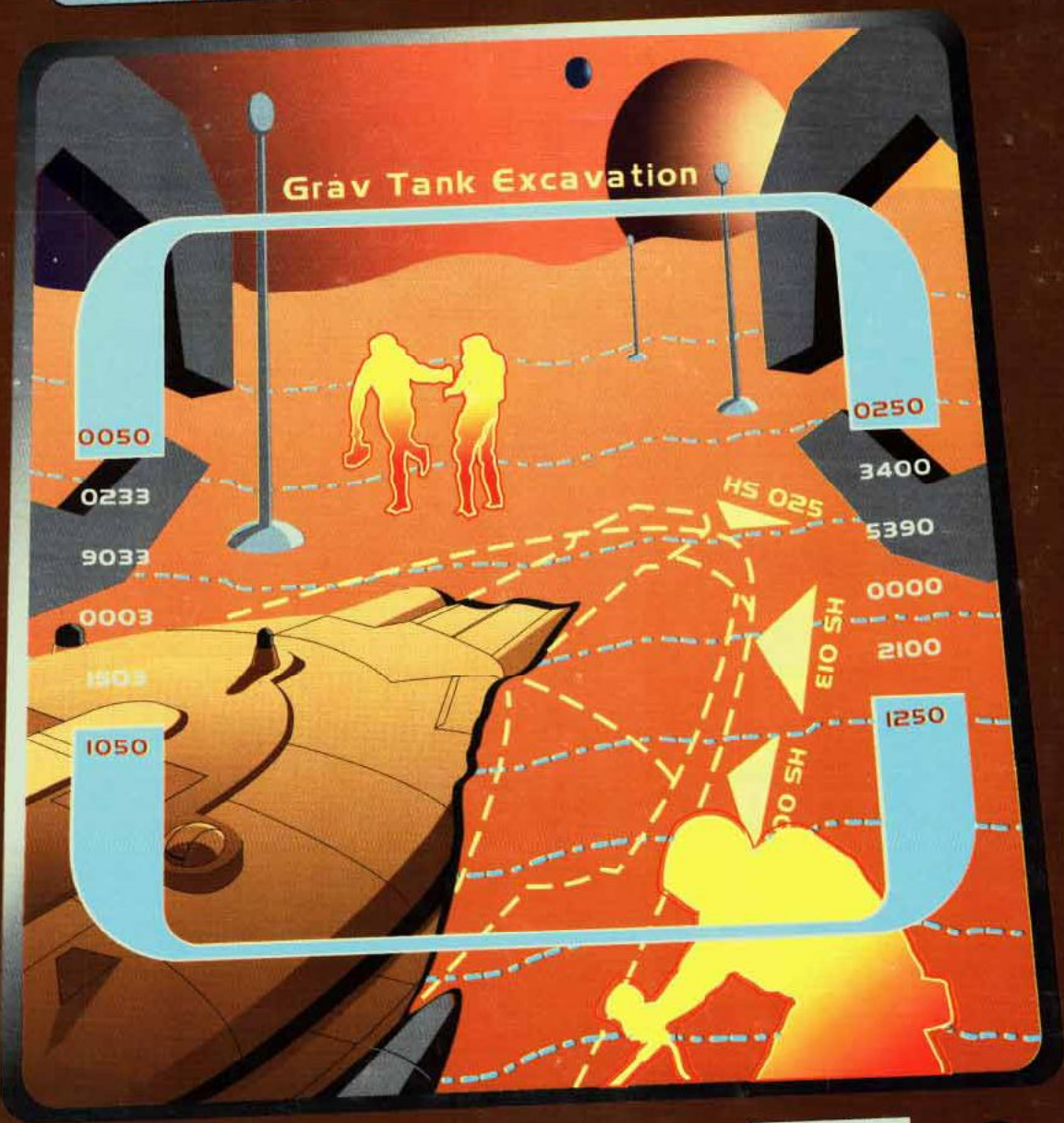


REFORMATION COALITION

Equipment Guide

CC - 000500. L-C-R
WT- 56.000. M - T54.6



Reformation
Coalition
Manual



RR2 LIR RR2
LLIO L5R RRIO



REFORMATION COALITION

TM

**REFORMATION
COALITION**

Equipment Guide



In order to re-build a universe, first you need the right tools...

The Star Vikings of the Reformation Coalition Exploratory Service (RCES) are always on the look-out for useful relic technology from the fallen imperium. The **Reformation Coalition Equipment Guide** details some of that relic technology, but it also describes the most important equipment, weapons, and vehicles used by the Coalition. The hallmark of this equipment is the Coalition's attention to flexibility and ruggedness: their designs are intended to make the maximum use of their limited technological and manufacturing resources.

Spacecraft

A wide variety of new and unique spacecraft are detailed in the **Reformation Coalition Equipment Guide**. Small craft covered include the assault lander, and "Wildbat" fighter, additional details on the 50-ton modular cutter (including a variety of new modules), and detailed examinations of the *Aurora* and *Maggart*-class clippers: the backbone and strong right arm of RCES operations. Three Hiver ships are also described, as well as a new type of Scout, and (last, but not least) the *Victrix*-class multipurpose starships.

Weapons

The Wilds are a dangerous place, and weapons are a necessity. The weaponry described in the **Reformation Coalition Equipment Guide** ranges from the 5mm "pen pistol" covert operations concealed weapon through conventional pistols, SMGs, carbines and rifles, to light and heavy machineguns. The Coalition 2.5cm grenade launcher, 4cm RAM rifle grenades, and heavier weapons are described in detail. Energy weapons are not neglected, covering everything from laser pistols to plasma bazookas, and the weapons in-between.

Heavier weaponry ranges from the tiny Lyrebird support missiles to planetary defense missiles more than 9 meters long. Need a laser-guided tank-buster? Call in a Nail tac missile. Tanks? You can use a light TL-6 "Panda" recon tank, the TL-8 "Prairie Fire" tank, or (if you are lucky enough to find one) à TL-15 "Intrepid" grav tank.

Transportation

Getting from place to place on a planetary surface is another problem everyone faces, and the **Reformation Coalition Equipment Guide** covers this subject as well. Need to get from orbit to dirtside in a hurry? You have a choice of assault lander, drop capsule, or personal reentry kit. Need to get around once you're there? Hop in a *Charina* wheeled APC, or strap a grav belt to your back and fly there.

Et Cetera

We cannot begin to list everything else that's in here, so flip to the index on page 158 and start reading. The **Reformation Coalition Equipment Guide** is copiously illustrated, and contains everything you need to use these items in a *Traveller: the New Era* campaign.

*So what are you waiting for, trooper? Strap up and move out!
History's written by the winners, and I just got myself some paper*

GDW: 0310 \$20.00



ISBN 1-55878-166-8

Traveller® is a registered trademark of GDW, Inc.
Copyright © 1994 GDW, Inc.
All rights reserved.
Made & printed in U.S.A.

GDW

P.O. Box 1646
Bloomington, IL 61702-1646

R

C

E

G

FORMATION

COALITION

EQUIPMENT

GUIDE

Science Fiction Roleplaying Game

TRAVELLER®
The New Era

GDW

"...You did not desert me, my brothers in arms."

—Refrain from the Oriflamme Marine Hymn

Design: David Nilsen

Development: David Nilsen and Loren Wiseman

Equipment Design: David Nilsen, Loren Wiseman, Guy Garnett, Howard Leidner, Harold Hale, Mark "Geo" Gelinas, and Bob Piper

Typesetting: Stephen Olle

Proofreading: Anne Bedard and Stephen Olle

Art Direction: Kirk Wescom

Cover Illustration: Kirk Wescom

Interior Illustrations: Bradley K. McDevitt, Kirk Wescom, Joseph Abiera, LaMont Fullerton, Chad McKenzie, and Rob Lazzaretti

Graphic Design and Production: Kirk Wescom, Bradley K. McDevitt, and Joseph Abiera

Reformation Coalition Equipment Guide™

Copyright© 1994, GDW, Inc.

Reformation Coalition Equipment Guide™ is GDW's trademark for its equipment sourcebook set in the **Traveller®** universe.

Traveller® is GDW's registered trademark for its science-fiction roleplaying game.

Made in USA. Printed in USA. All rights reserved.
ISBN 1-55878-166-8



P.O. Box 1646
Bloomington, IL 61702-1646

TABLE OF CONTENTS

INTRODUCTION	4	Rocket and Grenade Launchers	98
EQUIPMENT	8	Grenades and Pyrotechnic Signals	100
Personal Contra-Grav Transportation	10	Low-Tech Weapons	102
Personal Reentry Kit	12	Aerospace Defense Missiles	104
Drop Capsules	14	Tac Missiles	106
RCES Body Sleeve	16	Tac and Planetary Strike Missiles	108
RCES Light Battle Dress	18	VEHICLES	110
RCES Heavy Battle Dress	20	Intrepid Grav Tank	112
Schalli Personal Transportation	22	Convertible Air Raft	114
Communicators	24	Attack Speeders	116
Remotely Operated Sensors	26	Thunderchicken Attack Helicopter	118
Vision-Enhancement Equipment	28	Sensor Drone	119
Anti-Virus Equipment	30	Prairie Fire Tank	120
Covert Operations Equipment	32	LRV 51 Pandina	122
Hostile Atmosphere Survival Equipment	34	Charina APC	124
Rescue and Medical Equipment	36	"Pathie" Armored Car	125
WEAPONS	38	Pyrrhus Support Sled	126
Small Arms Ammunition	40	"Buster" Weapons Carrier	127
10mm Snub Pistols	44	STARSHIPS	128
Automatic Pistols	46	Reformation Coalition <i>Manta</i> -Class Fueler	130
Gauss and Body Pistols	48	Reformation Coalition <i>Aurora</i> -Class Clipper	131
Rifles and SMGs	50	Clipper Modules	132
5.5mm Assault Rifle with Grenade Launcher	52	Reformation Coalition <i>Maggart</i> -Class Clipper	136
Light Assault Gun & Sniper Rifle	54	Reformation Coalition	
14.5mm AAR ("Crunch Gun")	56	Victrix Multimission Sloops	138
Guild Small Arms	58	Multimission Scout	140
RC 7mm ACR (Advanced Combat Rifle)	60	Modular Cutter	142
Coalition Multipurpose Weapons System	62	Liferafts and Lifeboats	146
Shotguns	68	Wildbat Fighter/Foxbat Pathfinder	148
Gauss Small Arms	70	Fury-Type Assault Lander	149
VRF Gauss Gun	72	<i>Mary Ellen Carter</i> Armed Merchant	150
Ithklur Small Arms	74	Hiver Transport	151
<i>Color Plates</i>	76-84	Hiver Tender	152
Plasma Bazooka	85	Hiver Utility Vessel	153
High-Energy Weapons	86	RULES EXPANSION	154
Lasers	88	INDEX	158
DEI Lasers	90		
DEI and CLC Lasers	92		
CLC Lasers	94		
Laser Heavy Weapons	96		

Reformation Coalition Equipment Guide

INTRODUCTION

The **Reformation Coalition Equipment Guide (RCEG)** is a supporting sourcebook intended for use with the **Traveller: The New Era (TNE)** science-fiction roleplaying game. RCEG is a detailed encyclopedia of the sorts of equipment, vehicles, weapons, and spacecraft that are typically used and encountered in the TNE universe. Each piece of equipment is described in terms of its use in the **Traveller** game, and also in terms of its technical particulars: size, mass, type of ammunition, fuel consumption, speed, etc. Most of these items are also illustrated by technical drawings, and many are additionally shown “in action” in the color plate section at the center of this book.

While by itself this book is an interesting look at the technical side of the campaign “universe” of **Traveller: The New Era**, full use of RCEG requires that players have at least the **Traveller: The New Era** basic rulebook (plus the usual 6, 10, and 20-sided dice, paper, and pencils). Use of the equipment in RCEG will be enhanced by the possession of **Brilliant Lances: Traveller Starship Combat**, and **Fire, Fusion, & Steel**, the **Traveller** technical architecture handbook, but these are not required. Also not required, but equally advantageous for the gaming experience are potato chips, pizza, soft drinks, and napkins when you spill those things all over your books and papers.

So What’s a Star Viking?

The official campaign background for **Traveller: The New Era** is set 3723 years from now in an area of space about 120 light-years from the planet on which you are standing. Eighty years earlier, this area of space had been part of an immensely strong empire which ruled over 11,000 worlds, encompassing 15 trillion citizens of dozens of different races. But this empire became embroiled in a horribly destructive civil war which lasted for 14 years, over the course of which hundreds of billions were killed, dozens of worlds sterilized, and the very fabric of interstellar society shredded. The final act of this war was the release of an artificially intelligent electronic virus. This virus, untested and uncontrollable, took the tools of interstellar civilization—computer-controlled starships, vehicles, cities, orbital stations, and robotic weapons systems—and brought them to life: horrible, insane, murderous life. Virus completed the devastation that civil war had begun, and a thousand-year-old society came to its final collapse. Seventy years later, the descendants of these infected machines live on, evolved to where they are no longer insane, but

instead pursue their own inorganic ends, and compete with the few remaining pockets of civilization for the technology they both need.

In the midst of this wasteland lies a small cluster of worlds that calls itself the Reformation Coalition. Surrounded by the ruins of a once-proud empire and a trillion unburied dead on cold, lifeless worlds, the Reformation Coalition has committed itself to the creation of a new interstellar society to unite the fragmented, isolated, xenophobic worlds that remain.

Because the Coalition is small, it has come to rely on lightning-swift raids when it is opposed by backward, decadent warlords and others who oppose the new dawn that the Coalition brings with it. These raids are conducted by the Reformation Coalition Exploratory Service (RCES), and are used to recover crucial technology left behind in the ruins, technology which the Coalition cannot build itself, but which it can use to build the foundations of its new beginning. One of the Coalition’s opponents is the Mercantile Guild, a loose affiliation of traders, slavers, and technology scavengers, which opposes all interstellar governments and seeks to maintain its monopoly on star travel. The Guild seeks to sow fear and distrust against the Coalition, and has begun spreading the word that the RCES is not the spearhead of a group of visionaries, reformers, or rebuilders, but are instead “Star Vikings”—heartless murderers and plunderers.

And therein hangs a tale. (For more information on these topics, see TNE sourcebooks **Path of Tears** and **Smash & Grab**.)

How to Use this Book

The primary use for RCEG is in support of a Reformation Coalition (“Star Viking”) campaign set in the Old Expanses and Diaspora sectors. The equipment contained is that used most often by the RC and its opponents, and includes some of the most valuable relic equipment which can be recovered from the worlds of the collapsed empire.

Players: Players will most often use this book as a catalog of equipment when outfitting their RCES or free-lance expeditions into the Wilds. When the text indicates that a piece of equipment is manufactured by the Coalition, their characters can often simply purchase it. If it is expensive or hard to come by, they may request its use of the governmental or corporate patrons who may be helping to outfit their mission.

Players may also spot some high-tech devices (such as the formidable *Intrepid* grav tank shown being recovered on the

cover and in the color plates) that they may wish to recover, by exploring worlds known to have had a suitable pre-Collapse tech level. Players who enjoy designing their own equipment (using *Fire, Fusion, & Steel* or the ship design rules in *Brilliant Lances*) will also find that RCEG provides a ready source of inspiration for variants or new designs.

Referees: When used by referees, RCEG constitutes an encyclopædia (we had an extra “æ” lying around) of equipment, weapons, and vehicles used by the opponents, allies, or acquaintances of the RC player characters. This equipment can be the object of opposed or unopposed recovery missions, or in some cases, could be occupied by Virus, and be an active opponent to the PCs all by itself.

Non-RC Campaigns: You don’t have to be playing in a Reformation Coalition campaign to get a lot of use out of the RCEG. The equipment in this book is based on all of the same “Imperial Space” technological assumptions that have illuminated previous editions of *Traveller*, and so are useful in most any *Traveller* variant campaign. And maybe you just like all of the cool pictures and descriptions. After all, that wouldn’t be that unusual...

