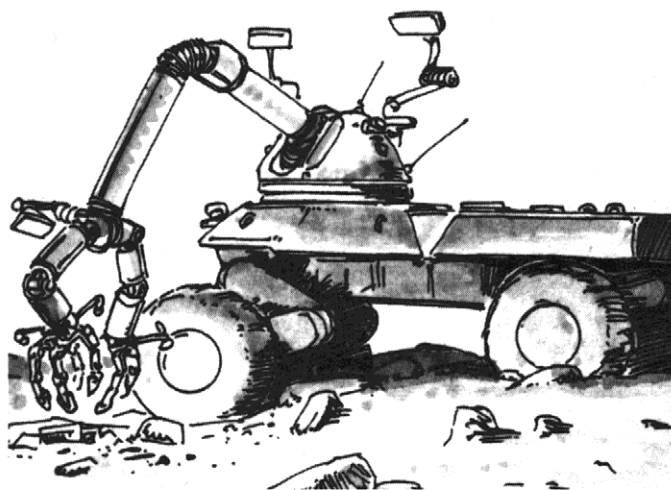
SENSORS:

Current sensor systems include ultra-violet and infra red optics, sonar/seismar, mass detection, charged/uncharged particle sensors and pan spectrum E.M. monitoring. A few of the systems that players will find most useful are listed below. Other items such as miniature directional microphones etc are available, but are special tools (and therefore custom made to order).

E.M. Detectors:
Cost:8,000+
Weight: 10+
Usually a part of a star ship or vehicle sensor system, E.M. detectors register the E.M. transmissions from powered equipment and transmitters. The ranges of E.M. detectors will vary depending on the size of the detection gear (the equipment in aerodynes will have a range of a few kilometres, whereas the equipment in starships operates across immense distances). Long ranged equipment will usually lack the pin point accuracy of the smaller detectors.

Movement sensor:

Cost: 200
Weight: Neg
Small, short ranged devices designed to be installed in a static position. Movement sensors are set to give off an alarm when movement is detected in a set 60° arc.

C.C.D. Eyepiece:

Cost: 200
Weight: Neg
A solid state night sight in the form of a "lens cap", which is designed to clip onto a set of binoculars or a firearm sight. Characters making spotting attempts at night with C.C.D equipment should not be penalized for the poor light conditions.

Thermal sight:

Cost: 800
Weight: .5
A heavy unit which clips onto the front of visual scopes on firearms, or which may be held in the hand as a sort of "telescope". Thermal sights are capable of showing up the heat of targets which are sheltering behind cover, and thus "soft" cover (partial concealment) does not count against weapons equipped with thermal sights. Other effects on spotting attempts are similar to the C.C.D. eyepiece listed above.

Night goggles:

Cost: 400
Weight: Neg
C.C.D. goggles/visors used to provide troops with proper night vision. Night goggles are often attached to battle helmets as a visor (with protective values as described under "battle helmets" above). C.C.D. equipment will blank itself out rather than allow the passage of light levels high enough to damage the wearer's sight.

Pocket E.M. Detector:

Cost: 40
Weight: Neg
A portable warning beeper used to warn of radar sweeps or unaccountable transmissions in the user's immediate area.

TOOLS:

The following category contains all the miscellaneous equipment which the characters might want to use for purposes other than hurting other people. Thus the category includes everything from power tools to radios.

TOOL	COST	WEIGHT	NOTES
Axe	50-75	2.5	
Bicycle	100-200	6	
Binoculars	200-300	1	
Breathing aparatus, scuba	500-700	12	1.
Breathing aparatus, light	200-250	3	2.
Calculator	10-50	neg	
Camera, instamatic	50-100	.5	
Camera, good quality	400-500	1	
Camera, micro	400	neg	
Electronics tool kit	100-200	5	
Emergency car tools	30-50	3	
Explosives, industrial	100	1	
Explosives, plastique	1000	1	
Fire extinguisher	150	5	
Flare pistol	300 +5 per shot	.5	
Gas mask	50-75	.5	
Hand tool	8-12	.2 to 1	
Inertial locator	200-300	neg	
Lamp, infra red	100-200	.5 to 1	
Lantern	25-50	1	
Lighter	1	neg	
Mechanical tool kit	300-500	10	
Megaphone	100	3	
Monitor (computer display)	200-500	6	
Oxy-aceteline torch + gas	12		
Pager, pocket	10	neg	7.
Periscope, binocular	250-350	1	
Power collector, solar	1000-1200	30	
Power tool	80-350		
Radiation counter	100	1	
Radio headset, small	50	neg	8.
Radio, handset	100	.25	3.
Radio, short range, civil	100-300	1	4.
Radio, long range, civil	300-500	4	5.
Radio, short rng, military	100	1	4.
Radio, long rng, military	400	2	5.
Rope, 300kg test, 100 m	50	3 kg	
Tarpaulin, shelter half	10-20	.25	
Tarpaulin, full tarp	50-60	2	
Torch	5-25	neg to 1	
Watch	10-200	neg	6.
Video camera + laser disk memory	300-800	1	

NOTES:
1. 3 hour oxygen supply.
2. 20 minute oxygen supply
3. Range = 1 kilometer.
4. Range = 5 kilometers
5. Range 2-300 (ground to low orbit) kilometers. The main difference between civil and military communicators is that military radios send their messages in condensed pulses to reduce the chance of the transmitter being pin pointed by detection gear.
6. Integral space invader game optional.

7. Pocket pagers are usually linked to a home computer. They will alert the carrier of any urgent phone calls which must be answered, and give some details on the call through a digital readout built into the machine.

8. Range = 500 metres.

There are no laser cutting or welding tools.

TRAVEL COSTS:

Movement and travel can be a major drain on anyone's budget (although the citizens of the "socialist" inner ConFed worlds will normally have a limited amount of free access to public transport nets). Please note that space travel is rather beyond the means of most people due to the prohibitive cost. Government or company subsidized programs are the only way most non starship crew, colonists or military personnel will get to see far planets.

TRAVEL TYPE	COST
Train/bus trip within a city	1-3
Taxi trip within a city	5-20
Car rental, per day	40-60
Bus/train trip between cities (depending on distance)	50-300 depending on distance
Plane ticket between cities	300-400
Plane ticket between continents	500-800
Space travel within a system	2 000-4 000
Starship ticket	5000-10,000
Transport cargo by starship per tonne	500-1000

VEHICLES:

A huge array of vehicles are available to the societies of ALBEDO. Unfortunately, a proper discussion of vehicles and vehicle combat will have to wait for a future volume. For the present, we will only detail the vehicles which characters will be most likely to use or encounter.

Small ground vehicles will usually be powered by hydrogen combustion engines (though a variety of other power plants may be used, depending on the local tech base). The larger ground vehicles in ALBEDO are powered by electric motors set into each wheel hub, which draw their power from gas turbine generators (high tech vehicles often have heat/ energy converters added to the vehicle to scavenge extra power and to disperse waste heat). Ground vehicle engines are comparatively quiet.

The materials technology of ALBEDO has produced monomolecular armour, a composite material constructed from monomolecular laminates of dissimilar metallic and non metallic materials. The resulting armour is extremely strong, and subsequently most vehicles clad in monomolecular armour are essentially proof against all but vehicle mounted heavy weapons. Their hulls are proofed against mines, high explosives and light thermal penetration warheads. Only heavy weapons such as hyperkinetic guns stand a real chance of killing an armoured vehicle, although close range, concentrated cannon fire can occasionally chew its way through laminate armour by repeated hits on the same area.

Military vehicles thus tend to polarize themselves into anti vehicle and infantry support roles. Armoured vehicles are surprisingly small due to the compactness of their engines, weapons systems and armour, greatly facilitating their air portability. Most EDF vehicles are tracked, while the ILR uses mostly wheeled vehicles. Homeguard forces might have just about any type of vehicle, but most planetary defence forces will have spare part compatibility with the standard equipment of their allies.

A variety of civilian ground cars and light trucks are available to the public. The level of private car ownership on the worlds of the inner ConFed is quite low.

Ground vehicle Chassis types:
Wheeled chassis.

Wheeled chassis form the basis of most civil and many military vehicles. They are popular due to their cheapness and durability.

Chassis Type: **Cycle**
Structure: 3
Max. load: Driver + 1 passenger
Cruise Speed: 80
Top Speed: 120
Cost: 3000-5000

Chassis Type: **Ground Car**
Structure: 6
Max. load: Driver + 4 passengers
Cruise Speed: 60
Top Speed: 110
Cost: 8000-10,000

Chassis Type: **Van**
Structure: 8
Max. load: Driver + 8 passengers
Cruise Speed: 60
Top Speed: 100
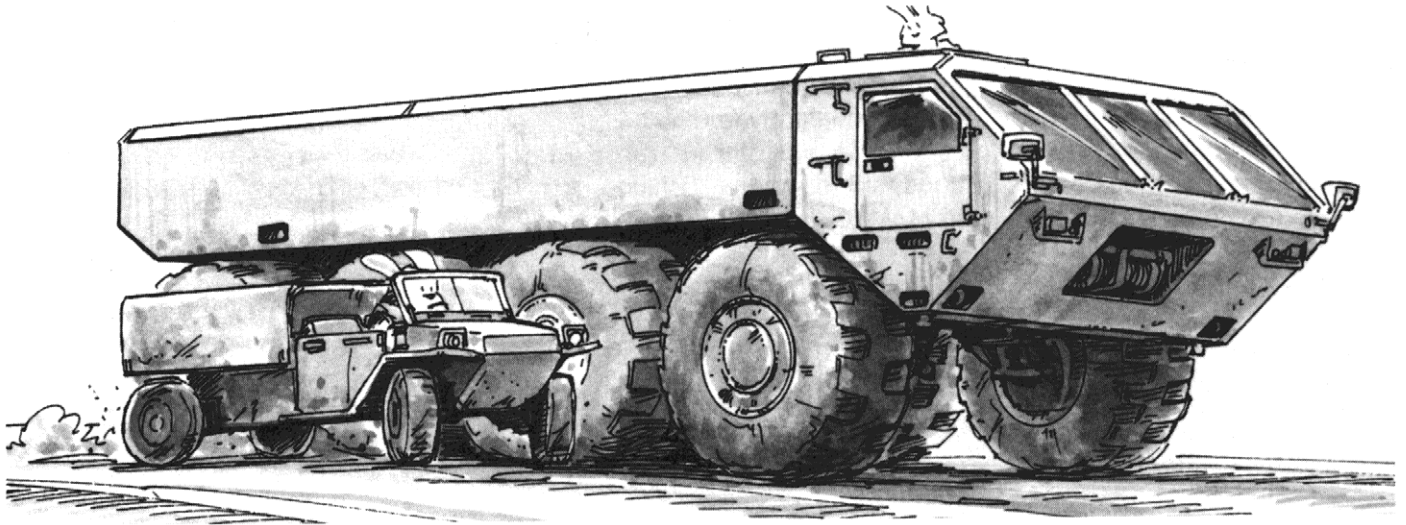Cost: 10,000-15,000

Chassis Type: **Truck**
Structure: 10
Max load: Driver + 12 passengers
Cruise Speed: 50
Top Speed: 90
Cost: 20,000-30,000

Chassis Type: **Heavy truck**
Structure: 12
Max load: Driver + 24 passengers
Cruise Speed: 50
Top Speed: 90
Cost: 40,000-80,000

MILITARY CHASSIS:
Chassis Type: **4 Wheeled**
Structure: 8
Max. load: Driver, 1 passenger
Cruise Speed: 60
Top Speed: 100

Chassis Type: **6 Wheeled**
Structure: 10
Max load: Driver & up to 4 passengers (long bodied vehicles may carry 6 passengers).
Cruise Speed: 60
Top Speed: 100

Chassis Type: **8 Wheeled**
Structure: 12
Max load: Driver & a max of 9 passengers
Cruise Speed: 60
Top Speed: 80

Hover vehicles:
Also termed G.E.V.s (ground effect vehicles), air cushion hover vehicles are rarely used by the military since they are immensely handicapped by rough terrain, manoeuver poorly through tight streets, and produce a large amount of noise and dust.

Chassis Type: **Hover car**
Structure: 8
Max load: Driver + 3 passengers
Cruise Speed: 80
Top Speed: 160
Cost: 20,000-30,000

Chassis Type: **Light G.E.V.**
Structure: 8
Max load: Driver + 6 passengers
Cruise Speed: 80
Top Speed: 160
Cost: 25,000-35,000

Chassis Type: **Heavy G.E.V.**
Structure: 16
Max load: Driver + 48 passengers
Cruise Speed: 60
Top Speed: 140
Cost: 50,000-100,000

Tracked vehicles:
Due to their low ground pressure and high traction, tracked vehicles are popular in a cross country role. Most E.D.F. armoured vehicles are tracked (although they can operate on their road wheels if necessary). A major disadvantage with tracked vehicles is that they may shed a track upon performing a violent manoeuvre. Vehicles which shed a track suffer decreased manoeuvrability, and drop their maximum speed to 3/4 of the rated amount until the remaining track can be blown, after which the vehicle is treated as wheeled vehicle.

Military chassis
Chassis Type: **Tracked** (small/ medium/ large/very large)
Structure: 10/12/13
Max load: Driver & up to 8 passengers
Cruise Speed: 40
Top Speed: 80/80/70

The standard tracked vehicle is quite small to allow for air portability. Heavier vehicles are occasionally used by some Homeguard units.

EDF AV4 Armored Fighting Vehicle,
fitted with single 8mm remote control MG

meter
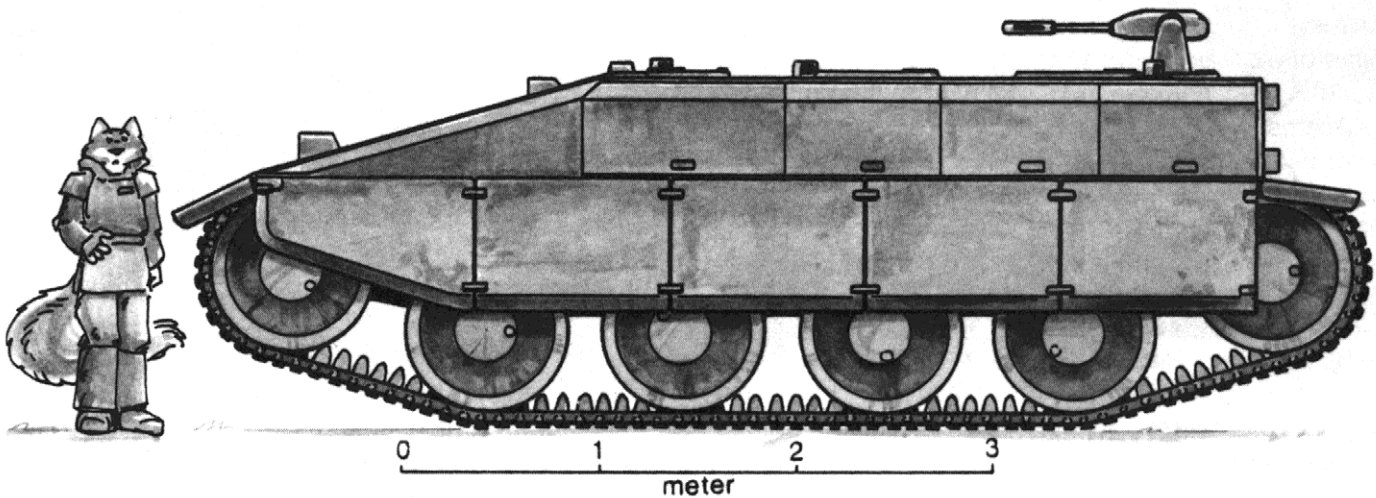
Armament:

Armoured vehicles may mount a turreted armament. Light armaments may be fitted onto any vehicle. 6 wheelers, 8 wheelers and medium/large tracked vehicles may mount medium armaments. 8 wheelers, and large tracked vehicles may mount heavy armaments. Co-axial weapons are usually 10mm to 16mm heavy machine guns, and may have gas, external pneumatic or electric actions.

Vehicles may also mount MGs, HMGs and grenade launchers in small remote mounts to supplement the vehicle's main armament.

Armour:

Armoured fighting vehicles will be equipped with composite laminate armour. Some military "soft" vehicles will have very tough sides (penetration resistance of 10).

Armour type	Pen res	Impact dist
Light composite	30 (front)	8
	28 (sides & rear)	
	24 (suspension)	
Heavy composite	37 (front)	8
	32 (sides & rear)	
	26 (suspension)	

Heavy composite armour may only be fitted to very large tracked vehicles. Such vehicles are mostly used by various homeguard forces. E.D.F. doctrine does not try for situations where heavy armour needed, but homeguards might have them, lacking the firepower in depth that the E.D.F. enjoys.

AIR VEHICLES.

Only three types of air vehicle need concern us here in the ALBEDO basic rules set - helicopters, fixed wing aircraft and aerodynes.

Fixed wing and rotary wing vehicles operate in the low subsonic speed range. When a higher speed vehicle is required, an aerodyne will be used.

Helicopters:

Helicopters are familiar vehicles due to their comparatively cheap cost (100,000 +) and general handiness. They are common civil vehicles, but see almost no military use at all except in a security monitoring role. They are specifically designed for a good hovering capability and high performance at sub-sonic speeds. When a faster vehicle is required, aerodynes will be used. Helicopters have a structure of 10 to 12.

Vehicle Type: **Helicopter**
Cost: 100,000+
Crew: 1 or 2
Structure: 10
Details: Rotary wing aircraft are common utility vehicles which are designed for high efficiency at low sub-sonic speeds, and a good hover performance. Helicopters lack the speed and flexibility of Aerodyne vehicles, but are far cheaper. Large cargo-carrying helicopters would have a higher structure rating, and a higher price.

Fixed wing aircraft:

Fixed wing aircraft are less fuel intensive than either aero's or helicopters, and thus fill the roles of low cost, low speed transport.

Vehicle Type: **Light fanjet.**
Cost: 50,000+

Crew: 1 + 1 or 2 passengers
Structure: 8
Details: ALBEDO's light pleasure aircraft is a robust little fanjet vehicle somewhat larger in size than a groundcar sedan. Capable of carrying two passengers at speeds of up to 800 kph, fanjets are capable of operating with minimal facilities.

Vehicle Type: **Cargo transport**.
Cost: 500,000+
Crew: 2 + either cargo or 20 or more passengers
Structure: 8
Details: High utility STOL aircraft used for the transit of non-urgent cargo and passengers. They come in a variety of size categories, and could use a number of different power plants depending upon local manufacturing capability and tech base.

Aerodynes:
The air vehicle which concerns us most in this game is the AERODYNE, a fusion powered vessel capable of operation within an atmosphere, or of manoeuver in space. As such, they are common and useful vehicles, and very much a part of day to day life for many military characters. An aerodyne consists of a semi-lifting body form powered by one or more small fusion reactors which provide high pressure, super-heated hydrogen which is routed through an array of intermix venturies to combine with the atmosphere before being shunted out for vertical or horizontal thrust. Manoeuvring for all axis are by defferential thrust, managed by on-board computer, which receives its inputs though the pilots grips and pedals.

The pilot's inputs, however, are for desired attitude rather than direct control, and the computer arranges thrust to suit, keeping track of attitude and environment so as to avoid any "controlled conflicts" into the ground or objects. The computer can also assist in fire control and combat manoeuvring, or even take over in case the pilot is disabled.

Aerodynes are highly versatile craft. Normally operating at subsonic speeds, properly adapted aerodynes may travel at high machs if the operator is willing to pay the penalty in increased fuel consumption. Simple preparation and increased fuel stores will allow aerodynes to operate in exo-atmospheric or even orbital flight. Aerodynes perform the duties of fighter aircraft, gunships, VERTOL troop transports, cargo vessels and light freighters. Most large starships could be expected to carry an aerodyne to serve as a shuttle/ship's boat.

The rated load capacities on aerodynes assumes a 3 G take off with a full load of fuel. Higher payloads may be carried, but at the penalty of lower speeds and shorter range.

All exo-atmospheric craft are in principal much the same. Bigger ships have multiple reactors or special modifications for long running forward thrusting. Ships designed for inter-planetary or interstellar work will have cabins designed for both vertical and horizontal orientation. Aerodynes are not designed to compete with true starships in space combat, but it is the flexibility of their aerospace role which holds the key to their success.