No, Really: Also, rolling this book up tightly will allow you to use it as a club to kill small insects, and broken windows may be repaired by using duct tape to firmly affix this book over the missing pane (paper is a great insulator). Young children often need a booster platform to get their little bodies up to the level of the dinner table, and, although phone books have traditionally been used for this purpose, RCEG is clearly more effective because the thickness of each RCEG in a stack of, oh, say 20 or so, allows you to make more precise adjustments to the height than would be possible with thicker phone books.

See? The uses of this book are as limitless as the breadth of your imagination (or the depths of your neurological disorders, as the case may be).

Fire, Fusion, & Steel

With the exception of the low-tech bows and muskets on pages 102-103, all of the equipment contained in the RCEG is designed using the *Traveller* technical architecture manual: *Fire, Fusion, & Steel* (FF&S). When there are discrepancies between equipment details published in RCEG as compared to earlier TNE products, take the data in this book to be definitive.

This equipment is designed using baseline technology fields, and only the standard “Imperial Space” technology fields of contra-grav technology, jump drive, and laser focusing (see TNE, pages 330-332). The ideas and variations in this book should fuel the imaginations of *Traveller* equipment designers, as they have in fact fueled the imaginations of the GDW staff.

What’s more, RCEG contains expansions to the *Fire, Fusion & Steel* design sequences on pages 154-157. There are some specialized applications of the FF&S technology that simply require a little more detailed treatment than was possible in a book as already packed with information as FF&S. Among these applications are the design of grav belts, plasma bazookas, flechette rounds for grenade launchers, and multimission pods and modules. Happy designing!

Future Developments

We will continue to support FF&S designs in the RCEG format in *Challenge* magazine, in a regular feature called “TAD (Technical Assessment Database) Update.” We welcome submissions

from current and new *Traveller* authors and enthusiasts. All designs must be accompanied by design worksheets and a sketch or description of the appearance of the equipment, and should be compatible with the Reformation Coalition campaign. Designs may be altered for publication to ensure campaign and rules consistency. Write to GDW for *Challenge* submissions guidelines, specifying “TAD Update.”

The Conclusion, Wherein Dave Has Some Final Thoughts on Tooth Marks

I believe that RCEG might just be the most detailed, most fully realized fictional equipment sourcebook ever published for a roleplaying game.

That sounds more than a little arrogant, so I’ll elaborate.

With the *Fire, Fusion, & Steel* design sequences used in *Traveller: The New Era*, you don’t so much make up a new piece of equipment as *discover* it—discover how it works, discover how it’s used, discover the story behind the ratings that you’ve calculated. I’ve seen a lot of sourcebooks that describe a weapon or vehicle as having a particular quirk, peculiarity, or weak point, and have been disappointed when those descriptions turn out to be simple narrative chrome—the quirks are not connected to the game’s rules so that they result from the game’s design sequence or even show up during play. What has obviously taken place is that the writer has thought up an interesting object with one or more interesting features and has described it as such, whether or not the game system actually supports what has been said.

What we’ve got with the FF&S sequence is a sufficiently large body of defined technological functions that you can simply try some ideas out and see what you come up with. This is the opposite approach from that described above, because the interesting features arise from the design sequence itself, kind of like in real life, and you the designer now get to take it out for a test drive. So many of the weapons or ships in this book have emerged from the design sequence as feisty little buggers that keep asserting their own identity, rather than simply accepting the perfectly clean, matter-of-fact parameters that we would have imagined for them.

This is of course so similar to the story of every real aircraft, vehicle, or weapon that has ever been designed (no machine is ever all things to all people, no matter how many specifications boards, congressmen, or defense secretaries may demand it) that it is easy to imagine that we are describing things in this book that actually exist 3700 years from now. I find myself frequently saying things like, “Hey, Loren, I just figured out how they use this thing, and why they built this other thing to use with it,” except that I am usually more specific about the things I’m talking about.

So what “most detailed, most fully realized” sourcebook means is that it feels like we didn’t just make this stuff up. Instead, it welled up out of the TNE universe and sort of snuck up behind us and bit us (and pretty *hard* too, some of it), allowing us to wrestle it to the ground and shoehorn it all into this densely packed volume.

Inevitably, there were things that we had to leave out or couldn’t elaborate as fully as we wanted (after all, publishing imitates reality in its inherent imperfection and incompleteness). In a sense this is a blessing in disguise, as it means we get to do another installment someday, which we can make even more interesting than we think this one is.

We hope you find all of this gear to be as fascinating as we have.



Security Clearance



28 IX 1201

Date

Reformation Coalition Exploratory Service Office of Technical Intelligence Aubaine

This document is the most recent installment of the RCES Technical Assessment Database (TAD). It contains many new entries for newly recovered analyzed and described equipment, as well as revisions and updates of equipment described in earlier TAD installments. These changes and revisions are the result of new information for non-Coalition equipment and changes or finalizations to designs being produced or developed within the RC.

All RC personnel are encouraged to forward to this office any field observations which may impact on intelligence estimates contained in this or any other database. Future databases are being compiled as you read this. Data on Guild-supplied and supported materiel is of particular importance. Report any unusual distributions of technology and equipment that indicates off-world influences.

Good Hunting. Strike Hard. No Regrets.

CDR Jezebel "Saint Joan" Proffit
Commanding, OTI

ORGANIZATION

This collection is broken down into four broad areas: Equipment, Weapons, Vehicles, and Spacecraft.



Equipment

This category includes personal transportation, personal armor, communications devices, sensors, vision enhancement devices, survival equipment, and medical technology. Although all of these have military applications, they are not considered to be weapons in the strict sense.



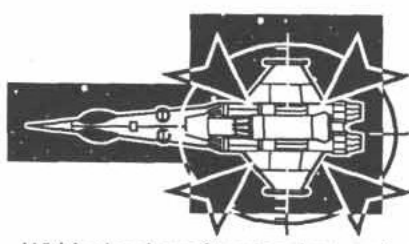
Weapons

This category covers non-vehicular offensive technology, i.e., devices intended to break things and hurt people. This includes personal small arms, heavy support weapons, antiarmor and antiaircraft weapons, and planetary defense missiles.



Vehicles

Vehicles include utility and transport vehicles, as well as military vehicles, which are often self-propelled weapons. Vehicles are defined distinctly from spacecraft by the fact that they carry out their primary function solely within the planetary regime. Although some vehicles might be able to attain orbit under their own power, it is not exo-atmospheric travel or combat that is their main purpose.



Spacecraft

Spacecraft are vehicles designed specifically to operate in interplanetary space. These chiefly include starships, but also include non-jump-capable craft used for system defense or support of starfaring vessels. Vessels which are used chiefly for interface transport and are carried aboard starships are classed as spacecraft for these purposes, not vehicles.

Within the above functional categories, equipment is further defined by main user or source: RC, Last Imperium (Relic), Guild, Wilds, and Hiver. Some of these functional areas overlap, for example, relic technology used by worlds in the Wilds, or relic technology copies of which are also in production within the RC. In these cases, the assignment is based on which category is more "typical."

For example, grav belts (page 10). Although TL-12 versions of the grav belt are produced in the RC, this is done only in limited numbers, and most grav belts (as opposed to grav rails) in Coalition service are actually relics. However, as almost all grav belts seen in use are in Coalition service, they are assigned to the RC category. Likewise, relic small arms that are of sufficiently low technology that they are readily used on the worlds where they are found (pages 50-51) are classed as Wilds, because they are most often found in use, rather than waiting to be recovered.

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Reformation Coalition

This is equipment which is either currently manufactured by RC member worlds, or relic technology which has been recovered in sufficiently large numbers that it has been standardized for use within the RC. Note that RC standard equipment is manufactured from tech level 8 to 12 by the following worlds. Percentage is the approximate share of total RC industrial production from tech levels 8-12 performed at that TL.

TL-12	Aubaine	16%
TL-11	Aurora, Eos	1%
TL-10	Fija, Trybec	6%
TL-9	Oriflamme, Baldur, Nike Nimbus	74%
TL-8	Lucifer (Luhtala)	3%



Last Imperium

This is relic technology manufactured by the Last Imperium which is not typically in use by other powers but which can be recovered and returned to service by RC organizations. These items are usually found one at a time in various states of disrepair, scattered across any of the innumerable worlds frequented by the Imperium, but can rarely be discovered in large quantities in warehouses, depots, or military bases. These items may also be infected by Virus, or even be found in use by Vampire forces.



Mercantile Guild

These are items, almost always weapons, which are distributed to anti-RC forces (usually technologically elevated dictators—TEDs) by the Mercantile Guild. Guild distribution was first discovered by the large number of identical weapons on widely separated worlds which appeared to have been introduced relatively recently, and were not locally manufactured and do not follow the typical pattern of relic technology distribution. We now have documentation that many of these systems are traded by the Guild for local materials, goods, services, or even slaves.

Those which have been firmly identified as Guild-supplied equipment are indicated as such here, but it is likely that there are additional classes of equipment that we have simply not yet tied to Guild activity. This category also includes certain equipment which is typically used by the Guild crews themselves.



The Wilds

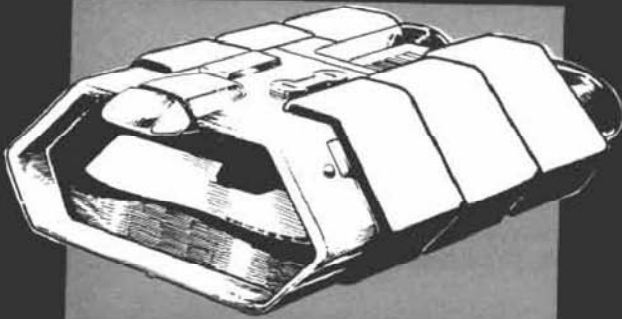
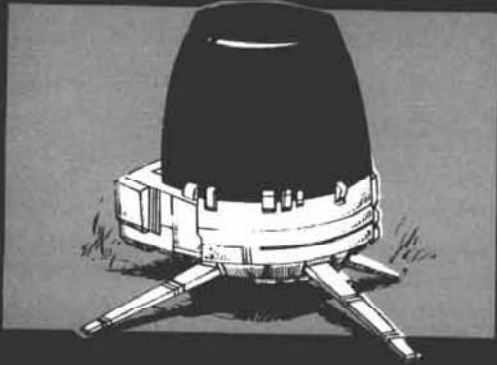
This is equipment, usually weapons, which is found in the service of armed forces in the Wilds. This includes locally manufactured low-tech equipment as well as standard Last Imperium equipment which was distributed in such large numbers that it can still be said to be "standard" on hundreds of separate worlds. It does not include equipment which we believe is used primarily as a result of Mercantile Guild supply.



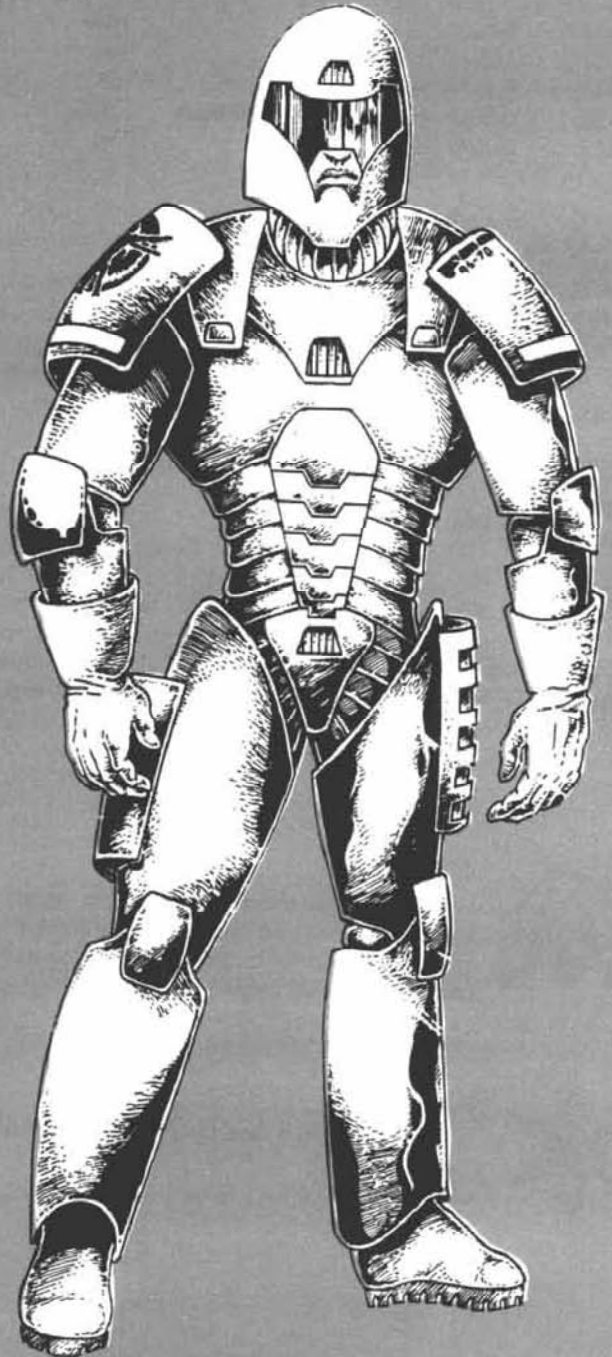
Hivers

This is equipment used by the Hivers themselves or by Hiver subject races, particularly the Ithklur.

E



EQUIPMENT



EQUIPMENT

The equipment in this section serves a variety of purposes, from personal transport and armor to communications, surveillance, survival, and medical gear. Some of this equipment is standard issue (such as the personal armor, communicators, and vision devices), while others is available only to specialized units or on an as-needed basis (grav belts, drop capsules, remotely operated sensors, anti-virus equipment, covert operations equipment, and portable automeds).

When establishing the need for equipment to accomplish a certain mission, planners must first establish how much of the Coalition's most precious asset—its personnel—will be assigned to the operation. This is not the simple matter it would have been under the Last Imperium with its seemingly infinite assets and standardized tables of organization and equipment.

In the Coalition, nothing is standard. Because missions are backed by any combination of the RCES itself, one or more RC member worlds, or one or more RC corporations, and carried out with any combination of RC troops, planetary troops, or groups of free-lancers, everything is an *ad hoc* or task-organized arrangement. Many times an operation is carried out by whatever persons happen to be standing around nearby, equipped with whatever gear is close at hand.

However, for purposes of planning, there are a few basic concepts that recur in most RC operations.

The basic building block in the Coalition armed forces is the four-trooper fire team. There are different types of teams used for different purposes, and these are combined together in various mixes to accomplish the mission at hand. The following descriptions are not *official* in any sense, but are *typical*. These include page citations for the equipment described elsewhere in this book or in the basic TNE rule book.

Light-Powered Fire Team: Four troopers in light battle dress (pages 18-19) armed with three 7mm advanced combat rifles (pages 60-61), CMWS rifles (page 65) or 4mm gauss rifles (page 70) and one 2cm light assault gun (page 54), plus a mix of RAM grenades (page 101) and single-shot disposable tac missile launchers (page 108).

Heavy-Powered Fire Team: Four troopers in heavy battle dress (pages 20-21) armed with three 4mm gauss rifles (page 70) or 4cm CLC laser rifles (page 93) and one 2cm light assault gun (page 54), 4mm gauss SAW (page 71), or 4.3cm plasma rifle (page 86), plus a mix of RAM grenades (page 101) and single-shot disposable tac missile launchers (page 108).

Unpowered ("Muscle") Fire Team: Four troopers in combat environment suits (TNE, pages 358-9) or body sleeves (pages 16-17), armed with three 5.5mm assault rifles (page 52) and one 5.5mm assault rifle with attached 2.5cm grenade launcher (page 53), plus a mix of RAM

grenades (page 101) and single-shot disposable tac missile launchers (page 108).

Reconnaissance and Designation Team (RDT): Four troopers in combat environment suits (TNE, pages 358-9) or body sleeves (pages 16-17) armed with two 3cm CLC laser carbines (page 94), two 2cm CLC personal defense lasers (page 95), two 13mm sniper rifles (page 55), and one broomstick (page 11).

Powered Fire Support Team: Three troopers in light or heavy battle dress (pages 18-21) and one trooper in heavy scout battle dress (page 21), armed with one 6cm squad support laser (page 96) or 6cm laser sniper weapon (page 97), two 2cm personal defense lasers (page 95), and one 4.3cm plasma rifle (page 86) or 6cm assault rocket launcher (page 98).

Unpowered ("Muscle") Fire Support Team: Four troopers in combat environment suits (TNE, pages 358-9) or body sleeves (pages 16-17), armed with one 6cm squad support laser (page 96) or 6cm laser sniper weapon (page 97), two 2cm personal defense lasers (page 95), and one 9cm plasma bazooka (page 85) or 6cm assault rocket launcher (page 98).

Thus a nominal squad of powered troops could consist of two or three fire teams, or two fire teams and a fire support team, plus a commander, totalling 13 troops. A muscle squad could also consist of two fire teams and a fire support team or RD team and a commander. The Coalition frequently deploys mixed squads of muscle and light-powered units (for example, one muscle fire team, one light-powered fire team, and a muscle fire support team) for greater combat power and survivability.

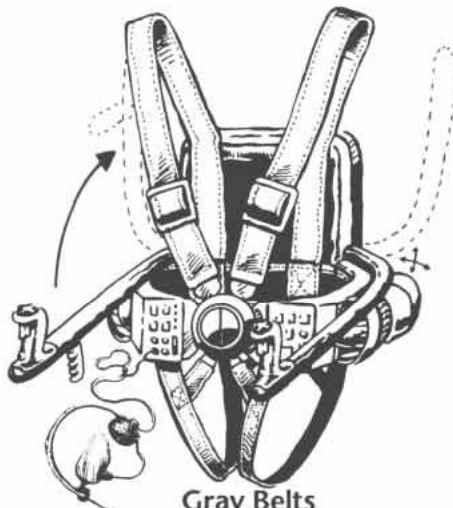
Note that the overall size of a squad is limited by the delivery methods available. For example, the drop capsule pod for the Multimission Scout (pages 140-141) normally carries 12-13 drop troops (leaving space for 2-3 decoy or equipment drop capsules), the drop capsule pod for the Victrix ships (pages 138-139) normally carries 14-16 troops (leaving space for 8-10 support capsules), and the Fury-type assault landers (page 149) carry a maximum of 14 troops.

Units above can be further reinforced by the addition of a "ragtop" air raft (pages 114-115), or some form of grav armor fire support such as the Mongoose attack speeder (pages 116-117) or Pyrrhus support sled (page 126).

Additional equipment such as portable sensors, communications uplinks, anti-virus equipment, etc., can then be assigned to the unit based on its necessity, the personnel requirements for operating it, and the transportation requirements for delivering it and moving it around once it is delivered.

For the equipment in this section, volume is given in either liters or cubic meters (m^3 , 1000 liters = $1 m^3$), mass is given in kilograms (kg) or metric tonnes (1000 kg = 1 tonne), and price is given in credits (Cr) or megacredits (MCr, where $Cr1,000,000 = MCr1$).

Personal Contra-Grav Transportation



Grav Belts

The manufacture of grav belts only becomes possible at tech level 12 when contra-grav modules can be miniaturized to the scale of a single person. Grav belts are manufactured in limited numbers on Aubaine, and are issued only on a strict as-required basis. However, relic grav belts are sometimes recovered and used in private service.

Grav belts resemble parachutes in that they consist of a large backpack attached to a parachute-style harness. In addition, they have two arms at about the approximate location of the arm rests on a chair. At the end of these arms are the hand grips that are used to control the grav belt. These arms can be swung out of the way over the wearer's head to allow the use of firearms, etc. In addition, there is a data display headset that is attached to the backpack by a wire, and which is fitted to the head when the grav belt is being worn. The headpiece has a monocular heads-up display which displays such data as airspeed, altitude, remaining battery endurance, etc. The headpiece also contains a single earpiece which is used to send aural warnings to the user, such as a tone to warn the wearer that he or she has descended below a certain preset altitude, or that the battery is down to bingo charge (half empty) or its last five minutes of charge.

The harness is heaviest about the waist, where the contra-grav (CG) projectors are placed. Also fitted at the waist are fully vectorable shrouded fans that provide thrust for maneuvering.

The CG lifters and propulsion fans are all powered by a two-hour endurance battery which, along with supporting electronics and avionics, is carried in the backpack.

Because contra-grav technology is not a thrust generator, but rather creates a field within which gravity vectors are 99% negated, there are some phenomena associated with using a grav belt. One is that other objects within the field besides the wearer also have their weights largely negated. This means that if the grav belt wearer attempts to drop a grenade, the grenade will slowly float to the ground at 1% of its normal falling acceleration until it passes out of the CG field, at which point it will fall normally. It is important to remember that such objects must be *thrown* downward out of the field, rather than simply dropped. Another example is that if the grav belt wearer flies near a tree so that a branch projects into the field, the branch, temporarily relieved of its weight, will flex upwards. An insect that flew through the field would experience a similar result.

The contra-grav field generated by the belt is of sufficient size to contain the grav belt's hardware as well as a wearer whose limbs are held in a fairly compact posture. However, the CG envelope is relatively small in order to keep power requirements down and to avoid the difficulties of having the field projected over too many other extraneous objects. This means that the wearer, especially one firing a weapon, can break through the edge of the CG field with bodily extremities or pieces of equipment (this is not a problem in grav vehicles or spacecraft because the edge of the field coincides with the hull walls), which can cause potentially catastrophic stability problems. Grav belts are fitted with microflight computers which keep track of the grav belt's attitude and make constant minute thrust corrections to maintain a smooth, level, and safe ride. This computer also allows the wearer to relinquish control of the belt for periods during combat in order to fire weapons, reload, etc. During this period, the computer can hold a straight and level course, hover, etc.

Grav belts may be recharged from standard RC power outlets.

Persons wearing grav belts are fired on and take damage as normal personnel targets. Both grav belts below have the following performance figures:

Capacity: One person plus armor and equipment (may include battle dress-equipped trooper). In emergencies, a second person may be carried, but this person must cling very tightly to the grav belt wearer in order to remain within the CG envelope, and the wearer may not conduct any activities except to fly the belt.

Speed: 300 kph maximum, 225 kph cruising, 40-120 kph NOE

Combat Move: 42 10-meter grid squares in high mode (absolute speed), 6 10-meter grid squares in NOE mode (safe speed)

Grav Belts

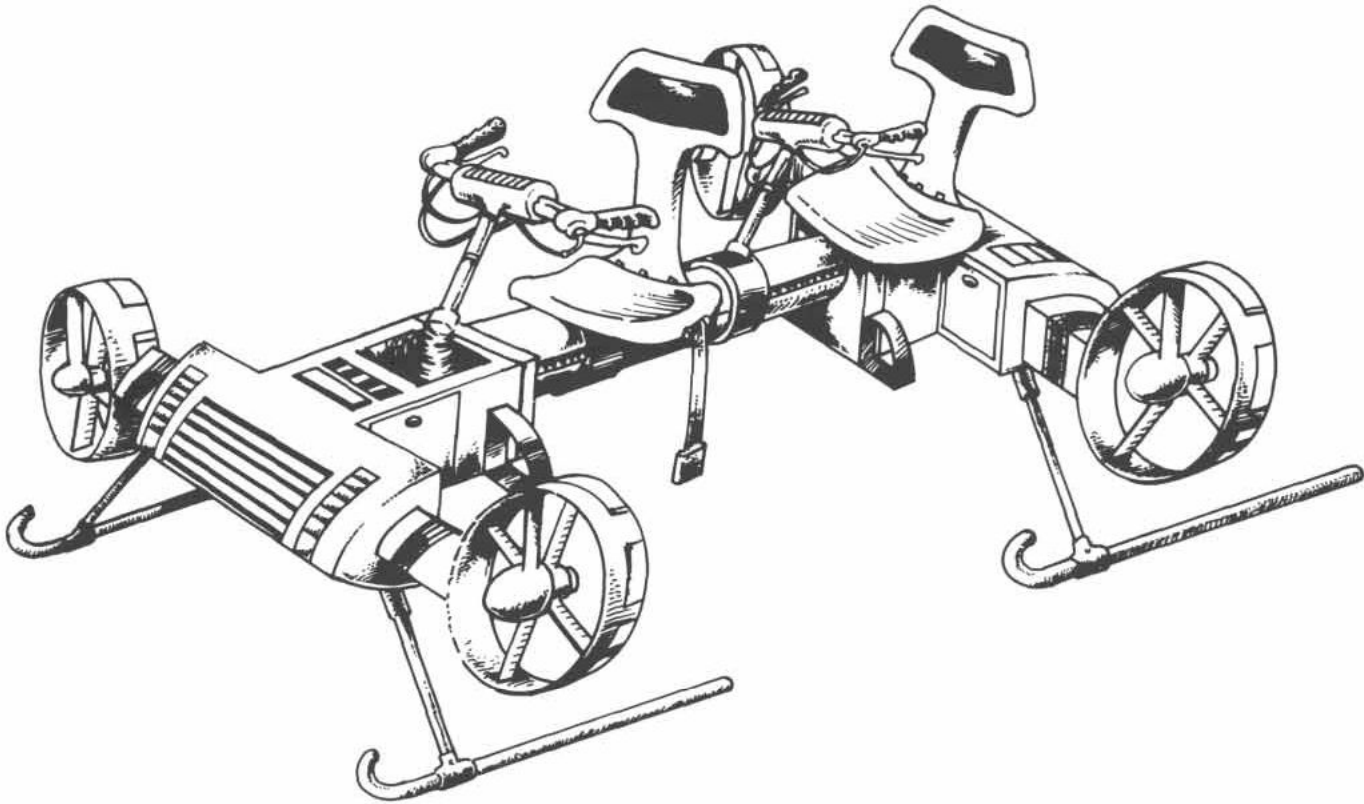
TL	Mass	Volume	Endurance	Price
12	108 kg	75.5 liters	2 hours	Cr114,960
15	90 kg	63.5 liters	2 hours	Cr115,100

Security Clearance

Yes No

28-IX 1201

Date



Broomstick (TL-12 Tandem Grav Rail)

The official RC name for this device is the *tandem grav rail*, but it is almost without exception simply called the "Broomstick." It is basically a two-person grav belt, with the passengers in a tandem configuration. The broomstick actually sees wider use in RC service than the grav belt, because the broomstick is more economical to produce per passenger carried, because there is only one microflight computer and avionics set per two passengers, instead of for each passenger. In addition, the broomstick allows passengers to be easily picked up and dropped off by a single pilot.

Although the components of the broomstick are essentially the same as those in two grav belts, they are laid out differently. Rather than placing the batteries and controls on the rider's backs, they are placed in pods beneath the connecting strut for greater stability. And because the broomstick riders are placed in a sitting position, they take up less envelope space, allowing the envelope to be lengthened to contain larger batteries.

It has the same operational peculiarities noted with the grav belt (facing page), and like the grav belt, operates in total silence. The broomstick is typically used by RC troops for reconnaissance. The broomstick is operated with Grav Belt skill.

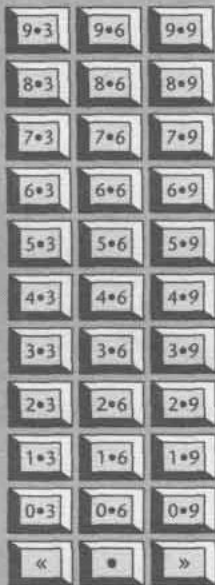
Fire at personnel riding a broomstick is treated as fire against motorcycle riders (TNE, pages 278 and 298).

Tech Level: 12
Price: Cr116,900
Size: 0.2 tons (SM)
Mass: 231.2 kg empty
Power: 0.04558 MW TL-12 battery with shrouded propellers providing 0.02638 tonnes of thrust
Maint: 1
Controls: Dynamic linked, TL-6 flight avionics, TL-12 microflight computer

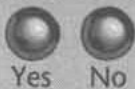
Commo: None
Life Support: Light
Cargo: Personal equipment carried by two riders only
Crew: 1
Passengers: 1
Travel Move: 900/240
Combat Move: 42/6
Fuel Capacity: 4 hours duration for battery which powers CG lifters and shrouded propellers
Combat Statistics: Treat as motorcycle (TNE, pages 278 and 298)



Personal Reentry Kit

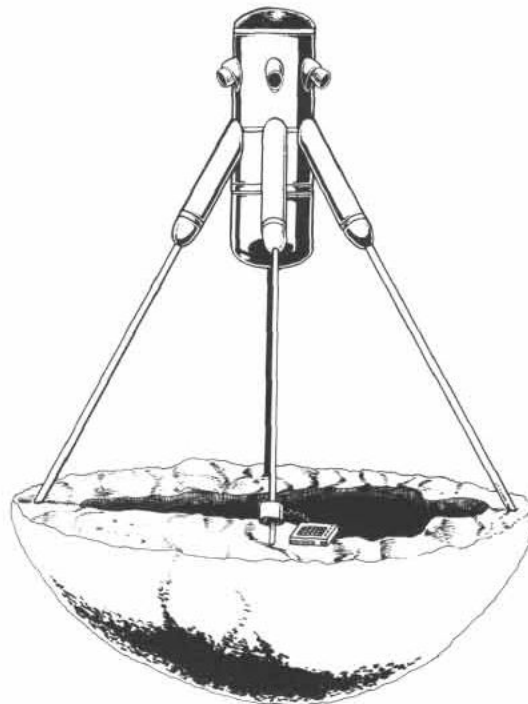


Security Clearance



28-IX-1201

Date



Personal Reentry Kit

Originally invented as a means of emergency atmospheric reentry from a crippled space vessel, the personal reentry kit (PRK) was quickly adopted by the military and provided the glamorous *raison d'être* for jump troops (although first-line jump/drop troops have long since transitioned to purpose-built *drop capsules*—see pages 14-15). So appealing is the image of meteoric descent from orbit that these kits have even enjoyed some popularity among hobbyists. For sporting displays, the ablative foam can be formulated to burn in a variety of colors, creating stunningly beautiful pyrotechnic displays in the hands of skilled operators.

Each kit consists of an inflatable hemispheric mold, a pressurized cannister of ablative foam, and a chemical thruster for attitude control and limited vector adjustment. The kit does not include a soft landing system (usually a parachute); this item must be purchased separately.

The PRK has no provision for defensive decoys and depends upon its operator for maneuvering instructions (instead of the on-board computer used by Coalition drop capsules), which means that the operator must have some Environment Suit skill if an unskilled task roll is to be avoided.

TL-8 and 10 versions below are manufactured in the RC, TL-13 PRKs are available only as relics.

TL	Volume*	Mass*	Price*
8	20 liters	14.5 kg	Cr15,000
10	16 liters	11 kg	Cr12,000
13	12 liters	8 kg	Cr10,000

*This is purely for the PRK alone, and does not include a parachute, parawing, grav parachute, or grav belt.

PRK Reentry Sequence

The TNE rules make reentering with a PRK a single Difficult: Environment Suit task, with the recommendation that the referee implement Diff Mods for dense atmospheres or high initial vectors (PRKs may not be used in atmospheres of very thin or less). Players and referees who wish to play out the situation in more detail may wish to use the following optional sequence:

1. Deploy Kit and Ablative Foam Shield: The user unpacks the kit, deploys the mold, prepares the ablative heat shield, and otherwise prepares for the descent (Easy: Environment Suit). Any success indicates that the kit has been deployed correctly. Failure means that the kit has not been deployed properly, and the user must try again. Catastrophic Failure indicates the kit has a minor defect, and the reentry burn task is carried out at +1 Diff Mod.