Tail Loading Ramp

Combat Troop Seat

High Performance
Ejection Seat

Main Landing Gear

Liquid Hydrogen Fuel Tanks

Intermix Venturis

CAG Fusion Reactor
Multi-Sensor/Laser Marker Turret
Nose Landing Gear
Armored Avionics Package
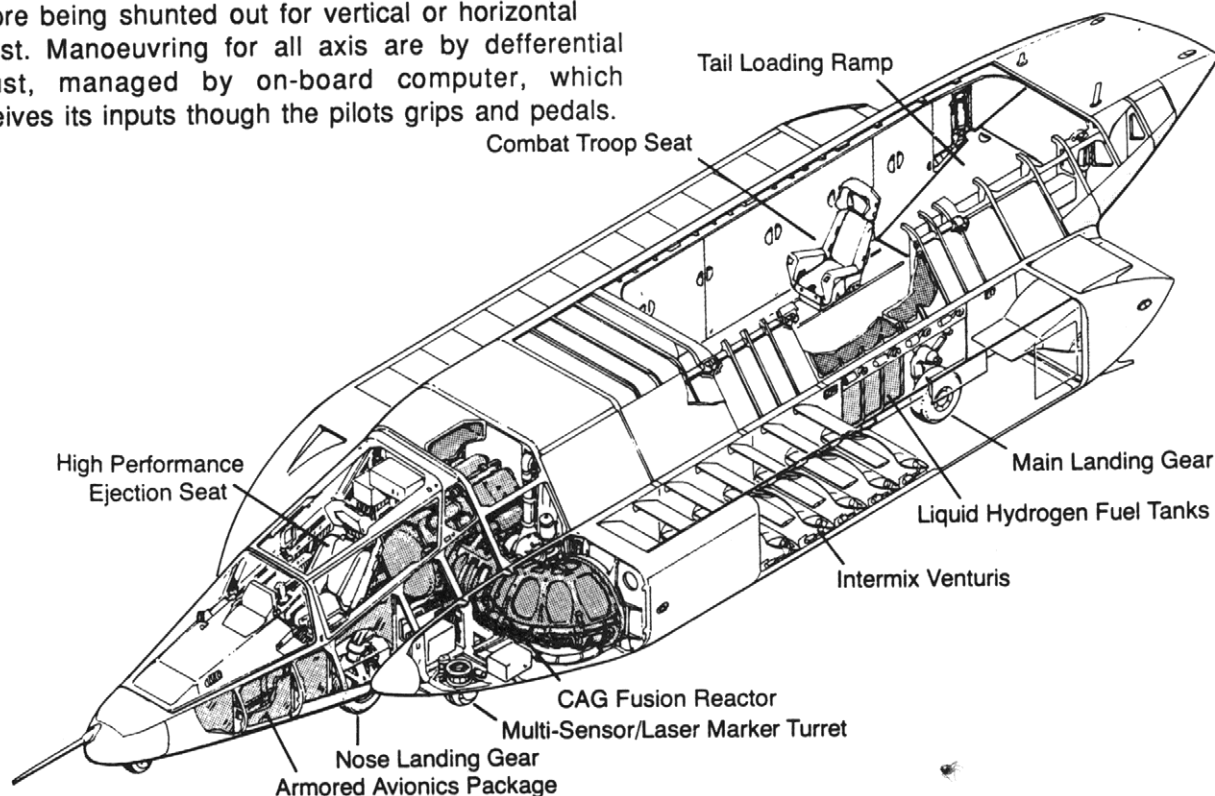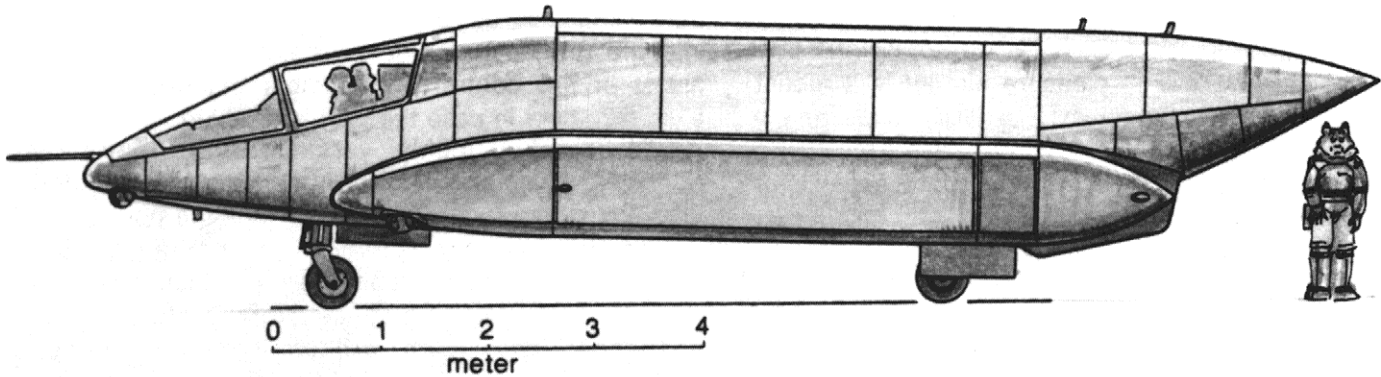
Note:
In combat against starships, aerodynes will always lose, since they carry no ordnance and lack the reaction mass and sensors of a true starship. Strikes by starship main weaponry against aerodynes will either cause a catastrophic or massive hit, or will vaporize the aero entirely.

Vehicle Type: **Air car**
Cost: c.500,000+
Crew: 1
Structure: 8 or 9
Details: A light two to four seater designed for good performance at sub-sonic speeds. Air-cars fill the role of small private aeroplanes. Air-cars are turbine driven, rather than fusion powered, using a high bypass turbojet to drive the thrust system. These vehicles have a limited top speed (circa 400kph), and a maximum range of about 1000 kilometres. Needless to say, air-cars may not be used for exo-atmospheric or orbital flight.

Vehicle Type: **Light Aero**
Crew: 1 or 2
Structure: 14
Details: Light utility vehicles which see use in a variety of roles. In civilian format, they may carry about eight passengers or 2000 kilos of cargo. Military versions are armoured, and may come in transport or gunship modes. Transports will carry about 6 fully equipped soldiers and have provision for 2 weapons mounts (beam weapons or auto cannon only). Gunships will carry 2 extra weapons mounts, and will have 1 or 2 crew specialists in addition to the normal crew compliment. The Aero 3 is a typical light aero.

Vehicle Type: **High performance aero**
Structure: 14

Details: Uprated versions of the light aero, high performance aeros have approximately the same size but offer higher payloads. While space considerations mean that this does not change the number of passengers carried to any real degree, the greater fuel load makes this vehicle faster than the light aero. Military versions carry a higher payload of armour, but otherwise have the same compliment of passengers and armament. The Aero 6 is a typical high performance aerodyne.

Vehicle Type: **Heavy aero**
Crew: 1 or 2
Structure: 16
Details: Heavy transports of various designs capable of shifting about 10 (the D10) to 36 (the D36) tonnes of cargo, or a large number of passengers. Military versions are used as vehicle landing craft and bulk transports, and are accordingly heavily armoured. Landing craft will normally have 2 ventral weapons mounts which may mount beam weapons or cannon. In gun-ship mode, these vehicles will add two more ventral beam weapons/auto cannon mounts, and a central pair of weapons mounts which may be equipped with light hyperkinetic guns. Gunships will carry additional crew specialists in the main hull to man the extra weapons.

Interstellar capable:
Interstellar aerodynes are formed by lining the hull of a huge cargo vessel with jump field generators and installing the capacitors and MHD coils required to power a jump drive. Interstellar capable aerodynes will have multiple reactors and decks oriented for use when the ship is under forward thrust.
Interstellar aerodyne transports are quite slow when compared to true starships, since fuel limitations dictate lower levels of thrust during the journey out of a system's gravity well.

Small Jet Transport

Small Helicopter

Medium Turbo-Fan Transport

Aerodyne A-3

A-8 Gunship

D-32

Small FTL Courier

F-240
Exo-atmospheric Shuttle

0   2   4   6   8
meter

Autonomous Combat Vehicle.
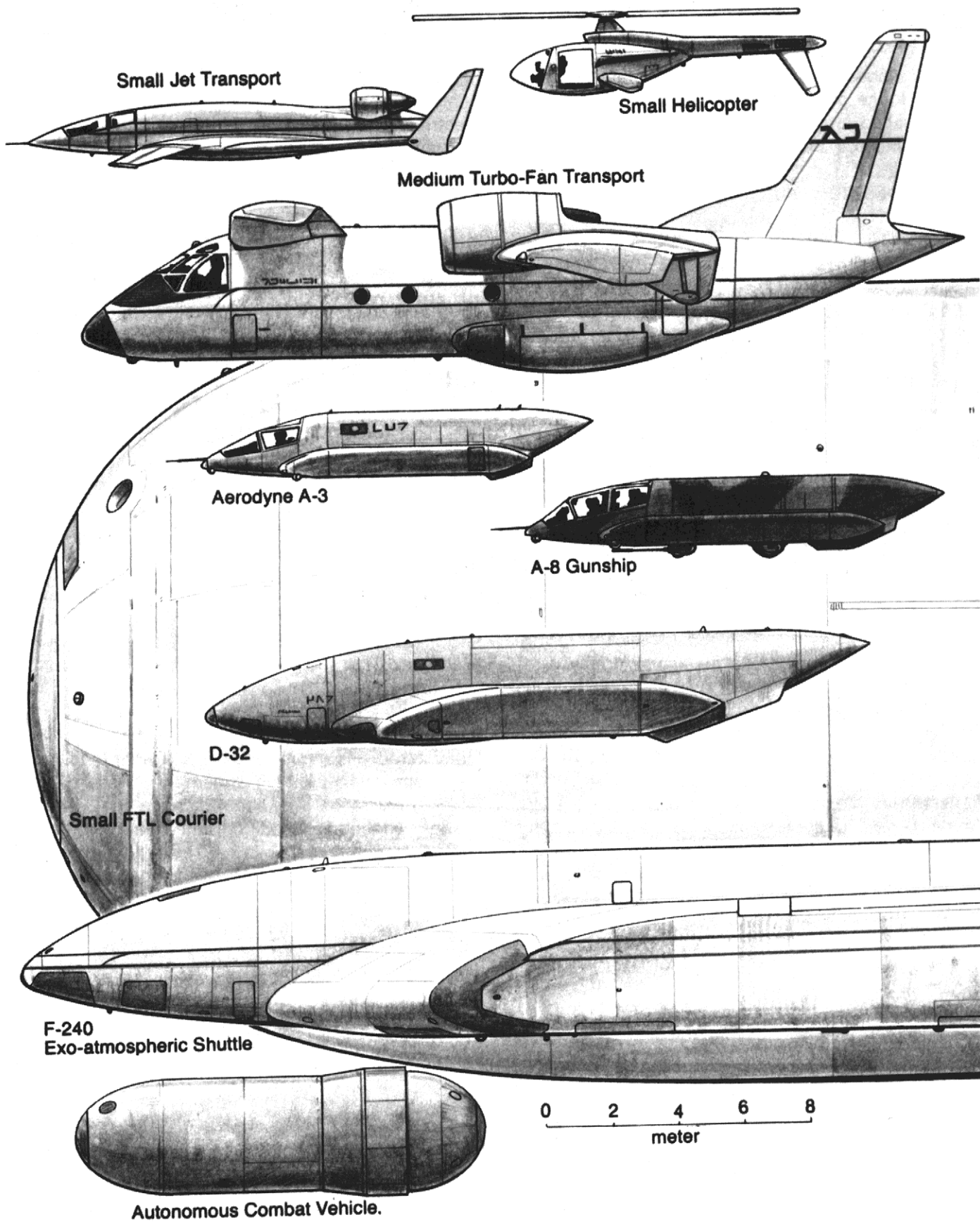
Vehicle Type: **FTL Aero-freighter**
Crew: 4+
Structure: 18
Weight: 600 tonnes
Details: Lumbering, 600 tonne jump capable vessels with 100 tonne payloads. FTL freighters do not have the endurance for very long trips. Freighters have a 6 point armoured skin.

Vehicle Type: **FTL scout**
Crew: 4+
Structure: 17
Weight: 500 tonnes
Details: Jump capable vessels armed with 2 or more beam weapons. Scouts have enough endurance to last out a few months or trip, giving them limited endurance in an environment which requires long periods of acceleration out system before a jump can be made.
Larger interstellar Aerodynes can mass up to 8000 tonnes, where they are superseded by true starships (which mass 10,000 tonnes or more). Interstellar aerodynes are often slower than starships, since they do not carry the high fuel payloads required for constant high acceleration.

BASIC VEHICLE COMBAT RULES:
When a vehicle's armour is penetrated, roll on the wound chart as normal. Use the vehicle's structure rating as a DRM to replace the usual "frame size" DRM. Any result of a massive or catastrophic wound will destroy the vehicle. Serious wounds disable the vehicle in some way. Lesser damages are ignored. Vehicle armour has an impact distribution of 8.

Players may design ground and air vehicles by simply taking a basic chassis type and adding weapons, armour and fittings. Due to the astronomical costs involved, the prices for armoured vehicles are not listed. Such equipment will be issued to characters, and not purchased by them.

Weapons systems descriptions:
Cannon:
24mm/L80 or 32mm/L80 pneumatically or electrically driven auto weapons firing armour piercing depleted uranium munitions. Against vehicle targets, multiple hits will increase the weapon's damage and penetration. For each additional shell over and above the first which strikes the target, increase the weapon's damage and penetration ratings by 2.