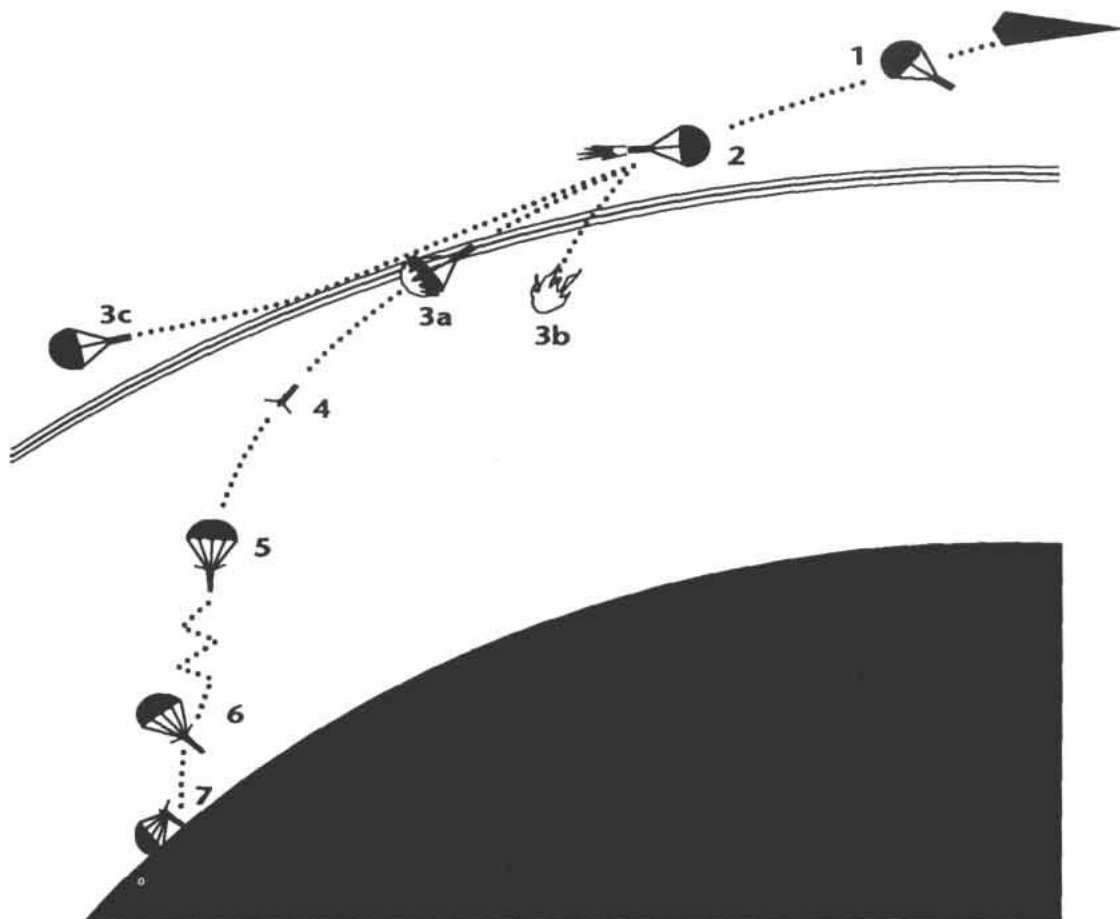
2. Calculate Trajectory and Execute Reentry Burn: If the user wishes to try to land at a specific 1 km square landing zone, this is the point at which that must be specified to the referee, and the trajectory calculated on that basis. If the character does not choose a specific landing zone, the reentry task is carried out at -1 Diff Mod, and the referee picks a landing zone at random.

The user calculates the desired trajectory and executes a reentry maneuver (Difficult: Environment Suit). Reentry in dense atmospheres or from a non-orbital trajectory is carried out at one higher Diff Mod (these are cumulative). Other decisions as to the reentry vector are left up to the referee's discretion.

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Success: On any success, go to step 3a (with reserve fuel).

Failure: User must recalculate the burn angle and try again. If successful, go to step 3a (without reserve fuel), if a second failure occurs, go to step 3c.

Catastrophic Failure: Go immediately to step 3b (with reserve fuel).

3. Reentry and Minor Course Corrections: What happens here depends upon the success of the task in step 2.

3a: The user is on course, and reenters the atmosphere. The ablative shield protects the user on the trip down, and minor course corrections may be made if the PRK has entered this step with reserve fuel.

The user may continue on to step 4.

3b: The user has reentered at too steep an angle, and must immediately try to correct this by a second burn (Formidable: Environment Suit), applying the Diff Mods for atmosphere and high initial vector, if any, and using up the PRK's reserve fuel. Success means that the user may go on to step 4.

3c: The user will strike the atmosphere at the wrong angle and "skip" off into space, drifting helplessly in orbit around the planet, and without fuel to change vector (the second burn exhausted the PRK's fuel supply).

4. Jettison Shield and Enter Free-Fall: There are no tasks associated with this step. If the user was able to make minor course corrections during step 3a, the user is now within 1D10 km of the chosen landing zone. If the user picked a landing zone, but was unable to make minor course corrections during step 3a, the user has deviated and is now 1D20+5 km from the chosen landing spot.

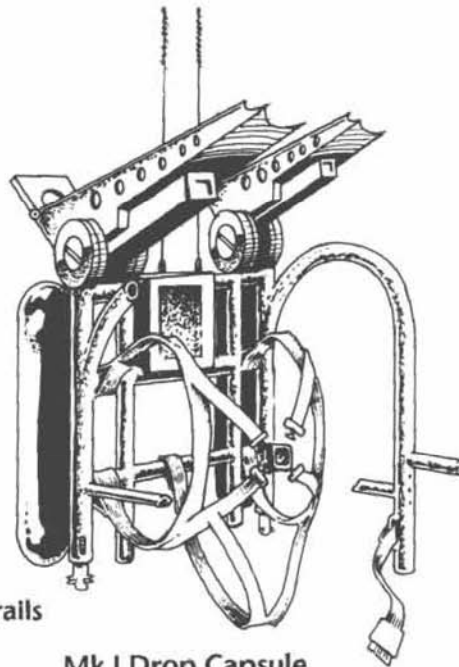
5. Deploy Parachute/Activate Grav Belt: The user now deploys the PRK's parachute, grav parachute, or parawing, or activates the grav belt. If using a grav parachute or parawing, the user may counteract 1D6 km of the course deflection introduced in step 4 (by succeeding at an Average: Parachute task—Catastrophic Failure adds another 1D6 km to the course deflection).

If using a grav belt, the user may fly to anywhere within its normal range (see page 10), and need not go through steps 6 or 7 unless desired. Operating a grav belt requires task rolls versus Grav Belt skill (see the basic rules, page 120, for a discussion of grav belt-related tasks).

6. Maneuver to Landing Zone: If using a grav parachute or parawing, the user may counteract another 1D6 km of the course deflection introduced in step 4 (by succeeding at an Average: Parachute task—Catastrophic Failure adds another 1D6 km to the course deflection). Users with grav belts may fly to their landing zone if it is within the grav belt's range.

7. Land: Characters using grav belts automatically land safely. Characters using any form of parachute to land safely must make a task roll. To land safely in most terrain is Average:Parachute, to land safely in woods, cities, swamp, or water is Difficult: Parachute. Parachutes may be used to attempt a landing at a specific location within the 1 square kilometer landing zone (Formidable: Parachute for simple parachutes, Difficult: Parachute for grav parachutes and parawings—see the basic rules, page 120, for a discussion of parachute-related tasks).

Drop Capsules



Parachute harness
with missile launch rails

Mk I Drop Capsule

The Mk I drop capsule carries one battle dress-equipped soldier and combat equipment through an atmosphere to a set of pre-programmed ground coordinates, piloted by the flight computer. On the trip down, the capsule executes evasive maneuvers using its thruster package, and deploys decoys as necessary. An ablative heat shield protects the passenger from the heat of reentry.

After passing through the upper atmosphere, the outer shell splits away, leaving the passenger in a small framework that acts as a shoulder harness for a steerable parachute. After a period of free-fall, the passenger deploys the parachute and glides the remaining distance to the landing zone. This free-fall can be short or long in duration, depending upon tactical demands for low-altitude parachute opening (ODLO, orbital drop, low opening) or high-altitude opening (ODHO).

Upon landing, the framework that held the parachute forms a missile launcher. The two Lyrebird missiles sit on launch rails, and wait, while the launcher's computer/radio monitors the trooper's radio frequency. For a complete description of Lyrebird missiles and their use in combat, see page 107.

A Mk I may carry one soldier and a varying amount of equipment. If the passenger wears heavy battle dress, the capsule can accommodate up to 260 kg of additional equipment and supplies (including personal weapon). A passenger with light battle dress can carry up to 476.5 kg. A passenger without battle dress (a foolish passenger, in other words) could carry up to 679.7 kg of additional equipment.

When conducting drop operations, battle dress suits are equipped with a small (0.5 kg, Cr100) one-hour duration air supply. This is what the trooper will breathe during atmospheric entry and free-fall, and, assuming low-altitude parachute deployment, allows the trooper to remain in the launch tube awaiting launch for up to 50 minutes with sufficient air reserves to reach the ground.

Tech Level: 10

Price: Cr354,079

Size: 0.5 displacement tons (7m³), length 3.2 meters

Mass: 7.02 tonnes loaded, 6.24 tonnes empty (as they are not reusable, empty mass includes everything but passenger and cargo)

Power: 0.04 MW battery

Maint: 1

Passengers: 1 soldier in battle dress, with equipment (max. 0.68 tonnes)

Offensive Armament: Twin Lyrebird remote missiles in package launchers.

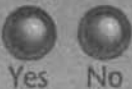
Defensive Armament: Anti-radar decoy dispenser, anti-EMS decoy dispenser, anti-IR decoy dispenser

Ammo: 5 each x anti-radar, anti-EMS, and anti-IR decoys

Maneuverability: Liquid fuel thrusters for 0.75 G and 4 minutes fuel

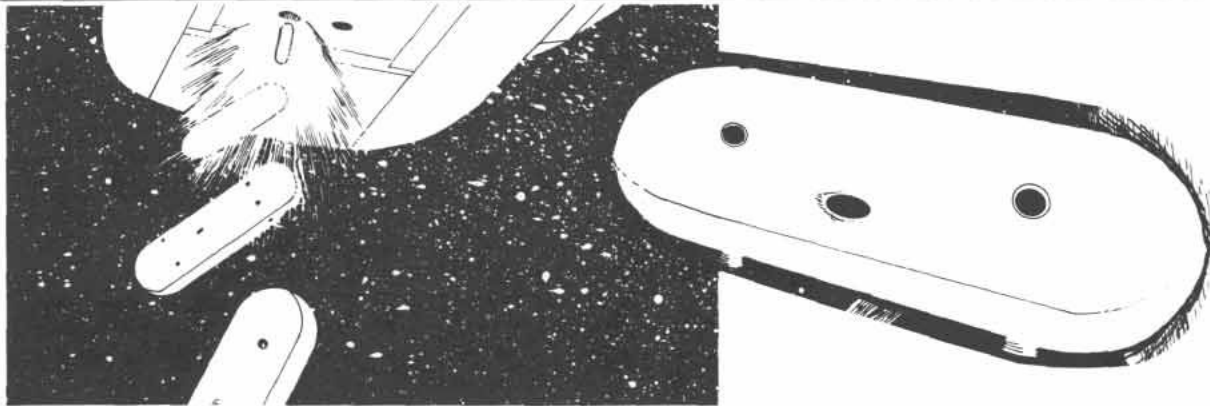
Armor: 10

Security Clearance



28 IX-1201

Date



Mk II Drop Capsule

The Mk II drop capsule is a family of unmanned capsules intended for use in support of the Mk I capsules, either for cargo carriage or as armed decoys. The Mk IIs are piloted by the same flight computers as the manned Mk Is. Like the Mk I capsule, the Mk II executes evasive maneuvers using its thruster package, and deploys decoys as necessary in the upper atmosphere, thereby appearing identical to the manned capsules on enemy sensor screens.

After passing through the upper atmosphere, the outer shell splits away, leaving the contents to either descend by parachute as with the Mk I, or fall directly to the ground. There are three types of Mk II drop capsules, each having a different job.

Mk IIa Decoy Capsules: These cover the other capsules on the way down by providing additional targets for ground fire and additional decoy protection. Just before arriving at the target, the capsule splits open and deploys its payload of 50 250-kg deadfall bombs with devastating results. These capsules are usually fired to drop their ordnance on enemy defensive positions.

Mk IIb "Iron-Hand" Capsules: These capsules provide SPAD (Suppression of Planetary Aerospace Defenses) "top cover" for the attacking force. Each capsule contains a Mjolnir advanced anti-radiation missile (Advanced-ARM), which descends beneath its parachute while scanning for enemy active sensor emissions. If any are detected, the missile sheds its chute and launches itself at the source of the signal. As the missile has target memory, even if the sensor shuts down, the missile remembers the last place it got a signal from and the radar must move if it is to avoid being hit. See page 109 for further details.

Mk IIc Cargo Capsules: These carry additional supplies for a raid, and accompany a raid down, shedding decoys, maneuvering, and landing as normal drones. The capsule contains an inner canister (with an armor value of 2) which descends beneath a parachute. The canister's cargo capacity is limited by a combination of parachute load-carrying capacity and the nature of the cargo. Cargo capacity for normal equipment (such as firearms and ammunition) is 1236 kg. Because electronics requires more protection and careful packaging, only 824 kg of electronic equipment can be carried. Up to 2320 kg of extremely durable supplies packed in bulk (such as premix concrete or steel rebar) may be carried with a main and reserve chute, or up to 5070 kg with only a main chute (no reserve).

Tech Level (all variants): 10

Price: *Mk IIa:* Cr360,094 (not including price of bombs—see below); *Mk IIb:* Cr360,094 (not including price of Mjolnir missiles—see page 109); *Mk IIc:* Cr360,418.

Size (all variants): 0.5 displacement tons (7m³), length 3.2 meters

Mass (all variants): 18.82 tonnes (Mk IIa), 8.82 tonnes (Mk IIb), or 7.579-11.825 tonnes (Mk IIc) loaded; 6.32 tonnes (Mk IIa & b) or 6.755 tonnes (Mk IIc) empty (as they are not reusable, empty mass includes everything but payload and cargo)

Power (all variants): 0.04 MW battery

Maint (all variants): 1

Passengers (all variants): None

Offensive Armament: *Mk IIa:* 50x250-kg deadfall bombs; *Mk IIb:* 1xMjolnir Advanced-ARM; *Mk IIc:* None.

Defensive Armament (all variants): Anti-radar decoy dispenser, anti-EMS decoy dispenser, anti-IR decoy dispenser

Ammo (all variants): 5 eachxanti-radar, anti-EMS, and anti-IR decoys

Maneuverability (all variants): Liquid fuel thrusters for 0.75 G and 4 minutes fuel

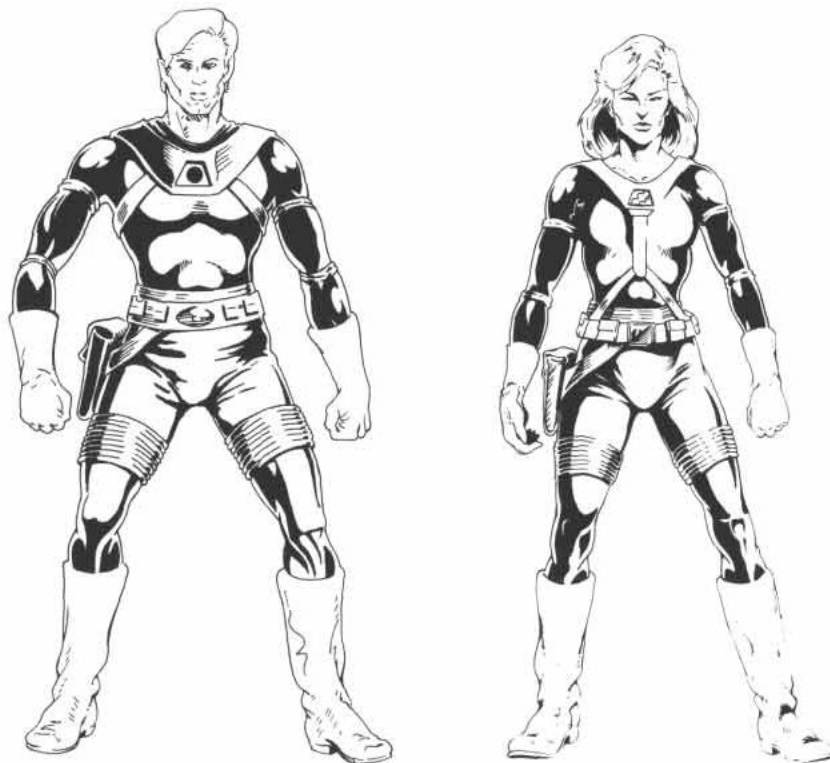
Armor (all variants): 10

250-kg (25cm) TL-7 Deadfall Bomb

Type	Dam	Pen	Mass	Volume (m ³)	Price (Cr)
250-kg HE	C: 94, B: 95	31C	0.25 tonnes	0.05	2500
250-kg HEAP	C: 62, B: 75	193C	0.25 tonnes	0.05	3750
250-kg Chem	C: 3, B: 75	Nil	0.25 tonnes	0.05	2500
250-kg Hvy SubMun	C: 0, B: 155	*	0.25 tonnes	0.05	15,000

* See TNE, page 285.

RCES Body Sleeve



RCES Body Sleeve

Perhaps the most typical and distinctive of the "Star Viking" equipment is the body sleeve: a multipurpose cooling system/G-suit/undergarment/utility uniform/body armor. The body sleeve was conceived as an undergarment worn beneath vac suits, combat armor, or battle dress. By incorporating various functions such as environmental control, G-suit bladders, and medical monitors into a comfortable "liner" garment, manufacture of the outer suits could be simplified, and putting these suits on could be done more quickly. In any event, the body sleeve has turned out to be so comfortable and useful that it has become the universal, all-occasion uniform for RCES and RCN personnel.

The body sleeve is, first and foremost, a full-body suit of ballistic weave armor with an environmental control system woven into it. Unlike the combat environment suit, which it resembles, it is a form-fitting garment (in order to slide easily into a vac suit or suit of armor, but the body sleeve is not sheer, resembling a 20th-century scuba wetsuit), and has a hood that can be pulled up to cover the head. When not up, the hood can be tucked down into the harness structure around the shoulders. This harness structure functions as the anchoring system when an airtight helmet is fitted to the suit, and is also a part of the body sleeve's integral load-bearing system to which grav belts, back packs, life support gear, and other loads are attached.

With the hood up, the only body portions exposed by the sleeve are the hands and face, which makes the suit an extremely valuable survival garment in the event of loss of pressure (a common fear in space). Although the body sleeve cannot fully function as a vac suit by itself, its protection does enable a crewmember wearing it to survive the worst effects of vacuum exposure for a few minutes. The edge of the hood is made of an adhesive material that makes a semi-airtight bond with bare skin, protecting the vulnerable eardrums (facial hair prevents a tight bond, so most RC personnel do not wear beards). By pinching the nose and closing the eyes, a person caught in a sudden depressurization can usually make it to an emergency oxygen mask stored in wall cabinets throughout all RC ships (and marked with bright strobe lights that can be seen through the eyelids). For this emergency use alone, the body sleeve is the universal shipboard uniform of RC forces. With proper gloves and helmet, the body sleeve is also fully sufficient to protect its wearer in very thin, thin, and tainted atmospheres (assuming atmospheric filtration and/or air supply, as appropriate).

Security Clearance

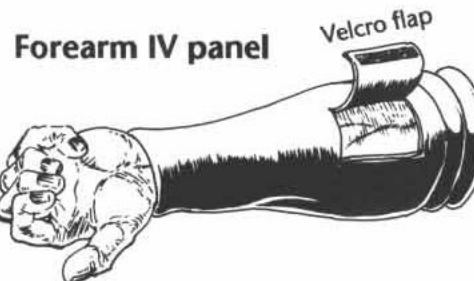
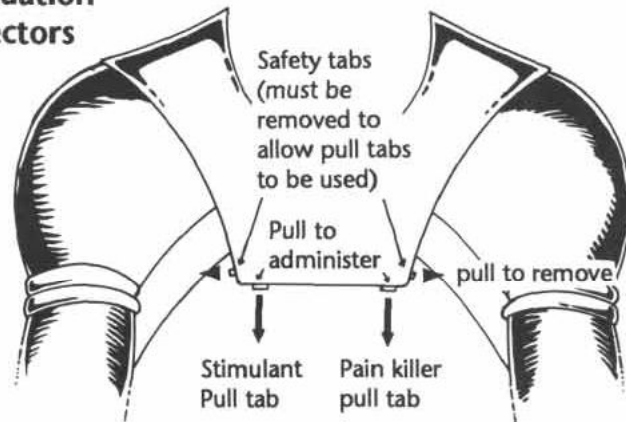
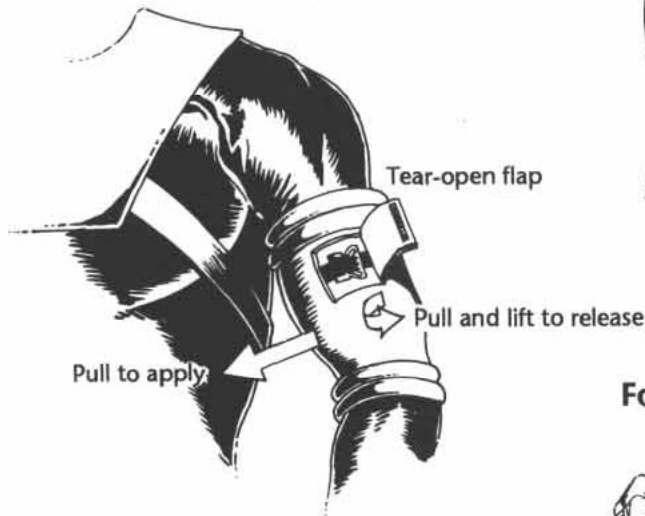


28-IX-1201

Date

Self-evacuation drug injectors

Upper arm integral tourniquet



Self-sealing
membrane for
needles, syringes, etc.

In addition, the body sleeve is fitted with bladders in the thighs and abdomen that allow it to function as a G-suit.

The sleeve is designed with a number of features used in medical and first-aid situations. The sleeve has several intermediate sterile layers which reduce the incidence of infection caused by dirty material being driven into the body by gunshot wounds, and the nature of the ballistic mesh works to hold wounds closed and keep the body in one piece in the event of more grievous wounds.

The thighs, arms, and chest all have special self-sealing membranes (thin enough to locate veins) beneath lift-up panels that allow IV needles (for medication, whole blood, or plasma) to be inserted into the wearer without breaching its airtight integrity.

"Pull tab" tourniquets are sewn into several locations on the arms and legs. These are self-ratcheting cables that can be cinched down with one hand by the suit wearer without additional assistance in case of serious wounds in the extremities. (These may also be periodically released to prevent tissue damage and cinched down again, also with only one hand). Each suit also has two pre-measured doses of drugs built into the suit near the shoulder harness, one of a powerful painkiller and one of a fast-acting stimulant. These are administered by the wearer with pull tabs, and allow a trooper who is wounded, and perhaps alone (and perhaps with one or more tourniquet cinched down), to evacuate himself from a dangerous situation and be rescued. When both doses are taken together, they allow 5 minutes of clear-headed functioning in most wound states. (In game terms, pulling the tabs overrides the loss of consciousness and Initiative penalties of all wound states, up to and including Critical wounds, for a period of 60 combat turns. Only a single such dose should be taken at a time. Each time an additional dose is taken within an hour, roll a Difficult task against CON. Failure indicates that the character instantly dies due to the stress being placed on the body.)

Characters who routinely wear a body sleeve do not assess its weight against their load-carrying ability.

The body sleeve comes in a variety of colors, including woodland camouflage, slate gray, and blue, but the pattern most often seen is the basic black version. Advanced options, such as chameleon IR systems, are also available, but are not listed below.

All members of RCES and RCN have body sleeves issued to them. These are not normally available to free-lancers or others working under contract for the RC.

Armor Value: 1
Agility Penalty: None
Basic Cost: Cr8500

Mass: 10.5 kg
Gloves and Hard Helmet (AV 0): Cr900
Gloves and Helmet Mass: 2 kg



RCES Light Battle Dress



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<<	•	>>

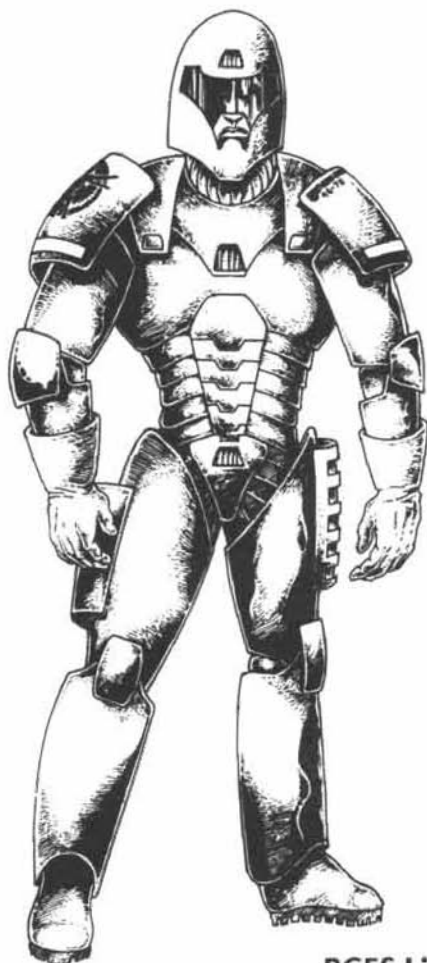


Security Clearance



28-IX 1201

Date



RCES Light Battle Dress

This unit is the standard light battle dress in use by the RCES raider forces, and is common in other military units as well. The standard model is fitted with a powered exoskeleton (which doubles the effective strength of the wearer), environmental control systems, filters, and respirator fittings (to enable the wearer to function in tainted and thin atmospheres), a laser designator unit (6-km range), an integral 3-km radio, and an integral WSV suite displaying on the inside of the helmet visor. The laser designator unit can be fitted to either the left or right forearm, at the wearer's option, and can be used to "paint" any target the wearer can see within a range of up to 3000 meters.

Some suits are manufactured with an integral "Chameleon" camouflage feature, which adjusts the suit's IR heat signature to match its surroundings. This feature must be incorporated during manufacture.

The suit's power supply is sufficient to enable it to operate for up to 10 hours before recharging is required. All suits are supplied with standard power and life support fittings, allowing users to plug into a ship or vehicle power/life support system and conserve or recharge their resources. The laser designator is only supplied with a battery sufficient to last for a total of 6 minutes, however, so its use must be carefully rationed.

Optional Features: Oxygen tanks can be added to the basic suit in order to enable the wearer to function under vacuum situations. Individuals requiring additional radio communication range may substitute a 30-km radio for the standard 3-km model.

When being used for meteoric assault in a drop capsule, the battle dress is fitted with a small air supply sufficient for one hour, with negligible mass and price (0.5 kg, Cr100).

Reformation Coalition Equipment Guide

Power

ON/OFF



Basic RCES Light Battle Dress (includes Helmet WSV suite, 3-km Radio, and Laser Designator)

SM	AV	AM	BV	BM	OSM	TM	MW	End	SMCr	AMCr	BMCr	OSMCr	TMCr
0.1	6	.054	.0235	.047	.0022	.2032	.00342*	10*	.14	.00513	.0001075	.007625	0.153

Basic RCES Light Battle Dress (as above, with Chameleon feature)

SM	AV	AM	BV	BM	OSM	TM	MW	End	SMCr	AMCr	BMCr	OSMCr	TMCr
0.1	6	.054	.0235	.047	.0022	.2032	.00342*	10*	.14	.00513	.0001075	.008625	0.154

* Listed MW is for systems powered to 10 hours endurance: the battle dress itself, helmet WSV suite, and 3-km radio. Laser designator (which draws 0.005 MW) is powered to only 6 minutes.

Add O₂ Tanks to the above (5 high-pressure tanks; 20 hours)

—	—	—	—	—	—	—	+0.1	—	—	—	—	—	+0.02
---	---	---	---	---	---	---	------	---	---	---	---	---	-------

Replace 3-km Radio with 30-km Radio (includes increased battery capacity)

—	—	—	—	—	—	—	+0.12	—	—	—	—	—	+0.002047
---	---	---	---	---	---	---	-------	---	---	---	---	---	-----------

Abbreviations

SM: Skeletal mass, in tonnes; **AV:** Armor value; **AM:** Armor mass, in tonnes; **BV:** Battery volume, in m³; **BM:** Battery mass, in tonnes; **OSM:** Other systems mass, in tonnes; **TM:** Total mass, in tonnes; **MW:** Megawatts; **End:** Endurance of battery, in hours; **SMCr:** Skeleton price, in megacredits; **AMCr:** Armor price, in megacredits; **BMCr:** Battery price, in megacredits; **OSMCr:** Other systems price, in megacredits; **TMCr:** Total price, in megacredits.



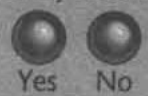
RCES Heavy Battle Dress



9+3	9+6	9+9
8+3	8+6	8+9
7+3	7+6	7+9
6+3	6+6	6+9
5+3	5+6	5+9
4+3	4+6	4+9
3+3	3+6	3+9
2+3	2+6	2+9
1+3	1+6	1+9
0+3	0+6	0+9
«	•	»

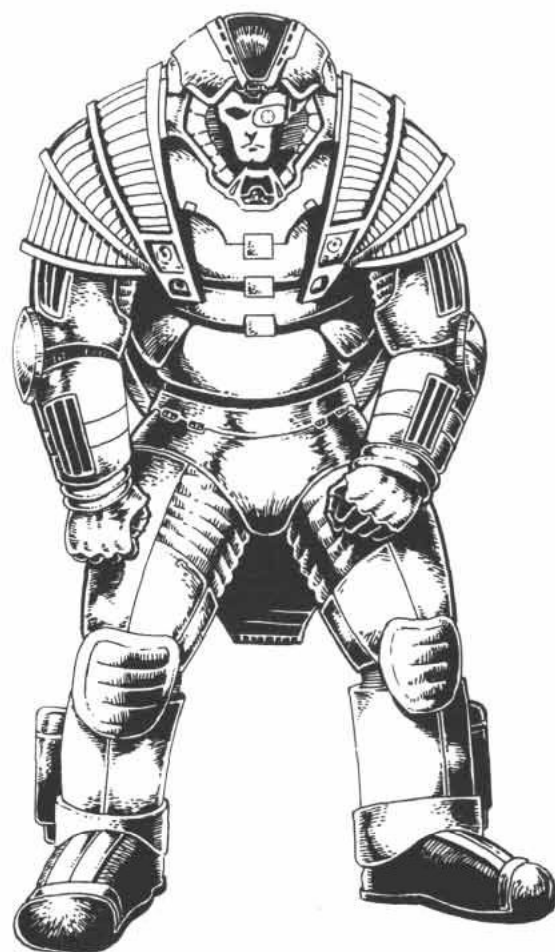


Security Clearance



28 IX-1201

Date



Reformation Coalition TL-12 Heavy Battle Dress

The Coalition's heavy battle dress is used by its first-line military forces, and also on raids where significant military opposition is expected. Heavy battle dress doubles the effective strength of its wearer, and includes environmental control, atmospheric filters, and respirators (allowing the wearer to function in tainted and thin atmospheres), Chameleon IR suppression systems, a wide-spectrum visual helmet sensor suite, and an in-helmet radio of at least 3-km short range.