Hyperkinetic guns:
Long tube launchers which use liquid propellants to project shells of 64mm to 120mm calibre. The phenomenal velocities achieved give the weapons a very high penetration and damage. A variety of different smart and dumb shells exist, making this a flexible and devastating weapon system.

MS launcher (Missile System):
Short tube launchers in calibres of 104 to 240mm firing guided self propelled ordnance. These weapon systems are quite rare.
Guided missiles will always strike their target if a clear shot can be had. If the missile is seen coming or is detected by the target's sensor systems, then he target vehicle may attempt to evade. A driving/ piloting skill roll must be made vs a difficult task. A successful roll will cause the missile to miss.

Aerospace weapons.
Many aerodynes mount beam weapons in addition to their conventional kinetic armament. These devices have a penetration of 8, and a damage of +2, and fire in the manner described for light cannon. Only one damage/penetration roll is caused by any given hit roll made by a beam weapon, but every additional hit

Basic vehicle weapon systems.

Weapon type	Penetration	Damage	Range
Light weapons:			
Light cannon	17/15/14/12	+7/+7/+6/+5	200/500/2000/4000
Heavy cannon	18/16/15/12	+8/+8/+7/+6	200/500/2500/4000
Light MS	32	+16	To 4000 metres
Medium weapons:			
Light Hyperkinetic gun	38/36/35/32	+14/+14/+12/+10	500/1000/300/4000
Heavy MS	36	+18	To 5000 metres
Heavy weapons:			
Hvy Hyperkinetic gun	40/38/37/35	+16/+16/+14/+12	500/1000/3000/4000

All notations are for short/medium/long/extreme ranges.

made on the target in the same location adds +8 penetration and +6 damage to the hit. Beam weapons halve all DRM's for moving targets. They have a short range of 1000, a medium range of 2000, a long range of 4000 and an extreme range of 5000 while firing within atmospheres.
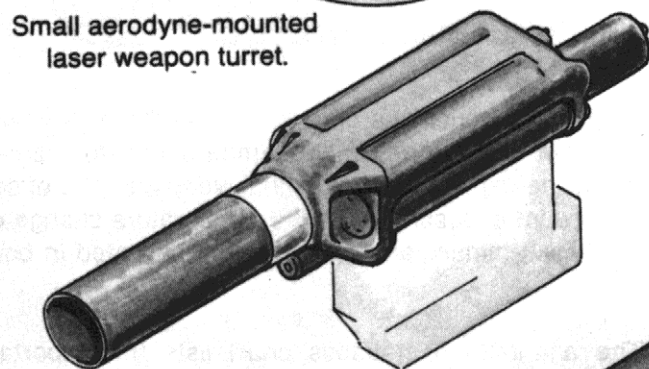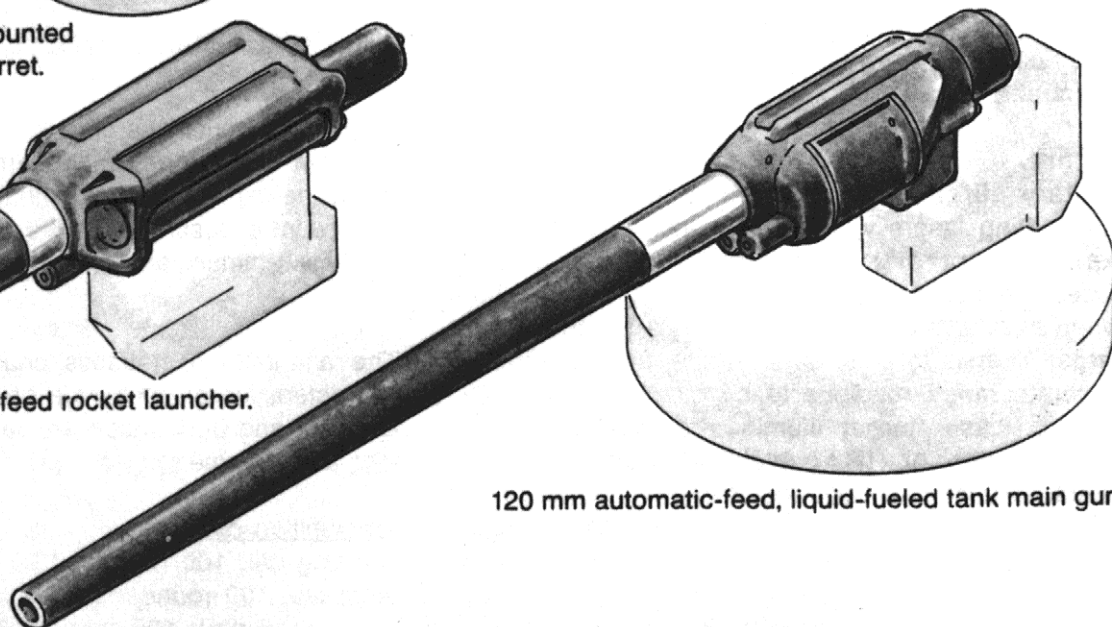
10 mm recoil operated turret mounted machine gun.
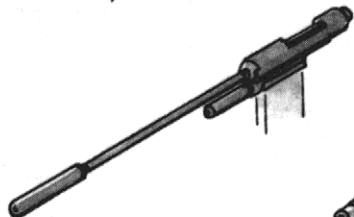
24 mm electric operated dual ammo feed automatic cannon.
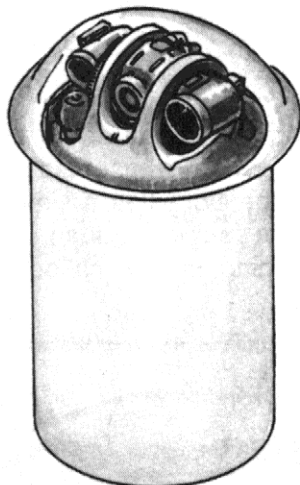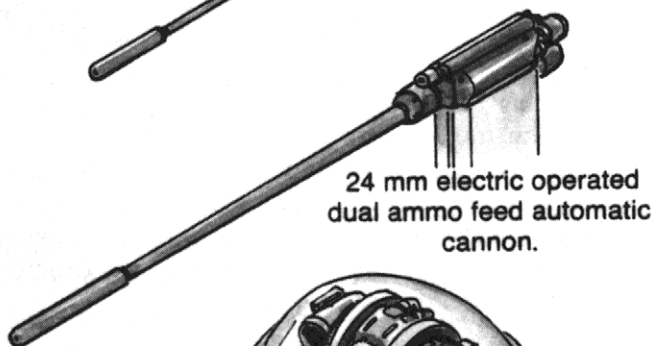
Small aerodyne-mounted laser weapon turret.

280 mm automatic-feed rocket launcher.

120 mm automatic-feed, liquid-fueled tank main gun.

WAGES:

Given the array of potential expenses detailed above, players can at least be comforted by the thought that money can be earned to cater to the characters expensive tastes. Please note that many wages will be paid bi-weekly or even monthly.

Inner ConFed worlds - sample incomes.

	Weekly income
Standard state allowance	50
Casual labour	+50
Part time labour	+80-100
Full time work (service)	+170
Full time work (admin)	+200
Senior Admin	+300-1000

The worlds of the inner ConFed provide for most of their citizen's needs, and thus work for a set wage is performed only to increase a citizen's purchasing power, and not as a vital neccesity. Citizens who join the armed forces will be paid at the level of service or admin personnel, depending on rank.

"Capitalist" worlds - sample incomes.

Type of job	Weekly wages ("take home" pay)
Unskilled labour	160-250
Skilled	260-320
Highly paid	350-450
Lower executive	500-1000

The outer ConFed and the I.L.R. worlds more closely approximate modern western capitalism in their economic set ups. Thus characters will have to earn a wage to provide themselves with food, lodgings, medical care and information access.

WEAPONS

The firearms used in ALBEDO are people killing tools - the weapons of murder. The only non-military firearms are those used for target shooting (a sport which enjoys a limited popularity in some low population density areas). "Sporting" weapons do not usually have the advanced features of military versions, and military "dart" ammunition is rarely sold commercially.

The small arms used in ALBEDO all rely upon kinetic energy to effect their targets, and are thus largely similar to modern firearms. It is in the peripheral areas of ammunition types and targeting systems that ALBEDO's military firearms differ from modern models.

Just about every weapon comes with interchangeable grips and stocks to allow use by a wide variety of user species.

Actions.

Firearms will have one of the following operating/ loading systems: manual, recoil/gas operated, external pneumatic operated or electrically driven.

Manually operated weapons require the firer to expend a "load" action to prime the weapon.

Recoil/gas operated weapons are the most common system. All weapons specified in these rules are assumed to operate through this system unless otherwise stated.

Pneumatically operated weapons receive a -1 DRM when rolling on the breakdowns chart.

Electrically operated weapons have an enormously high rate of fire, and therefore score one extra hit on their targets for every point by which they undercut the minimum roll to hit. Bursts fired from electrically driven weapons expend c.20 rounds of ammunition.

Sights.

Military firearms are equipped with target illuminating lasers which are "reflexed" through the weapon's optical sights. Laser equipped firearms receive reduced penalties for firing unaimed shots when at ranges of up to 60 meters. A second use for target illuminators is as a range finder, allowing accurate range readings to be made at out to 500 meters. Laser target illuminators may use either visible light or IR (which will be visible to characters using C.C.D. equipment).

Many military weapons come with telescopic sights as standard equipment. Smart sights will be a common addition to tripod mounted weaponry.

Firearm calibres.

Military ammunition is split into two main calibres, 8mm and 6mm.

The E.D.F. uses 8mm cased ammunition in its standard weapons. E.D.F. 8mm caliber military bullets are sub-caliber hard bodied saboted darts (4mm inner core) coated in a friction reducing substance (such as teflon).
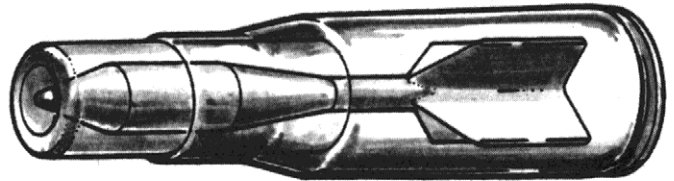
Dart ammunition is equipped with base bleed, which reduces the round's loss of energy over range, thus making the weapon more accurate at long ranges. By projecting 4mm projectiles out of 8mm barrels, the 8mm sub-caliber dart round manages to achieve phenomenally high velocities, giving it extremely high armour penetration.

The I.L.R. uses caseless 6mm dart ammunition with the same base bleed features found on E.D.F. ammunition. 6mm caseless ammunition is not saboted. It therefore has a slower, heavier slug than E.D.F. 8mm sub-munitions, and is only really armour piercing in rifle caliber (long cartridge).
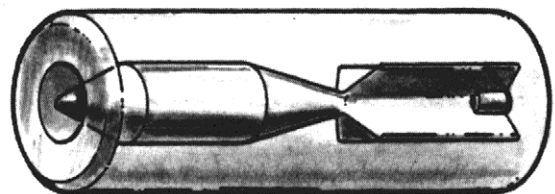
I.L.R. 6mm munitions have traded off the high energy of 8mm discarding sabot ammunition for higher magazine capacities on personal weapons. The effects of vacuum exposure and rapid temperature change on caseless ammunition has already been noted in book 1.

The ammunition statistics chart lists the important characteristics of each type of small arms projectile. Damage and penetration are rated at short, medium, long and extreme ranges.