There are three primary variants of the suit: the standard Trooper Suit, the Leader's Suit, used by section, platoon, and higher leaders, and the Scout Suit, used by a limited number of personnel per unit for longer-range surveillance.

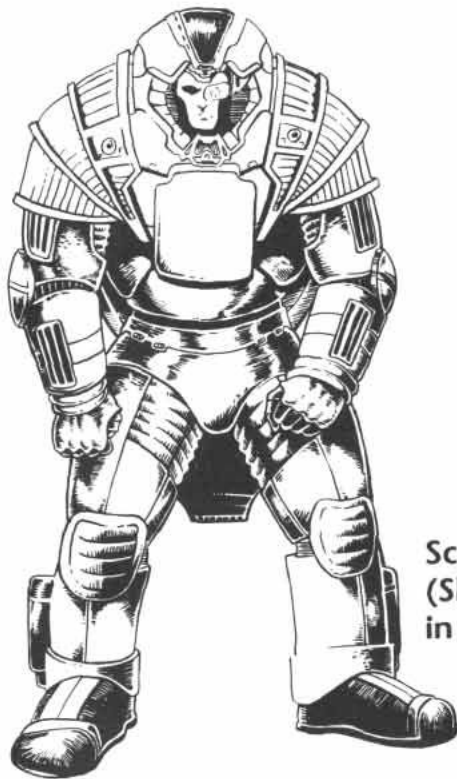
All suits feature an integral arm-mounted laser designator, used to mark targets for the Lyrebird missiles carried in standard drop capsules (see page 107). The laser designator has a range of 6 km, and due to its high power requirements, has power sufficient for only six minutes of constant use.

The Leader's suit has less armor protection to allow it to carry a 30-km (short range) radio in place of the 3-km trooper's radio, and the Scout Suit is fitted with a passive EMS array in the chest, with a short range of 3 km. Due to the bulk of this system, the Scout Suit also has reduced armor protection, and only a 3-km (short range) radio. It also only has batteries sufficient for nine hours continuous use of its sensors.

All of these suits may be recharged by a standard starship fusion power plant. This process takes one hour, and requires that 0.1 MW of power be allocated per suit for the duration of the recharge.

All of these suits may be fitted with a self-contained oxygen supply lasting 20 hours, which adds .01 tonnes to the mass and MCr0.002 to the cost of the suit. With the oxygen supply fitted, the suits are overloaded, which increases the Agility and Initiative penalties to -4 and -3 respectively, and reduces movement rates by 10%. When being used in a meteoric assault in a drop capsule, the heavy battle dress suit is fitted with a one-hour air supply sufficient to allow the trooper to reach the ground, and having negligible mass and price (0.5 kg, Cr100).

Because of their distinctive appearance, these suits are often referred to by Coalition Marines as "Sumo Samurai Suits," or "Samurai Beetles."



Scout Suit
(Showing passive sensor array
in center of torso armor)

Standard Trooper Suit

Mass: 0.4197 tonnes (419.7 kg)

Price: MCr0.22315 (Cr223,150)

Agility Penalty: -3

Initiative Penalty: -2

Armor Value: 15

Endurance: 10 hours continuous use for all systems, except laser designator; only 6 minutes continuous use

Features: Wide-spectrum visual helmet sensor suite (treat as WSV goggles, short range = 400 meters), Chameleon IR suppression, 3-km (short range) radio, TL-10 Inertial Navigator (TNE, page 346), laser designator (6-km range) with batteries for 6 minutes of continuous use.

Leader Suit

Mass: 0.4147 tonnes (414.7 kg)

Price: MCr0.225645 (Cr225,645)

Agility Penalty: -3

Initiative Penalty: -2

Armor Value: 13

Endurance: 10 hours continuous use for all systems, except laser designator; only 6 minutes continuous use

Features: Wide-spectrum visual helmet sensor suite (treat as WSV goggles, short range = 400 meters), Chameleon IR suppression, 30-km (short range) radio, TL-10 Inertial Navigator (TNE, page 346), psionic shield helmet, laser designator (6-km range) with batteries for 6 minutes of continuous use.

Scout Suit

Mass: 0.42 tonnes (420 kg)

Price: MCr0.240853 (Cr240,853)

Agility Penalty: -3

Initiative Penalty: -2

Armor Value: 12

Endurance: 10 hours continuous use for all systems, except passive EMS sensor; only 9 hours continuous use, and laser designator, only 6 minutes.

Features: Wide-spectrum visual helmet sensor suite (treat as WSV goggles, short range = 400 meters), Chameleon IR suppression, 3-km (short range) radio, TL-10 Inertial Navigator (TNE, page 346), 3-km (short range) passive EMS sensor with batteries for nine hours of continuous use, laser designator (6-km range) with batteries for 6 minutes of continuous use.

Light BRT (a.k.a. "Baby Brute")

The BRT (body reaction tool) is a cargo handling machine derived from the heavy battle dress frame, specially reinforced. The brute may lift and carry loads of up to 2064 kg (2.064 tonnes). This is its absolute capacity, and may not be exceeded. The operator suffers no load-carrying penalties beyond those listed for simply using the suit. Operating a brute is considered easy work for the purposes of fatigue.

Mass: 0.268 tonnes (268 kg)

Price: MCr0.20017 (Cr200,170)

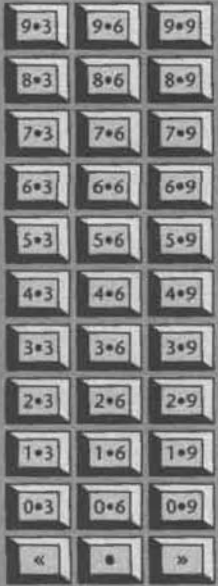
Agility Penalty: -4

Initiative Penalty: -3

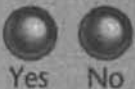
Endurance: 8 hours continuous use (0.0153MW rechargeable battery).



Schalli Personal Transportation

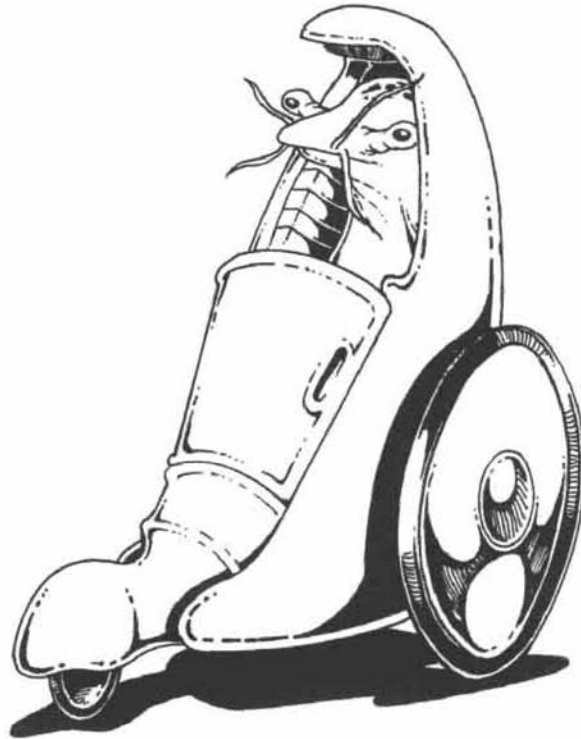


Security Clearance



28 IX-1201

Date



Schalli Roller

The Schalli roller is essentially a large electric wheelchair intended to let these aquatic beings get around in a terrestrial environment. They are built at the lowest practical technology level in order to make them readily available, as well as to eventually allow their construction on Schall, should the Schalli so desire. They are also designed to be inexpensive, to make them affordable to as many Schalli as possible, and are therefore designed for use on flat surfaces. Hence their cross-country performance is deplorable. Schalli who seek better rough terrain performance use either contra-grav platforms or walkers, based on the Schalli battle dress skeleton detailed on the facing page. However, both of these options are much more expensive.

The "bucket" in which the Schalli sits is partially filled with water. This provides some buoyancy for the Schalli's comfort, and also keeps his or her skin from drying out. There is a low-power mister which draws water from the bucket and sprays the Schalli's head. In hot and dry conditions, this requires the water in the bucket to be replenished periodically.

The housing at the Schalli's chest level folds down as a work table, where the Schalli can use his or her four arms to manipulate equipment.

The cargo space listed below allows additional equipment to be installed on the roller, and 0.0075 MW are set aside to power this equipment.

The roller must be recharged every 24 hours, usually while the Schalli sleeps, and the roller is equipped with power cables which allow this to be done at standard RC electrical outlets.

Tech Level: 7
Price: Cr2300
Size: 5.6 kiloliters displacement = 0.4 tons (SM)
Mass: 4.59 tonnes empty, 5.48 tonnes loaded
Power: 0.0175 MW TL-7 battery, duration 24 hours (0.0075 MW excess power)

Maint: 1
Controls: Basic mechanical
Life Support: Light, heat, water spray
Cargo: 0.49 tonnes
Crew: 1
Passengers: None

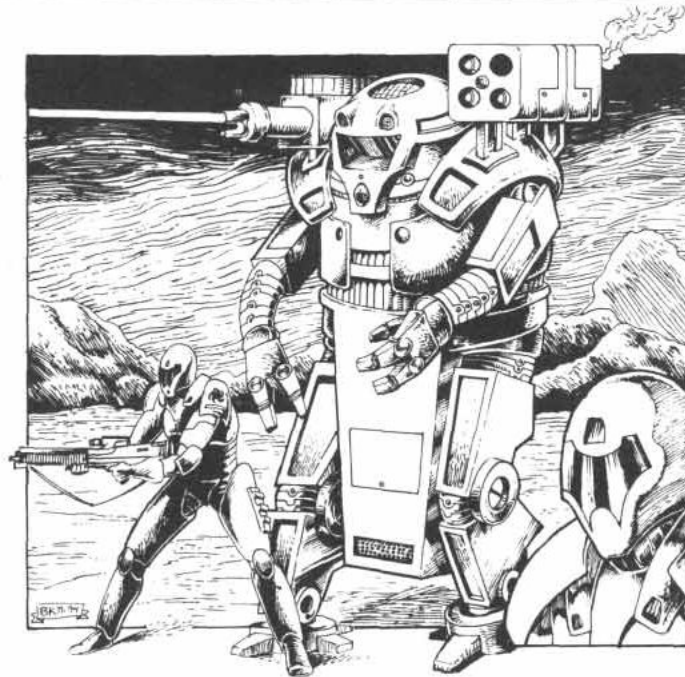
Maximum Speed: 36.56 kph
Travel Move: 65/10
Combat Move: 15/2
Fuel Capacity: TL-7 battery with duration of 24 hours at 0.0175 MW output

Combat Statistics
Config: Open vehicle
Susp: W (1) **HF:** [1]
 HS: [1]
 HR: [1]
Deck: Open **Belly:** 1

Reformation Coalition Equipment Guide

Power

ON/OFF



Schalli Battle Dress

Because of their physical structures, Schalli need some form of mechanical assistance to get around on land. Although there are no Schalli infantry units, some RC leg units (or powered leg units) do have Schalli members, and it is for these rare Schalli troops that the Schalli battle dress is manufactured.

Schalli battle dress is massive and even somewhat frightening when viewed on the battlefield. It also makes rather a large target. Unlike standard human battle dress which has no integral weapons, Schalli battle dress is equipped with integral heavy weapons to allow it to defend itself. The mass below is overloaded by 10%, but still allows 0.016 tonnes (16 kg) for additional mission equipments.

The Schalli operator rides in a water-filled "bucket," the lower portion of which hangs down well below the hip joints. He or she controls the battle dress with its four arms: The upper two control the battle dress arms, and the lower two control the battle dress legs. The Schalli uses its whiskers to operate sensors and fire control systems.

The Schalli battle dress skeleton has a skeletal mass of 0.4 tonnes, a maximum mass of 0.84 tonnes, a storage volume of 240 liters, costs MCr0.4, and imposes Agility -3 and Initiative -2 penalties. When stripped down to its basic components, including armor and batteries only, its breakdown is shown below.

SM	AV	AM	BV	BM	TM	MW	End	SMCr	AMCr	BMCr	TMCr
0.4	12	.162	.0784	.1568	.7188	.01176	10	.40	.01539	.000392	.415782

Schalli battle dress is manufactured in only limited quantities, due to both its expense and the current low demand for Schalli combat troops.

Mass: 0.908 tonnes (908 kg)

Price: MCr0.483 (Cr483,000)

Agility Penalty: -4

Initiative Penalty: -3

Armor Value: 12

Endurance: 10 hours continuous use for all systems, except laser designator; only 6 minutes continuous use

Features: Wide-spectrum visual helmet sensor suite (treat as WSV goggles, short range=400 meters), Chameleon IR suppression, 3-km (short range) radio, TL-10 Inertial Navigator (TNE, page 346), laser designator (6-km range) with batteries for six minutes of continuous use, Squad Support Laser (see page 96) with 50 rounds, 4 Nail tactical missiles in quadruple package launcher (see page 106).

Consumables Price: Price above includes Squad Support Laser but does not include ammo or disposable missile launcher.

Loaded 50-round magazine for Squad Support Laser: Cr1496

4-round disposable package launcher for Nail tactical missiles: Cr2832 for HEAP, Cr2664 for HE, Cr3000 for WP, Cr6664 for Nail SAM, Cr12,664 for Nail ARM.

When Nail SAM or ARM are fitted, add Cr500 to cost of the battle dress, and reduce reserved mass to 15.5 kg to allow for the homing missile launch controller.



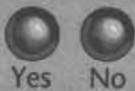
Communications Devices



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
«	•	»



Security Clearance



28 IX-1201

Date



TL 9
3000 KM
Communicator

COMMUNICATIONS DEVICES

Good communications are vitally important to any operation, military or civilian. The equipment described on these pages represents the most common types in Coalition service. Since the Coalition is not capable of manufacturing at higher than TL-12, any advanced tech level communicators are relic technology, and thus quite rare. Such equipment is usually encountered only on very important missions.

Classes: There are three classes of communicators: Uplink, Strategic, and Tactical.

Uplinks have a short range of 3000 km, and are used for communication with spaceships and other objects in geo-synchronous orbit such as permanent space stations, ComSats, NavSats, and so on.

Strategic communicators are used by landing parties to communicate with starships in standard orbits, and by large military units on the ground to communicate with each other. These units have a 300-km short range.

Tactical communicators have short ranges of 30 km or less. These sets are the most useful for communications between ground units and between ground units and aircraft or spacecraft operating in the atmosphere.

Duration: The durations listed below are based on the batteries contained in the units, although all come with power cables which allow them to be hooked into external or vehicle power supplies for longer duration.

Batteries: All communicators come with internal battery packs, and these are also available as separate items, to extend a communicator's operating time. Duration is listed for constant transmitting or constant receiving (transmitting consumes power at 10 times the rate of simply receiving). Alternatively, use the receiving only duration, but each minute of transmission counts as 10 minutes of listed duration.

Communications Uplinks

The TL-15 3000-km maser and TL-12 and TL-15 3000-km laser uplinks are available in backpack form (the TL-15 versions, obviously, are relic technology and rather scarce). All uplinks are also available in stand-alone versions.