Ammunition costs.
Sporting cal, 100 rounds: 12
6mm cal, 100 rounds: 30
8mm pistol dart, 100 rounds: 35

8mm short/long cal, 100 rounds: 35
8mm short/long dart munitions, 100 rds: 40
10mm cal, 100 rounds: 100
12mm cal, 100 rounds: 120
16mm cal, 100 rounds: 160
Hand grenades, per round: 25
Self propelled grenades, per round: 40

Now you know how wars get to be an expensive business . . .

GRENADES AND EXPLOSIVES:

Grenades and explosive weapons come in several types, which are detailed below. E.D.F. troops are not normally issued with specialised grenade types, relying mostly upon variable grenades. Flechette grenades see almost no use at the current period of time, and are thus not included in the equipment lists.

Grenade fragments do not normally penetrate very deeply, and thus use column 2 on the damage determination chart. Normal body armour provides no protection against blast damage. Blast damage does not roll for hit location. Characteristic DRM's from blast wounds apply to all characteristics.

Chemical effect grenades.
Available in 32 and 48 mm versions, These are available in incendiary, smoke and illumination versions. Incendiary grenades (and also petrol bombs) shower the target with burn effects (use wound column 2, damage = 0). The flame will burn for 3D3 turns, rolling for hit locations every turn. Pretty? Incendiary and smoke grenades obscure the target hex with a cloud of smoke which will usually last for 1 minute (or 4 turns if tear gas). Illumination rounds illuminate an area 30 meters in radius, and will burn any location directly hit by such a round with a burn effect (damage 10).
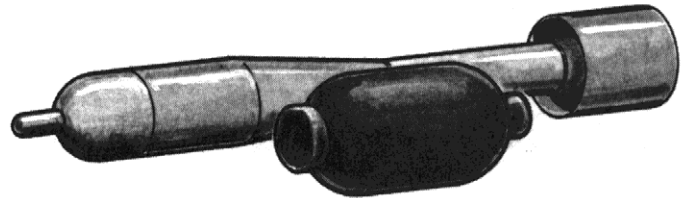
Variable grenades.
E.D.F. 32mm variable grenades are dual purpose weapons which may be set either for fragmentation blast or armour penetration simply by varying the fuse setting. The ConFed E.D.F. forces will not normally be equipped with specialised grenade types, and rely almost entirely upon their variable grenades and hand grenades.

Variable grenades are self propelled, but may be thrown by hand. Their armour piercing mode is of little use when thrown by hand, since there is no way

Magazine weights (kilos).

Mag Capacity	Calibre							
	4mm	6mm pistol	6mm rifle	8mm pistol	8mm rifle	10mm	12mm	16mm
8 rds	.05	.07	.07	.10	.17	.40	.48	.80
12 rds	.06	.10	.11	.12	.20	.60	.72	1.2
16 rds	.08	.13	.15	.16	.27	.80	.96	1.6
20 rds	.10	.16	.18	.20	.36	1.0	1.2	2.0
24 rds	.12	.19	.22	.24	.40	1.2	.15	2.4
32 rds	.16	.26	.28	.32	.54	1.6	1.92	3.2
48 rds	.24	.39	.43	.48	.80	2.4	2.9	4.8
100 rds	.50	.80	.90	1.0	1.80	5.0	6.0	10.0

Cross reference the number of rounds held in the magazine (left margin) with the weight per round in grams (top line, bold print) to find the approximate weight of the magazine in kilos.
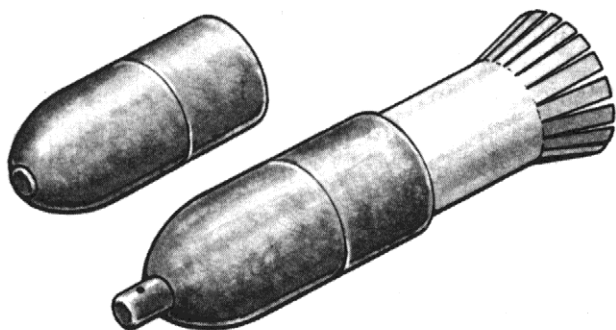
of guaranteeing that the hollow charge will strike its target front end on. When fired from a launcher, stabilizing fins deploy to give the weapon a stable trajectory.

Variable grenades are usually set for fragmentation effect. Changing the setting on a grenade fuse takes one action.
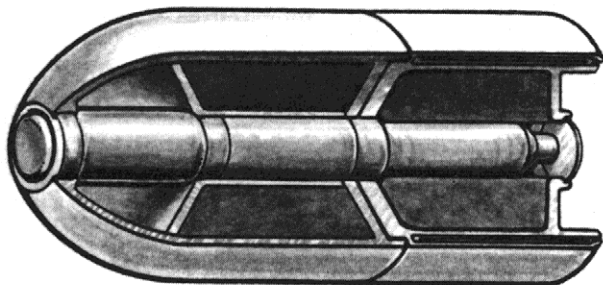
Grenade weights.
32mm grenades weigh .7 of a kilogram. 48mm grenades weigh 1 kilo.

WEAPON LISTS:

The lists below specify the sum of the weapons currently produced by the various governments of known space. Some of the most likely custom made weaponry has also been listed. Each weapon's range statistics are split into four sections, these being the figures relevant to the weapon's short, medium, long and extreme ranges. All weights listed below are the weight of the loaded weapon.

Standard military weapons in the ConFed vary from world to world. For instance, the Ekosiak homeguard ekes out its supply of E.D.F. pattern assault rifles with locally produced assault carbines, both of which take the standard E.D.F. 8mm x 50 cartridge. Sporting weapons tend to be small calibre semi-automatic versions of military small arms. The limited military experience of the culture of ALBEDO has lead to simple small arms formats (conventional stock-grip-magazine layout).

The E.D.F. personal weapons system.

The small arms used by the E.D.F. use interchangeable parts. By swapping barrels and grips, and adding on peripherals such as belt feed adaptors and bipods, rifles may be metamorphosed into LMGs, assault carbines or SMGs. Likewise, machine pistols and submachine guns are easily convertible from one into the other.

Missile weapon: **PISTOL**
Caliber: 6mm or 8mm pistol
Handiness: VERY HANDY
Ranges: 20/40/50/70
Magazine capacity: 20 (6mm caliber) or 16 (8mm caliber). Very small handed species (avians, mice etc) will have reduced capacity magazines (eg 16/12 rounds)
Weight: 1
Cost: 400-700 CR
Description: Magazine fed semi-automatic handguns. Not designed for combat in an environment where body armour is common, pistols are mainly used as an effective defensive armament. Pistols are not capable of automatic fire.

Carefully aimed shots with pistols assume that the firer is supporting the weapon either with a second hand or by resting the barrel.

Missile weapon: **MACHINE PISTOL**
Caliber: 6 & 8 mm pistol cal.
Handiness: VERY HANDY
Ranges: 20/40/50/100
Magazine capacity: From 16 to 36 for 8mm weapons, 20-42 rounds for 6mm.
Weight: 1.5
Cost: 600-800 CR
Description: A fully automatic pistol. These devices are uncommon except as the defensive side arms of vehicle crews. The clips are interchangeable with SMG magazines of the same calibre.

Missile weapon: **SUB MACHINE GUN**
Caliber: 4, 6 & 8mm pistol and rifle calibres.
Handiness: VERY HANDY
Ranges: 20/50/100/150
Magazine capacity: See machine pistols
Weight: 2.5
Cost: 600-1000
Description: This category covers a variety of short, handy weapons. S.M.G's are essentially longer barrelled versions of the machine pistol. Designed for close in work and high rates of fire, SMG's are used primarily by terrorists, security troops and police, vehicle crews etc.

WEAPONS REFERENCE CHART.
The damage and penetration columns are divided into values for
Short/Medium/Long/Extreme ranges.

Small arms ammunition statistics.

Caliber	Damage	Recoil	Wt	Penetration
8mm Pistol	0/0/-1/-2	1	10	3/1/0/0
8mm Rifle	+2/+2/+1/0	3	20	7/7/5/4
8mm Pistol dart	-1/-1/-1/-2	1	10	4/3/2/1
8mm Rifle dart	+1/+1/+1/-1	3	20	9/9/8/7
6mm Pistol dart	0/0/-1/-2	0	8	2/2/1/0
6mm Rifle dart	+1/+1/+1/-1	2	10	8/8/7/6
4mm dart	-2/-2/-2/-4	0	5	5/4/2/1
4mm Sports	-1/-2/-3/-4	0	5	4/3/0/0
10mm dart	+3/+3/+3/+1	N/A	50	10/10/8/7
12mm	+3/+3/+2/+1	N/A	60	11/11/9/8
16mm	+4/+4/+3/+2	N/A	100	12/12/10/9

Firearms characteristics.

Weapon Type	Range (S/M/L/Ex)	Penetration modifiers	Weight (kilos)	Handiness Rating
Pistol	20/40/50/70		1	V. Handy
Machine Pistol	20/40/50/100		1.5	V. Handy
S.M.G.	20/50/100/150		2.5	V. Handy
Assault Carbine	20/120/200/300	-1 extreme rng	3/3.5	Handy
Assault Rifle	20/120/250/400		3.5/4	Average
L.M.G.	50/200/300/800		8/10	Average
L.M.G. (tripod mount)	50/200/400/1000		11/13	Average
H.M.G.	50/200/500/1500		16	Cumbersome
Sniper's. Rfl (10mm)	50/500/800/1000		12	V.Cumbersome
Sniper's. Rfl (12mm)	50/500/800/1000		13	V.Cumbersome
Sniper's. Rfl (16mm)	50/500/700/800		16	V.Cumbersome
Sport Rifle				
-4mm.	20/80/200/300		5	Cumbersome
-6 or 8mm	20/100/300/600		5	Cumbersome
Shotgun	20/50/70/100	Pen = 3/1/-	4	Cumbersome
Light grenade launcher	20/100/200/300 (IDF 80-500)		1.2/1.5	-1 class
Grenade launcher	20/100/200/300 (IDF 80-500)		5	V. Cumbersome
Auto grenade launcher	50/200/500/1500 (IDF 300-2000)		15	Cumbersome

Grenade statistics.

Missile type	Penetration	Frag damage	Blast damage
32mm concussion grenade.	0	N/A	+1
48mm concussion grenade.	0	N/A	+2
48mm Fragmentation grenade.	3	-2	+2
48mm Armour Piercing grenade.	18	(+8)	+0
ConFed variable grenade, frag.	3	-2	+1
ConFed variable grenade, A.P.	16	(+7)	+0

Missile weapon: **ASSAULT CARBINE**
Caliber: 4, 6 and 8mm
Penetration modifiers: -1 at extreme range.
Handiness: HANDY
Ranges: 20/120/200/300
Magazine capacity: 48 (4/6mm) or 24 (8mm)
Weight: 6mm cal 3, 8mm cal 3.5
Cost: 900-1500
Description: A shorter barrelled version of the assault rifle, assault carbines are popular for close in work. More effective at ranged fire than an SMG, assault carbines are found sown through most infantry squads and security teams.
Most assault carbines will have folding stocks. When the stock is folded, the weapon becomes "very handy", but may not be used for aimed fire.

Missile weapon: **ASSAULT RIFLE**
Caliber: 4, 6 or 8mm calibres.
Handiness: AVERAGE
Ranges: 20/120/250/400
Magazine capacity: 48 (6mm cal) or 24 (8mm cal)
Weight: 6mm cal 3.5, 8mm cal 4
Cost: 1000-1600
Description: The standard military small arm. Assault rifles are light, robust weapons capable of effective automatic fire out to medium ranges. Assault rifles are military weapons par excellence, and will rarely be available to the public.