Communications Uplinks

Item	Mass(kg)	Volume (liters)	Price (Cr)	Duration (hrs*)	Antenna Diameter (m)
3000-km Radio Uplink TL-10	270	135	5380	1/10	1.1
Replacement Battery	250	125	380	+1/+10	—
3000-km Radio Uplink TL-12	135	68	5335	1/10	1.1
Replacement Battery	133	67	335	+1/+10	—
3000-km Radio Uplink TL-15	83.2	33.1	5500	1/10	1.1
Replacement Battery	83	33	500	+1/+10	—
3000-km Laser Uplink TL-10	130	65	21,150	1/10	1.1
Replacement Battery	100	50	150	+1/+10	—
3000-km Laser Uplink TL-12	73	37	21,135	1/10	1.1
Replacement Battery	53	27	135	+1/+10	—
3000-km Laser Uplink TL-15	39	16	21,200	1/10	1.1
Replacement Battery	33	13	200	+1/+10	—
3000-km Maser Uplink TL-10	260	130	21,300	1/10	1.1
Replacement Battery	200	100	300	+1/+10	—
3000-km Maser Uplink TL-12	147	73	21,270	1/10	1.1
Replacement Battery	107	53	270	+1/+10	—
3000-km Maser Uplink TL-15	78.7	32.7	21,400	1/10	1.1
Replacement Battery	66.7	26.7	400	+1/+10	—

* Time transmitting only/time receiving only.

Reformation Coalition Equipment Guide

Power 

ON/OFF 

Strategic Communicators

Item	Mass(kg)	Volume (liters)	Price (Cr)	Duration (hrs*)	Antenna Diameter (m)
300-km Radio, TL-10	29.8	14.9	542	2/20	1.1
Replacement Battery	27.8	13.9	42	+2/+20	—
300-km Radio, TL-12	15	7.5	537	2/20	1.1
Replacement Battery	14.8	7.4	37	+2/+20	—
300-km Radio, TL-15	9.5	3.8	556	2/20	1.1
Replacement Battery	9.3	3.7	56	+2/+20	—
300-km Laser, TL-10	66	33	11,075	2/20	1.1
Replacement Battery	50	25	75	+2/+20	—
300-km Laser, TL-12	36.7	18.3	11,070	2/20	1.1
Replacement Battery	26.7	13.3	70	+2/+20	—
300-km Laser, TL-15	20.7	8.7	11,100	2/20	1.1
Replacement Battery	16.7	6.7	100	+2/+20	—
300-km Maser, TL-10	61	30.5	11,050	0.5/5	1.1
Replacement Battery	31	15.5	50	+0.5/+5	—
300-km Maser, TL-12	36.6	18.3	11,040	0.5/5	1.1
Replacement Battery	16.6	8.3	40	+0.5/+5	—
300-km Maser, TL-15	18.3	8	11,060	0.5/5	1.1
Replacement Battery	10.3	4	60	+0.5/+5	—

* Time transmitting only/time receiving only.

300-km Tight-Beam Radio Orbital Relay Communicator

This radio is only a fraction of the mass of a maser communicator of similar performance and duration, thus its popularity. The tight-beam radio also includes a 3-km (short range) repeater in it which allows personnel with their own radios to route their transmissions up to orbit via the uplink, and receive replies in the same way. This uplink comes in stand-alone or backpack configurations.

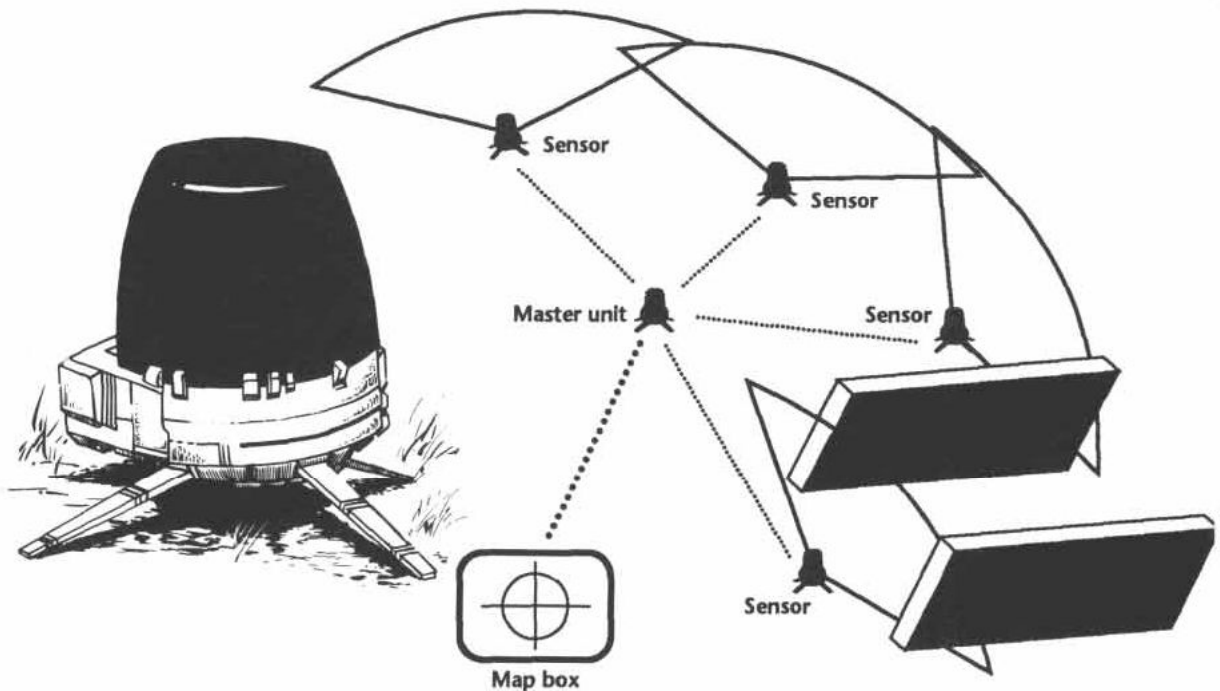
Item	Mass(kg)	Volume (liters)	Price (Cr)	Duration (hrs)	Antenna Diameter (m)
300-km Radio Uplink w/3-km repeater	19.6	9.8	1125	4	0.36
Spare Battery	19.3	9.6	50	+4	—

Tactical Communicators

Laser and maser communicators of less than 30-km short range are not commonly needed, and thus only 30-km radios are shown.

Item	Mass(kg)	Volume (liters)	Price (Cr)	Duration (hrs*)	Antenna Diameter (m)
30-km Radio, TL-10	25.2	12.6	287.5	10/100	0.1
Replacement Battery	25	12.5	37.5	+10/+100	—
30-km Radio, TL-12	13.5	6.8	283.5	10/100	0.1
Replacement Battery	13.3	6.7	33.5	+10/+100	—
30-km Radio, TL-15	8.5	3.4	300	10/100	0.1
Replacement Battery	8.3	3.3	50	+10/+100	—

Remotely Operated Sensors



TL-12 Automated Sensors

These are passive sensors which carry their own power supply and transmit their data to remote locations with integral tight-beam radios. These sensors can be used one at a time in a stand-alone configuration, or linked into a network of several remote units and one master unit. Each sensor unit has a 3-km (short range) passive EMS sensor and a tight-beam radio with a short range of 3 km, so must be placed within 3 km of either the personnel who will be monitoring it, or a master unit. Master units collate the data from the subsidiary sensors into a single integrated display. Master units have radios with 30-km short ranges, and they may be "daisy chained" together serially to allow sensor barriers to be set up at a great distance from friendly units.

The person monitoring these sensors must have either a helmet sensor suite, a map box, or a computer on which to display the data. The master unit is equipped with its own map box, allowing personnel to monitor the sensor perimeter from the master unit itself. Military commanders who are linked into an automated sensor network which is controlled by a master unit add 1 to their Ground Tactics assets.

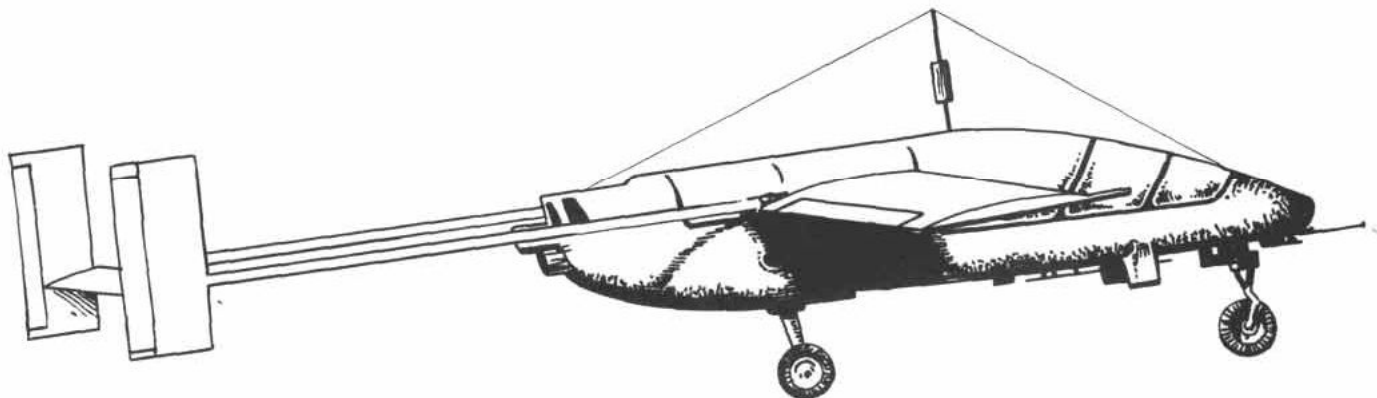
Depending upon circumstances, these sensors are recovered at the end of a mission or considered expendable.

The same sensor unit is used in the stand-alone or networked role.

The replacement batteries shown on the table below normally fit one each within the sensor or master unit. However, multiple batteries may be hooked up to a single unit which will allow the unit to use their duration sequentially. This allows these sensors to be left unattended for longer periods of time. The cost of the wiring required for this is subsumed in that of the unit itself.

The table also shows the power requirement of these units in megawatts for characters who wish to attach these units directly into a power plant.

Item	Sensor	Radio	Duration	Volume	Mass	Price	MW	TL
Sensor Unit	3-km PEMS	3 km	3 hours	11.5 liters	22.8 kg	Cr21,400	0.0011	12
replacement battery	—	—	+3 hours	1 liter	2 kg	Cr5	—	12
Master Unit	—	30 km	10 hours	8 liters	15 kg	Cr4035	0.001	12
replacement battery	—	—	+10 hours	6.7 liters	13.4 kg	Cr 35	—	12
replacement battery	—	—	+3.75 hours	1 liter	2 kg	Cr5	—	12



Remotely Piloted Reconnaissance Vehicle

The Coalition uses a variety of remotely piloted vehicles (RPVs) for reconnaissance operations, particularly in high-threat environments. The example shown here is essentially a very large model airplane bearing wide-spectrum visual-imaging equipment. (This includes low light, thermal, and standard video.) It is operated via frequency-agile radio link, 30-km short range, to a hand-held controller which includes a small video screen. The RPV's video feed can also be split off to a larger size display for ease of viewing or recorded for playback. The RPV is equipped with a simple autopilot capable of performing such basic tasks as orbiting a fixed point, flying a particular pattern, and the like. Lastly, its engine can be shut off and subsequently restarted in-flight when stealth is called for.

The RPV requires a flat, open area for take-offs and landings, for example a road, or level field. The RPV may be optionally fitted with a rocket-assisted take-off (RATO) motor which provides the RPV with zero-length launch performance (ZLL; take-off roll is actually 1 meter, usually made from a short ramp). Each RATO motor is good for only one launch, and weighs 115 kg and costs Cr230. RCV Operations skill is required to fly the RPV.

Note that the RPV's components are manufactured at a wide variety of tech levels, allowing subcomponents to be produced on many RC worlds. Its airframe and engine are manufactured at TL-5, its flight controls at TL-8, its sensors at TL-10, and only its batteries at TL-12.

The RPV is listed in two configurations: its basic configuration of 246.5 kg, and its maximum payload configuration of 315 kg. The RPV in its basic configuration has space set aside in its fuselage for 68.5 kg worth of additional surveillance equipment, flares, decoys, etc., which allow it to reach its maximum payload.

Tech Level: 12 (maximum component)

Price: Cr28,765

Size: 21 cubic meters, VS target (storage volume 10.5 cubic meters)

Mass: 246.5 kg basic fueled mass, 315 kg maximum fueled take-off mass

Power: 0.02 MW improved internal combustion engine with propellor generating 0.01 tonnes thrust, plus TL-12 batteries providing 0.035 MW electrical power for 4 hours (0.00825 MW excess power)

Maint: 1

Controls: Enhanced electronic controls with RCV modifications, TL-10 flight computer

Commo: 2x30-km (short range) radios

Sensors: Wide-spectrum visual viewer, video camera/signal converter

Life Support: None

Cargo: 68.5 kg additional mission equipment

Crew: None (1 remote operator)

Maximum Speed: 128 kph in basic configuration, 100 kph at maximum mass

Cruising Speed: 96 kph in basic configuration, 75 kph at maximum mass

Operational Radius: 192 km in basic configuration, 150 km at maximum mass

Combat Move: 18 10-meter grid squares in basic configuration, 14 at maximum mass

Agility: 3

Take-Off Roll: 114 meters in basic configuration, 186 meters at maximum mass

Landing Roll: 75 meters

Fuel Capacity: 20 liters hydrocarbon distillates (Cr5 for full load of fuel)

Fuel Consumption: 5 liters per hour (endurance of 4 hours)

Vision-Enhancement Equipment

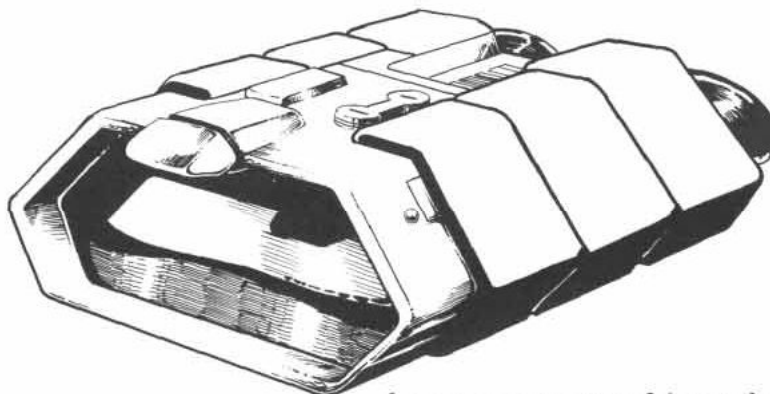


Image converter binoculars

Vision-Enhancement Equipment— Binoculars

Because of the wide distribution of these devices in pre-Collapse times and the low tech level requirements of most of these designs, they are considered as a class to be in virtually universal use, either in relic or newly manufactured forms. RC forces manufacture all of these devices, but make the greatest use of image converter and PRIS binoculars.

Almost all of these devices come in an over-the-shoulder carrying/shipping case; a sling is also provided for separate carrying. The use of these devices in the game is discussed in the basic rules, pages 309-310.

Binoculars: This device allows improved vision at greater distances than would unaided eyes. Characters equipped with binoculars and who have a good field of view have their Observation asset increased by 1. Binoculars have no effect in woods or smoke, at night, or in other than clear weather.

TL: 3

Volume: 2 liters

Weight: 1 kg

Price: Cr75

Short Range: 1000 meters

Mode: Daylight and clear weather only, no effect in woods and smoke

Binoculars, Electronic: This device provides electronic enhancement of images. Electronic binoculars feature color enhancement (which adds 1 to the user's Observation asset—see the basic rules, page 310) and range-finding capabilities in addition to the normal binocular benefits, but are useful only in daylight and clear weather.

TL: 8

Volume: 2 liters

Weight: 2 kg

Price: Cr750

Short Range: 1000 meters

Mode: Daylight and clear weather only, no effect in woods and smoke.

Binoculars, Image Converter: Many night-vision devices and electronic sights either are sensitive to infrared (heat) radiation (IR) or use light amplifiers (LA) to detect their targets. Both have minor disadvantages: IR images can be camouflaged by insulation and LA requires background light to amplify. In addition, the user can only see as far as the unaided eye.