Most assault rifles are equipped with folding stocks. When the stock is folded, the weapon becomes "handy", but may not be used for aimed fire.

Assault rifles can be fitted with 48-72 round drums, but at the penalty of reducing their handiness to CUMBERSOME.

Missile weapon: **LIGHT MACHINE GUN**
Caliber: 4, 6mm or 8mm rifle
Handiness: VERY CUMBERSOME (AVERAGE when set up on bipod/tripod).
Ranges: 50/200/300/800
Magazine capacity: 100+
Weight: 6mm cal 8, 8mm cal 10. Spare barrels weigh c.1.5 kg's.
Cost: 1200-2000
Description: As a support weapon for infantry squads, the light machine gun reigns supreme. LMG's may be fired when not set up, with range difficulty brackets identical to the assault rifle. For aimed fire they must be braced or rested somehow. LMG barrels have to be changed every 2000-3000 rounds to allow them to cool, otherwise they receive an increased chance of suffering a breakdown (+1 on the breakdowns chart).

L.M.G.'s may be fitted with a heavy tripod mount (weighing 4 kilos) which provides a very stable base for firing. Tripod mounted machine guns do not receive adverse DRMs for subsequent shots at a target without aiming. Tripod mounted weapons have greatly extended ranges, but their heavy base effectively negates the weapon's recoil. Tripods take 4 actions to set up.

Tripod equipped LMGs may be equipped with a passive coolant system for the barrel and chamber, converting them into sustained fire machine guns (SFMGs). SFMGs weigh 1 kilo more than the normal LMG, and receive a DRM of -1 when rolling on the breakdown effects chart. With supplemental cooling SFMGs can be fired almost indefinitely without having to change barrels.

Missile weapon: **SNIPER'S RIFLE**
Caliber: 10, 12 or 16mm
Handiness: VERY CUMBERSOME
Ranges: 50/500/800/1000 (10 & 12 mm), 50/500/700/800 (16mm)
Magazine capacity: 16 (10mm), 8 (12mm), 8 (16mm)
Weight: 12 (10mm), 13 (12mm), 16 (16mm)
Cost: 2500-3000
Description: Semi custom weapons available with just about any combination of features. Sniper's rifles are hyper velocity weapons supported on a tripod mount, designed for use as a high accuracy, single shot/controlled burst weapon. Due to the hypersonic "crack" of the rounds fired, no silencing equipment is bothered with, but sights are essential to the proper deployment of the weapon. Some models will have the ability to fire automatic bursts. Some sniper's rifles may have electric or external pneumatic operating systems rather than a normal gas/recoil loading.

Missile weapon: **SPORTS RIFLE**
Caliber: 4 or 8 mm
Penetration modifiers: -
Handiness: CUMBERSOME
Ranges: 20/80/200/300 (4mm cartridge) or 20/100/300/600 (6 or 8mm rifle cartridge)
Magazine capacity: 16 to 24
Weight: 5
Cost: 750-1000
Description: Also called the "long rifle" when used in a military role, sports rifles are self loading, semi automatic weapons used for rapid and accurate long ranged fire. They are not capable of automatic fire.

Missile weapon: **SHOTGUN**
Caliber: special (18mm smooth bore)
Penetration: 3/1/-/-
Handiness: CUMBERSOME
Ranges: 20/50/70/100
Magazine capacity: 8
Weight: 4
Cost: 300-700
Description: A police weapon, the shot gun is a primitive but effective means of delivering a heavy weight of shot against a target.
Shotguns fire bunches of flechettes, which spread the round's damage over more than one area at medium & long range. At short range shot has a damage rating of +2. At medium range or further, a hit by a shotgun firing flechettes will attack 4 different hit locations with damage -2 at medium range, damage -3 at long range, and damage -4 at extreme range. Shotguns firing flechettes roll vs 10 (rather than 12) when testing for a hit at medium range. Shotguns have a

recoil of 4, and may not use automatic fire.
Larger shotguns (24mm calibre) are available which may fire special chemical effect ammunition (incendiary, smoke etc). Their recoil is 5, and flechettes fired by such large weapons have damage ratings 1 higher than the values given for 18mm flechette rounds.

HEAVY WEAPONS:
Heavy weapons are used in support of normal infantry sections. Each type of heavy weapon (ie grenade launchers, auto G.L's, missile launchers etc) is its own skill.

Missile weapon: **LIGHT GRENADE LAUNCHER**
Caliber: 32mm or 48mm GRENADE
Handiness: -1 from normal weapon handiness rating (ie. "Very handy" becomes "handy")
Ranges: 20/100/200/300. IDF range = 80 to 500 meters.
Magazine capacity: 4 (32mm) or 1(48mm)
Weight: 3 or 1.3
Recoil: 1
Cost: 300
Description: Used as a supplement to many assault weapons, the light grenade launcher is attached to the underside of assault rifles and the like as an "over and under" attachment. Light grenade launchers project rocket propelled grenades (thus their low recoil). All versions use a manual loading action. This takes two "load" actions in the case of the 48mm I.L.R. version.

Missile weapon: **GRENADE LAUNCHER**
Caliber: 32mm or 48mm GRENADE
Handiness: VERY CUMBERSOME
Ranges: 20/100/200/300. IDF range = 80 to 500 meters.
Magazine capacity: 4 (32mm) or 3 (48mm)
Weight: 5
Recoil: 1
Cost: 800
Description: A standard squad support weapon, the grenade launcher is a magazine fed, self loading weapon which projects self propelled grenades out to distances of up to 500 meters. The E.D.F. uses this system in 32mm caliber (projecting variable grenades), while the I.L.R. (and some homeguard forces) use 48mm caliber. The E.D.F. type uses an external pneumatic loading action.

Missile weapon: **AUTO GRENADE LAUNCHER**
Caliber: 32mm or 48mm GRENADE
Handiness: CUMBERSOME
Ranges: 50/200/500/1500 (IDF range = 300 to 2000 meters)

Magazine capacity: 24 round drums (EDF version may mount 2 separate drums)
Weight: 10/8 (unloaded)+ 4 kilo tripod
Recoil: N/A
Cost: 1500-2000
Description: A tripod mounted, fully automatic version of the grenade launcher which is used as a platoon support weapon or a vehicle mounted weapons system. When firing a burst of grenades, roll to hit in the usual manner detailed for auto fire weapons, scoring 1 additional hit in the target zone for every 2 points the player rolls under the required minimum score to hit. Missed shots scatter in the usual way.

The E.D.F. type is rather heavy, having a twin feed system for selective fire of AP or fragmentation rounds. The E.D.F. auto GL is pneumatically driven, whereas the I.L.R. version is just an auto fire version of the usual grenade launcher.

Missile weapon: **HEAVY MACHINE GUN**
Caliber: 10mm, 12mm or 16mm
Penetration modifiers: -
Handiness: CUMBERSOME
Ranges: 50/300/500/800
Magazine capacity: 100+
Weight: 10mm/12mm gas/recoil = 14
    10mm/12mm Pneumatic or electric = 16
    16mm Pneumatic or electric = 18
    + add tripod of 4kg's or heavier
Cost: 1500-2200
Description: A common military vehicle armament and company support weapon, the HMG fires large saboted slugs at velocities designed to do cruel and rude things to the target's body.

The E.D.F. uses 2 versions of these weapons - Gas recoil operated versions in 10mm or higher calibre, and powered versions. All I.L.R. heavy MGs have externally powered actions.

An HMG is of no real use in the anti-vehicle role due to the high protective qualities of monomolecular laminate armour. The HMG cannot be fired unless properly supported on a pintel or tripod mount, whereupon it shares the firing characteristics of a SFMG.

Missile weapon: **"MAN" PORTABLE MISSILE LAUNCHERs**
Caliber: LIGHT M.S.
Handiness: VERY CUMBERSOME
Ranges: 100/500/3000/4000
Magazine capacity:1
Weight: Grip/sight unit = 1.2 kilos. Missiles weigh 6 to 8 kilos+

Recoil: 0
Cost: Grip/sight costs 300. Missiles might cost several thousand credits apiece.
Description: Pre-packaged missiles in a disposable launch tube which may be attached to a grip/sight unit. This type of weapon system can fire a variety of smart or dumb missiles in the anti air, anti armour, chemical effect and high explosive categories. When firing in direct fire mode (eg. with a "dumb" HE round), use the range brackets for sniper's rifles. "Smart" rounds act as described under the vehicle combat rules. It takes three actions to load a P.M.L., one to aim it, and one to fire it.

MELEE WEAPONS
The starfaring culture of ALBEDO lacks primitive martial arts traditions, never having passed through periods of medieval technology. The melee weapons available to characters are thus confined to the simplest, most practical of types.

Edged weapons.
Melee Weapon : **BITE**
Damage: -3 or -2 (for "carnivores")
Penetration: 1
Length: 0 or 1 (for ratite descended avians)
Weight: N/A
Cost: N/A
Description: Most critters have a fairly good set of teeth, which can be used to good effect in a brawl. When a critter has grappled an opponent, he or she may opt to use a bite as its next action. The bite will succeed on a roll of the character's co-ordination or coolness under fire vs 10. Such bites will roll 1D2 for hit location. Ratite descended avians may use a bite attack in much the same manner as a punch. The damage of a bite attack is multiplied by 1/10 x the attacker's strength.

Melee Weapon : **KNIFE**
Damage: 0
Penetration: 2
Length: 0
Weight: NEG
Cost: 25-250
Description: Small edged weapons with light blades. The typical knife has a blade length of c.15 cm's. This class of weapons includes flick knives, clasp knives, boot knives etc.

Melee Weapon : **HEAVY KNIFE**
Damage: +1
Penetration: 3
Length: 1
Weight: .3
Cost: 100-250
Description: Larger, heavier knives (such as bowie knives, tanto's, long daggers and such). Due to the length and breadth of their blades, these weapons are capable of dealing a far nastier wound than their smaller cousins. When placed on the end of a rifle or SMG, knives become a bayonet, and become a length 3 melee weapon. Bayonets have a penetration of 4.

Melee Weapon : **MACHETE**
Damage: +2
Penetration: 2
Length: 2
Weight: .6
Cost: 20-50
Description: Large, broad bladed knives designed for cutting and chopping. They are common tools, but are quite capable of severing a person's head from their shoulders.

Melee Weapon : **AXE**
Damage: +3
Penetration: 3
Length: 3
Weight: 2.5
Cost: 50-75
Description: More common as a tool than as a weapon, the axe exists in ALBEDO as a common implement in any tool shed, and thus is included here as a possible improvised weapon. Axes use column 2 on the damage determination chart.

Impact weapons.
Melee Weapon : **FIST/KICK**
Damage: 0
Penetration:0
Length: 0 (punch) or 1 (kick).
Weight: 0
Description: Any blow with the fist or foot. Punches delivered by critters of ungulate descent have a

amage rating of +1, while punches delivered by avians have a damage of -1. Non ratite descended avians have the option of delivering a wing buffet, which has a range of 2 & a damage of -3.
Kicks are dealt with a higher strength than punches (+1 damage), but have a +1 DRM on the character's roll to hit. Kicks use a 1D10 hit location, but with a modifier of +4. Treat a hit in locations 9 or 6 as a strike to the abdomen. Non Ratite descended avians have a kick range of only 1.

Melee Weapon : **CLUB**
Damage: 0 to +2
Penetration: 0
Length: 2-3
Weight: 1
Cost: ?
Description: Wrenches, pipes and pieces of 4 x2. This category covers most improvised impact weapons.

Melee Weapon : **FIGHTING STICK**
Damage: +1
Penetration: 0
Length: 1 to 3
Weight: 1/2 (practice stick) or 1
Cost: 12
Description: A metre long staff which is used in the martial art of stick fighting. Practice sticks are padded plastic rods, while the combat version is of more solid construction. Practice sticks cause no damage to the target when they hit, but will instead deal 1 point of fatigue.
The fighting stick is a versatile device which may be used as a length 1, 2 or 3 weapon. At length 3 it is used for thrusting, and uses damage column 3 on the damage determination chart. At other ranges it is swung, and therefore uses damage column 4.

MISCELLANEOUS COMBAT EQUIPMENT.

The following systems are designed to be added to the missile weapons detailed above. Many weapons are designed with such equipment already integrated into the weapon's basic configuration. Such weapons are notably lighter than those which are not specifically designed to include such equipment.

Gas compensator.
Cost = 100
Weight: .3
Description: Despite the good muzzle brakes fitted to all firearms, the recoil of any gun under zero-G conditions makes them very difficult to control. A gas compensator is a clip on unit designed to balance the recoil of firearms with a backwards blast of compressed gas. Useful only in zero-G, weapons not equipped with compensators under such conditions

receive an extra +1 accuracy DRM for any unaimed shots, and add one to their effective recoil rating. Stabilizer cartridges hold gas sufficient to counteract the effects of 8 shots. Spare gas cartridges cost 10 credits and weigh .1 of a kilo.

Smart sights.
Cost = 500-1000
Weight: .5
Description: Targeting computer assisted sights linked with a laser range finder which automatically adjust for the range of the target, windage etc. Smart sights give the same firing bonuses as telescopic sights, but also double the extreme range of direct fire weapons when an extra action is spent on aimed or carefully aimed shots. Smart sights will only give a bonus to weapons which have a firm, stable base (ie a tripod). Weapons equipped with smart sights subtract 1 level from their handiness rating when firing aimed shots.

Telescopic sights.
Cost = 250-500
Weight: -neg
Description: Telescopic sights increase the shooter's accuracy at long and extreme ranges by granting the shooter a -1 DRM to hit on any aimed shot with direct fire weapons. Telescopic sights are a standard fitting with military long arms, but players may wish to add them onto sporting weapons etc.
Telescopic sights are often fitted with C.C.D. lenses to make them efficient night fighting aids. Many telescopic sights are capable of being dismounted from weapons and used as a hand held telescope, often with the addition of a light pistol grip.

Flash suppressor/recoil compensators.
All firearms have an integral flash suppressor/ recoil compensator. This fitting can be removed, increasing the weapon's effective recoil by 1, but lightening the weapon by 5% and reducing its length. Weapons modified in this way tend to be "jumpy", and have an unpleasant muzzle blast.

E.D.F. and I.L.R. equipment summary.
E.D.F.
Standard small arms caliber: 8mm dart
Grenades: 32mm variable
Vehicles: Usually tracked
Body armour: Flak armour & battle helmets (vacc suit helmets for officers). Ballistic cloth fatigues worn in high threat situations.
Personal communicators: Helmet mounted.
Comments: A variety of lighter small arms calibres are available for use by the more lightly built elements of the E.D.F. soldiery. E.D.F. units usually carry a minimum of specialized weapons of any kind. Often only one or two types of ammunition (eg rifle and pistol) and a few types of interchangeable weapons are carried. All E.D.F. equipment is designed to contribute to the E.D.F.'s role as a flexible, highly mobile, rapidly deployable force.

I.L.R.
Standard small arms caliber: 6mm dart
Grenades: 48mm
Vehicles: Usually wheeled
Body armour: I.L.R. body armour & battle helmets.
Personal communicators: Usually head set mounted
Comments: The I.L.R. organisation at unit level makes great use of specialized weapon types. Units might include specialist snipers armed with long rifles, SMGs etc. Unlike the E.D.F., each individual is responsible for his own maintainance requirements and ammunition supply. Munitions and weapons types tend to be tailored for the type of operation expected.
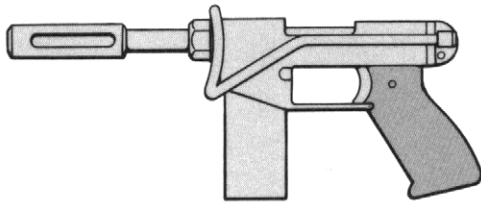
EDF Commander's Arm (machine pistol).
8mm 8x24 cased ammo (8x32 version available)
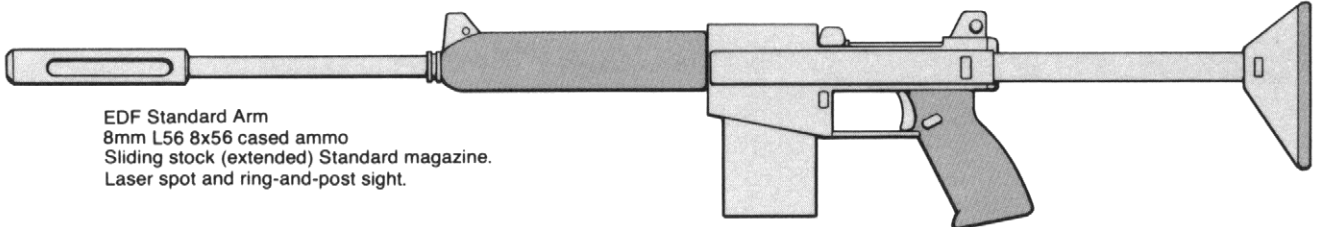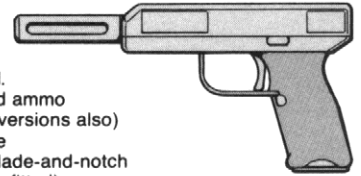Wire stock (stowed). Standard magazine.
Laser spot
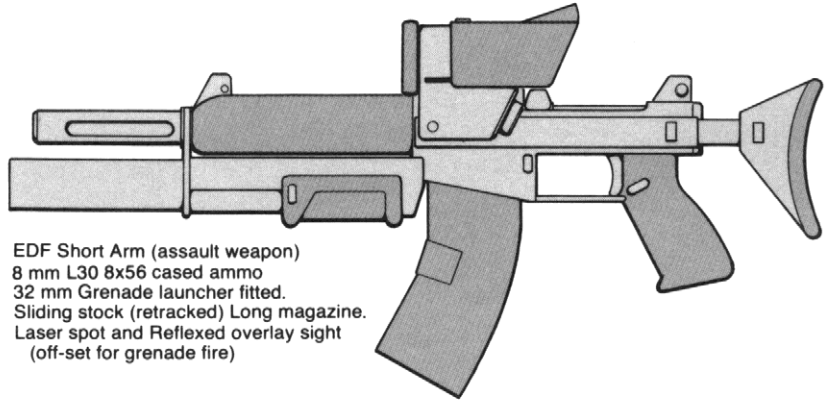
EDF Short Arm (assault weapon)
8 mm L30 8x56 cased ammo
32 mm Grenade launcher fitted.
Sliding stock (retracted) Long magazine.
Laser spot and Reflexed overlay sight
   (off-set for grenade fire)

ILR or Homeguard Bullet Projected Grenade
AP/Frag selectable, AP, HE, Frag, or Special Effect types available
Can be fitted and launched from any muzzel-shrouded weapon
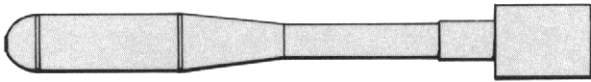
Common use pistol.
6mm or 8mm cased ammo
    (caseless ammo versions also)
Standard magazine
Sighting ramp or blade-and-notch
    (laser spot can be fitted)

EDF Standard Arm
8mm L56 8x56 cased ammo
Sliding stock (extended) Standard magazine.
Laser spot and ring-and-post sight.
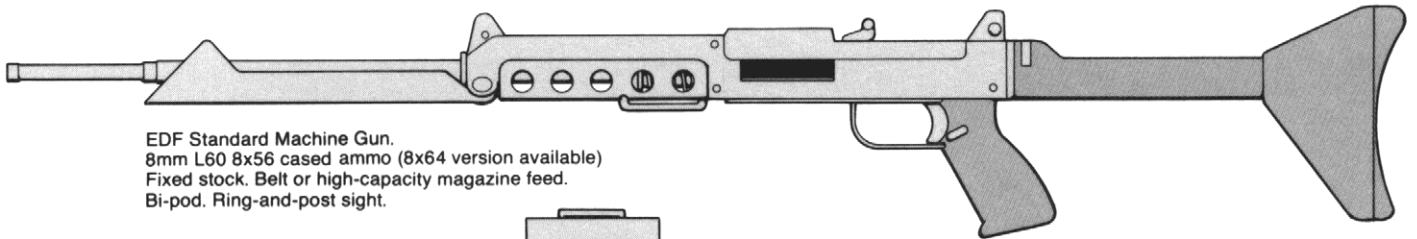
EDF Standard Machine Gun.
8mm L60 8x56 cased ammo (8x64 version available)
Fixed stock. Belt or high-capacity magazine feed.
Bi-pod. Ring-and-post sight.
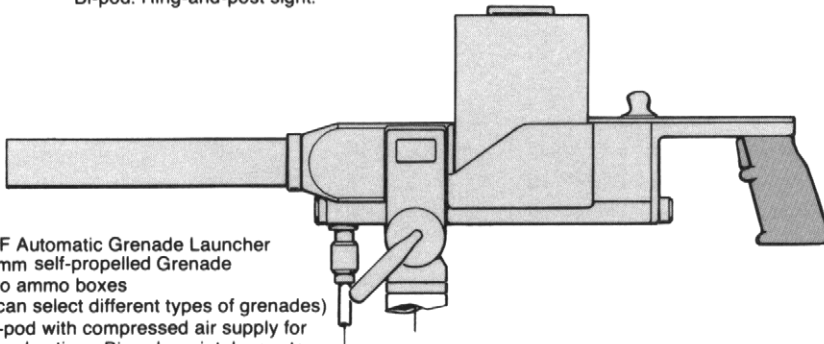
EDF Automatic Grenade Launcher
32mm self-propelled Grenade
Two ammo boxes
    (can select different types of grenades)
Tri-pod with compressed air supply for
    feed action. Bi-pod or pintel mounts
    available.
(uncommon in EDF use, more common in
    Homeguard service)
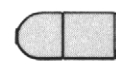
EDF 32mm Variable Grenade
AP/Frag selectable
Thrown or self-propelled

ILR or EDF 40mm Variable Grenade
AP/Frag selectable
Thrown or self-propelled

ILR or EDF 48 mm Hand Grenade
HE, Frag, or Special Effect types available
Thrown or can be fitted with tailpiece for
   bullet projection
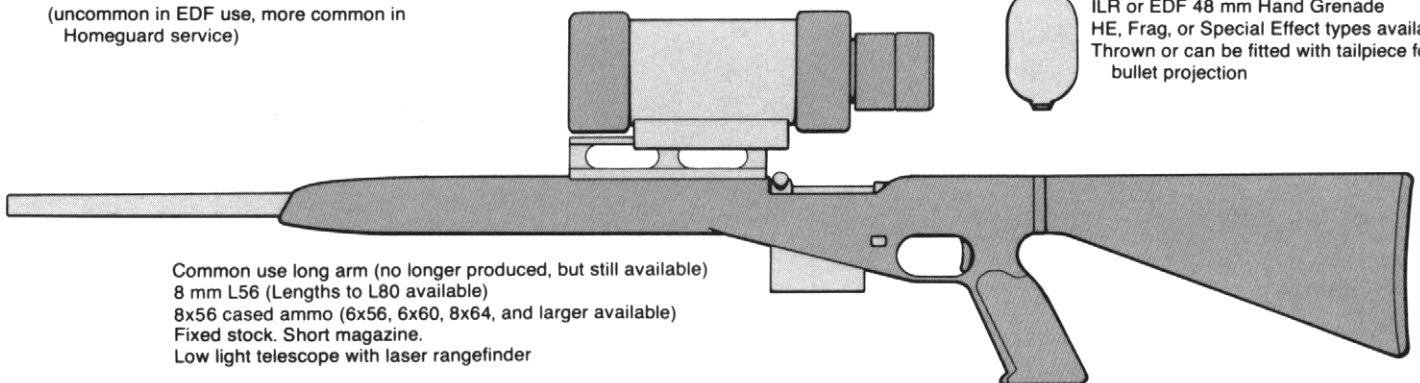
Common use long arm (no longer produced, but still available)
8 mm L56 (Lengths to L80 available)
8x56 cased ammo (6x56, 6x60, 8x64, and larger available)
Fixed stock. Short magazine.
Low light telescope with laser rangefinder

ILR Standard Assault Weapon
6mm L50 6x40 caseless ammo
40mm Grenade launcher fitted
Folding stock (extended) Long magazine
Laser spot and "snap shot" sight
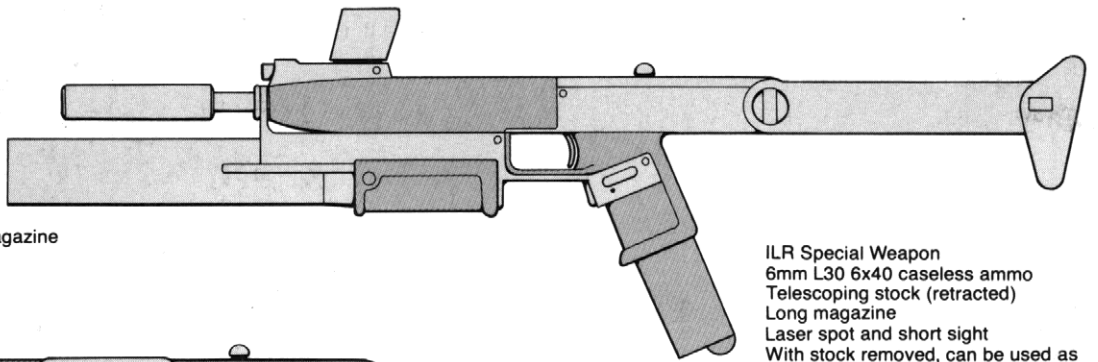
ILR Special Weapon
6mm L30 6x40 caseless ammo
Telescoping stock (retracted)
Long magazine
Laser spot and short sight
With stock removed, can be used as
heavy machine-pistol
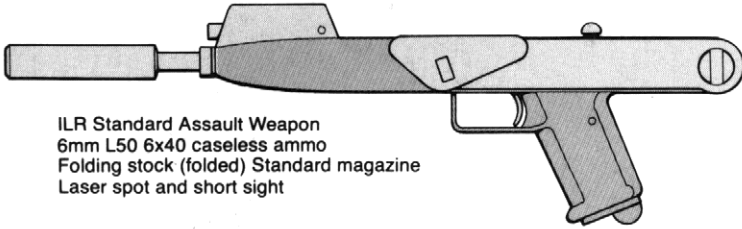
ILR Standard Assault Weapon
6mm L50 6x40 caseless ammo
Folding stock (folded) Standard magazine
Laser spot and short sight
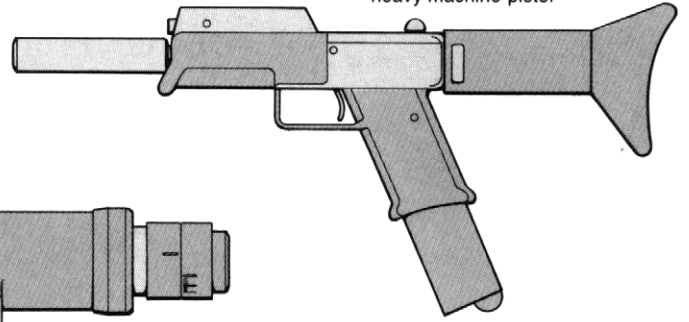
ILR Special Weapon
6mm L80 6x40 caseless ammo
Telescoping stock (extended) Standard magazine
Laser spot and low light telescope
Optional bipod fitted. Metal fore-grip/telescope mount
(can be fitted with vertical pistol grip/ammo feed
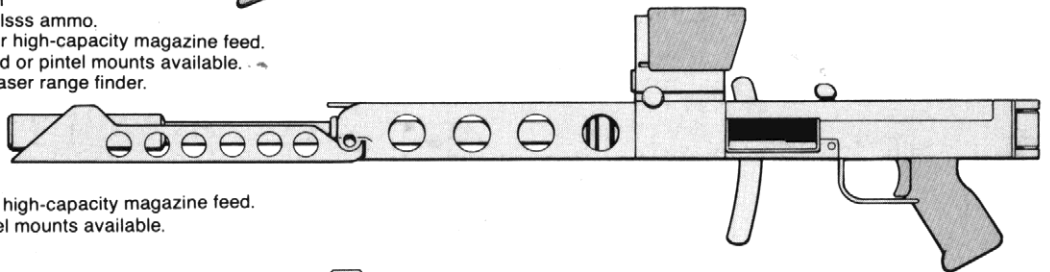   for high-capacity magazine)
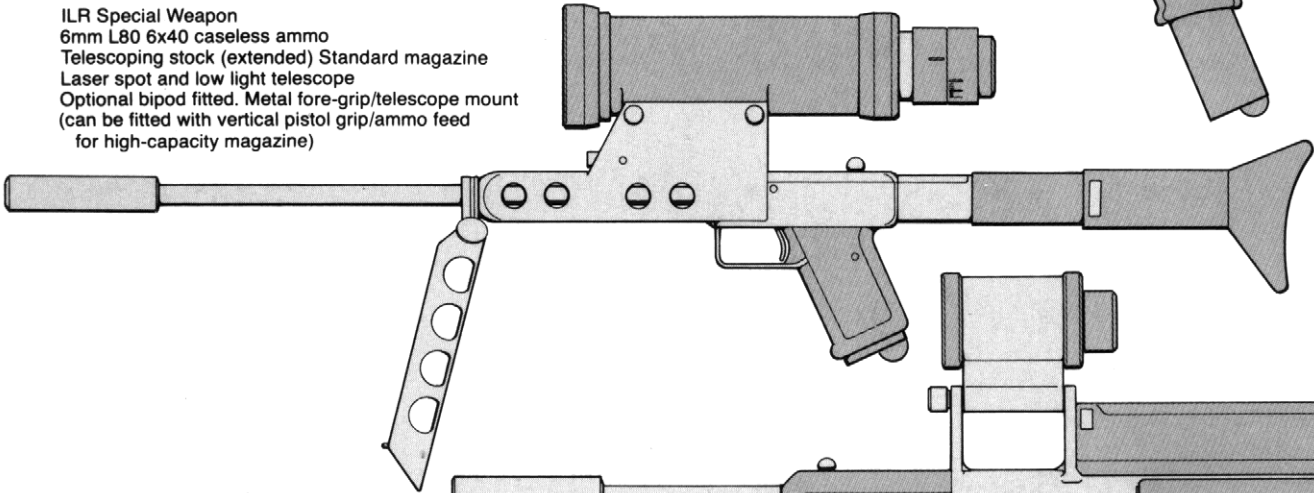
ILR Special Weapon
6mm L100 6x60 caseless ammo
Fixed stock. Standard magazine.
Laser spot and lowlight telescope.
Can be fitted with bi-pod, high-capacity magazine
   (heavy, high-power weapon for
   sniping or squad automatic weapon)
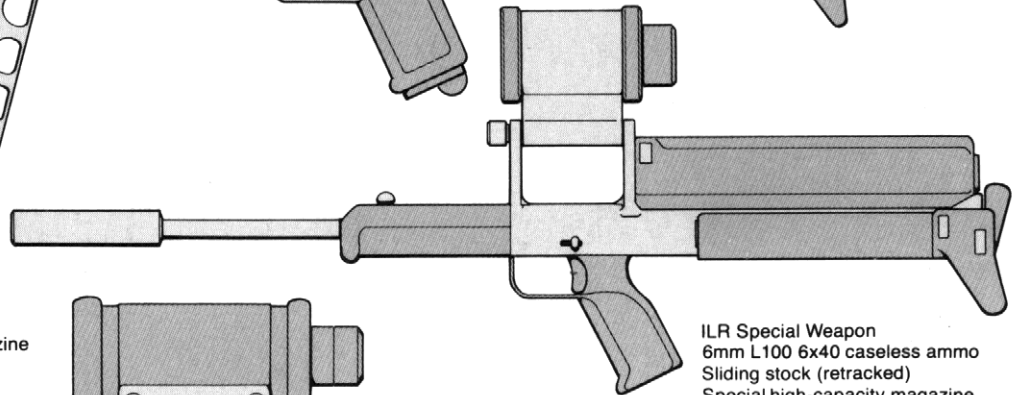
ILR Special Weapon
6mm L100 6x40 caseless ammo
Sliding stock (retracked)
Special high-capacity magazine
Laser spot and lowlight telescope.
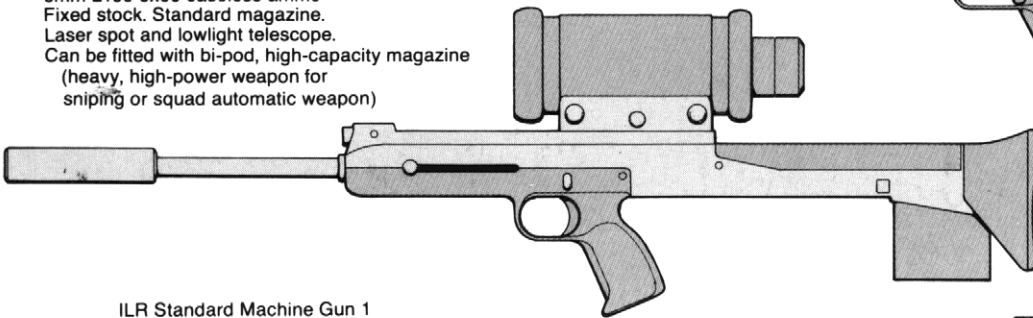
ILR Standard Machine Gun 1
6mm L80 6x40 or 6x60 caselsss ammo.
Folding stock (folded). Belt or high-capacity magazine feed.
Bi-pod is standard, but tri-pod or pintel mounts available.
Reflexed overlay sight with laser range finder.

ILR Standard Machine Gun 2
6mm L80 6x60 caseless ammo.
Telescoping stock (extended). Belt or high-capacity magazine feed.
Bi-pod is standard, but tri-pod or pintel mounts available.
Laser spot and ring-and-post sight.

MOSPEADA