Commercially available at tech level 10, the image converter is sensitive to both infrared and visible light, and thus picks up both heat images and visible-light pictures. The converter intensifies these images, allowing night vision, and magnifies them up to 20 times. Automatic polarizers cut in if the image is bright enough to blind. A laser rangefinder is also included to measure the precise distances to selected objects out to the maximum range of the binoculars.

The Image Converter Binoculars combine the features of Image Intensification and IR goggles (increasing the user's Observation asset by 2, but has no effect in woods or smoke—see "Mode" below and TNE, page 310), and have a short range of 250 meters in either mode.

Special hardware/software clips are available for hand computers that expand the capabilities of the image converter. When hooked up to a computer using a graphics clip, the image converter can be tied into a map box (allowing others to see what the user sees), and electronic "photographs" can be stored in the computer's memory. Another clip allows the computer to calculate the speed of a target relative to the user.

Physically, the image converter is similar to a set of binoculars. Power packs are mounted inside the converter casing and average one week of constant use.

TL: 10

Volume: 1 liter

Weight: 1.25 kg

Price: Cr3500

Short Range: 250 meters

Mode: May disregard all night Diff Mods, fully affected by weather Diff Mods. No effect in woods or smoke.



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	■	>



Security Clearance



28 IX 1201

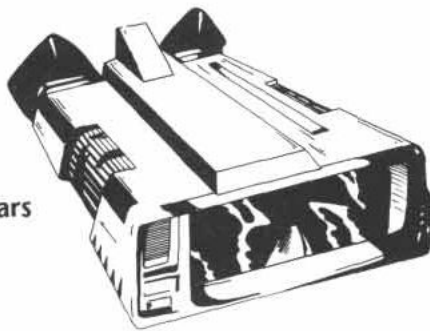
Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 

PRIS
binoculars



Binoculars, PRIS: The portable radiation imaging system (PRIS) has many more capabilities than binoculars from previous tech levels. The PRIS combines the features of the WSV viewer with color enhancement (allowing color enhancement use in clear, daylight conditions, and WSV mode at night and in bad weather).

The PRIS can be set to observe images in the spectral range from infrared to gamma rays. (The PRIS will not detect radio waves.) The front surface of the PRIS is transparent to all radiation; just behind it is a series of lenses tailored to various specific bands. In addition to this, a tight-beam laser rangefinder gives an accurate reading on the target within sight up to about 20 km, depending on conditions, with the range displayed as a digital readout in the viewfinder. The PRIS also has a built-in clock and limited memory, so the rangefinder can determine the velocity of the object being viewed by comparing its distance from the observer over time.

The unit can be calibrated to a standard self-processing gyrocompass, in which case the bearing of the direction viewed will be digitally displayed in the corner of the viewfinder. The magnification strength of the PRIS is adjustable up to 225. A built-in flywheel for gyro-stabilization ensures a steady field of view at all magnifications.

Besides its obvious uses in the field, the PRIS also finds itself used in a variety of industrial and engineering applications. Its infrared images can be color-coded to show the ambient temperatures of objects in the viewfinder. A PRIS can therefore be found near every jump drive, to be used by engineers looking for "hot spots" on the drive housing. In other areas of a ship, the PRIS can detect problems in electrical circuits, again by finding an area of higher temperature.

TL: 12

Volume: 3 liters

Weight: 2 kg

Price: Cr12,000

Short Range: 400 meters WSV mode, 1000 meters color enhancement mode (daylight, clear weather only)

Mode: WSV mode disregards night Diff Mods and up to 1 smoke Diff Mod, fully affected by weather Diff Mods. Color enhancement mode in daylight and clear weather only. Both modes no effect in woods.

Light Amplifier
goggles



Infrared
goggles

Vision-Enhancement Equipment—Goggles

This discussion does not cover simple goggles intended for eye protection, although all of these provide that in addition to their vision enhancement characteristics. The use of these devices in the game is discussed in the basic rules, pages 309-310.

Goggles, Combination IR/LA: These goggles combine light-amplification and infrared radiation detection in one unit and are worn like eyeglasses. They have the features of both IR and LA vision aids, see immediately below, and can be switched from one mode to the other by the user by means of a knob mounted in the earpiece. Most types have automatic sensitivity control in the LA mode to prevent blinding by a bright light source.

TL	Vol	Weight	Price
9	0.3 liters	0.2 kg	Cr1250

Short Range: See Infrared and LA goggles below

Mode: See Infrared and LA goggles below

Goggles, Infrared: Allow wearer to see heat-emitting sources in the dark such as animals, fires, or hot engines. The quality of vision is necessarily distorted as heat sources (not reflected light images) are being viewed. IR goggles have a short range of 100 meters. They ignore night Diff Mods, but have no effect in woods, smoke, or poor or very poor weather.

TL	Vol	Weight	Price
6	1 liter	1 kg	Cr1000
8	—	0.1 kg	Cr500

Short Range: 100 meters

Mode: Disregard all night Diff Mods, no effect in woods, smoke, or other than clear weather.

Goggles, Light Amplifier: Allow vision by amplifying ambient light and are usable in anything less than total darkness. LA goggles may allow darkness penalties in night or combat situations to be reduced or ignored. LA goggles have a short range of 100 meters, and allow users to disregard up to 2 night Diff Mods. They are fully affected by weather Diff Mods, and have no effect in woods or smoke.

The LA goggles illustrated are shown in their raised position, allowing the wearer to use his normal vision.

TL	Vol	Weight	Price
7	1 liter	1 kg	Cr1000
10	—	0.1 kg	Cr1000

Short Range: 100 meters

Mode: Disregard 2 night Diff Mods, fully affected by weather Diff Mods, no effect in woods or smoke.

Anti-Virus Equipment

VIRUS-DETECTING EQUIPMENT

Detecting Virus in electronic equipment can be very easy or very hard. Sometimes Virus announces itself and attacks, sometimes it lays in wait inside seemingly inert equipment, waiting to insinuate itself into other systems. Both scenarios are equally dangerous, and place a premium on always spotting Virus before it spots you. (See *Survival Margin*, pages 74-81, *TNE*, pages 74-81, or *Path of Tears*, pages 142-143 for a more detailed discussion of Virus.)

In many cases, Virus detection can be conducted at a keyboard and consists of running a series of diagnostics on the system. Detecting Virus by this means is an uncertain, Difficult task using the Computer asset. The difficulty level can be increased or decreased a level by the sophistication of the processor being examined. A global data network, for example, would be one or more levels more difficult (since the Virus is "smarter"), while a low-tech starship computer (say TL-12) may be one level easier.

There are also numerous pieces of equipment intended to assist in the detection of Virus, or, in the end, simply to wipe it from the face of the operating system.

Electronics Diagnostic Kit

The electronics diagnostic kit is a simple set of electronic tools used for the manual (i.e., off-line) examination of electronic data systems. It includes voltage meters, circuit testers, high-power microscopes to examine circuitry, etc. These kits are used when examining cold circuits for evidence of virus eggs. Such an examination is an uncertain, Difficult task using the Electronics asset, or a Formidable one using Computer, but in either case requires the character to have an electronics diagnostic kit. Every two tech levels of difference between the diagnostic kit and the circuitry being examined moves the task difficulty level up or down one level.

Only kits of TL-12 or below are available in the Coalition; higher tech kits are available from the Hivers (up to TL-14) or as relics.

TL	Mass	Volume	Cr
8-9	5 kg	10 liters	2000
10-11	7 kg	15 liters	4000
12-13	6 kg	12 liters	8000
14+	4 kg	8 liters	10,000

Canaries

Canaries are the classic means of detecting Virus. The first canaries were improvised from whatever computers or peripheral systems happened to be available, and the concept was happened upon rather accidentally, innumerable hundreds or thousands of times in innumerable locations by innumerable persons, most of whom died making the discovery. However, current versions are specially designed to accomplish their missions. The original canaries were so named because they proved the existence of Virus by "dying," i.e., self-destructing when they became infected by the early "suicider" strains of Virus. Current canaries usually do not die upon infection, as the currently common strains of Virus seek to control new systems to propagate themselves, not to destroy them.

Canaries are high-speed data-processing systems which mimic the sort of systems that Virus likes to occupy, and which also speed up the development of a low-power virus (e.g., an egg which has just hatched, or a virus which has been stunted by inhabiting a slow or low-capacity computer) to levels where it is readily detectable. Canaries detect Virus within them by watching for the distinctive electrical patterns of Virus consciousness entering their systems. In many cases, canaries contain simulated connections to sensor or weapons controls, items which Virus always attempts to control. However, when Virus attempts to gain access into these systems, it finds that they have apparently had some kind of access control mechanism installed. At this point, Virus attempts to force the barrier, either by "hacking" its way through the phony security program, or by burning its way around the blocked circuitry. Either way, these attempts are sufficient to trip the canary's detection systems. Once this is detected, the canary sounds an alarm to notify its owners that Virus is present. This alarm is usually an audible one, though many crews like to rig up a small mechanical arm to the alarm so that Virus actually waves at them to say hello once it has been discovered.

There are two main categories of canary: warning canaries and exploratory canaries.

Warning canaries, also called defensive canaries, are those which are installed as part of the computer system aboard a starship or vehicle. Their function is to warn the crew when a portion of the ship's computer system has become infected, so that the crew might shut the system down, abandon ship, etc. These canaries were quite common in the first few decades following the Collapse, but now that there are improved antiviral countermeasures, these have become less prevalent.

Exploratory, or offensive, canaries are portable canaries which are taken to newly discovered, suspect computers. (Note: All computers are suspect.) These are hooked into the suspect data system and are watched to see if they become infected. This process can sometimes take hours or days, or may not work at all: Many of the strains of Virus that have survived into 1201 have learned to be wary of canaries, and do not betray themselves to these systems.

Finally, exploratory canaries are divided into two types: passive canaries and active canaries. A passive canary is one which is hooked into a functioning data system to see if an active virus will expand into it. Passive canaries need no power source of their own, as this power is provided by the system to which it is connected.

Active canaries have their own power sources and are used to examine cold systems such as powered-down computers and systems that are suspected of containing Virus eggs. The canary hooks into and powers up these cold systems and waits to see if dormant virus in these systems will attempt to take it over.



Security Clearance




28-IX-1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 

Canaries are not reusable. Once they have been infected, their internal workings are suspect and cannot be trusted to handle any further examinations. They are not discarded, however; they are returned to RCES authorities where they are studied, and in some cases broken down to have their components recycled into new canaries.

Note that, when hiring free-lancers, RCES will almost always provide one or more canaries to the free-lance crew at no cost. This is to ensure that the mission is not jeopardized by the use of substandard, used, or defective canaries. Although canaries are expensive, they are cheaper than failed missions, or the risk of the mission returning infected and spreading Virus into Coalition data systems.

On the table on the facing page, base difficulty level is based on the canary's absolute computing capacity compared to "average" host data systems. This level is modified up one level for every two tech levels by which the infected system exceeds the canary, or down one level for every two tech levels by which the canary exceeds the infected system. Difficulty should be further modified for unusually "smart" or "stupid" viruses, at the referee's discretion. Virus-detection attempts with canaries are rolled against the canary's listed asset, and do not use the Computer or Electronics assets of the characters. These rolls are uncertain tasks.

Note that any virus, at the referee's discretion, may be immune to detection by canary, regardless of the success of any task roll.

Type	TL	Difficulty	Asset	MW	Mass	Volume	MCr
Warning Canary	10	Average	8	3	120 kg	300 liters	0.5
Passive Exploratory Canary	10	Difficult	8	—	50 kg	50 liters	0.05
Active Exploratory Canary	10	Difficult	8	0.3	50 kg	50 liters	0.08
Warning Canary	12	Average	10	4	160 kg	400 liters	1.5
Passive Exploratory Canary	12	Difficult	10	—	30 kg	30 liters	0.15
Active Exploratory Canary	12	Difficult	10	0.4	30 kg	30 liters	0.3
Warning Canary	14	Average	12	5	160 kg	400 liters	2.5
Passive Exploratory Canary	14	Difficult	12	—	20 kg	20 liters	0.25
Active Exploratory Canary	14	Difficult	12	0.5	20 kg	20 liters	0.5

MW indicates power requirement. Canary may be hooked up to a vehicle or starship power plant, or to a battery designed using the battery tables in TNE, Brilliant Lances, or Fire, Fusion, & Steel. 1 kg = 0.001 tonnes, 1 liter = 0.001 cubic meters

Virus Capsule

A virus capsule is a device which captures a fully active, fully aware virus for further study. There are no standard virus capsules; each one is purpose-built to capture a virus which has already been studied.

A virus capsule is a virtual reality simulator for a virus. The capsule appears to the virus inside of it to be the operating system of a starship, and even gives false feedback to the virus occupying it to convince it that it was in a ship that had just taken off, or which had just fired its lasers, etc. Obviously this is a very sophisticated device, and can only be fashioned when there is a great deal of information about the virus which will occupy it. For example, a virus with closed-circuit TV monitors will not be fooled that it is hooked into a starship when it sees that a simple box has been hooked up to one of its data ports. On the other hand, a virus which inhabits a system with no external viewing system against which to check incoming electronic data will be easier to fool. Note that sometimes the capsule will catch the consciousness of the virus itself, while other times it will only catch a copy, depending upon the mode of operation of that virus.

The construction of a virus capsule usually requires one or more computers of the type that the virus will be tempted into invading, plus parts from the peripheral systems that the capsule is intended to simulate.

As a rule of thumb, a capsule costs the same as the system hosting the virus that is to be captured, and allows a Difficult test of Computer to capture at least a copy of the virus. Each doubling or halving of this price decreases or increases the task difficulty by one level.

Lightning Bolt

A lightning bolt is a reusable device that is intended to send a massive power surge through a data network suspected (or proven) to contain Virus. This is a device of last resort, because it does irreparable damage to all electronic systems that are wired into the data system.

A lightning bolt is typically used to eradicate Virus from a system that presents a clear danger to friendly forces that outweighs any hopes of recovering or reconditioning the system. When an infected system is identified as fulfilling these criteria, a lightning bolt is more effective than simply shooting holes in the computer, as the electrical pulses follow the infected circuitry, burning them out as they go.

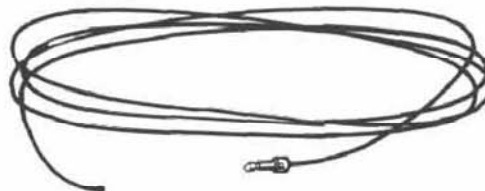
A lightning bolt will not always be effective, as a sophisticated virus will have set up fire breaks and other protective mechanisms within its system. Using a lightning bolt to kill Virus is a Difficult test of Computer or Electronics. As a rule of thumb, the task should become one level easier or harder for each tech level by which the lightning bolt exceeds or is exceeded by the host computer, respectively. In addition, greater or lesser levels of sophistication of the host computer will also make the task harder or simpler. For example, a virus inhabiting an automated parking ticket machine would be much easier to kill than one inhabiting an expert aerospace traffic control data network.

TL	Mass (tonnes)	Volume (m ³)	Cr
8	1.75	1.325	7450
9	1.3	1.1	6400
10	1.02	1.05	5600
11	0.82	1.04	5640
12	0.71	1.08	6035

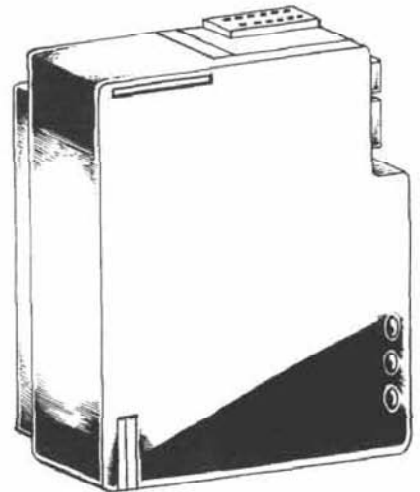
Covert Operations Equipment



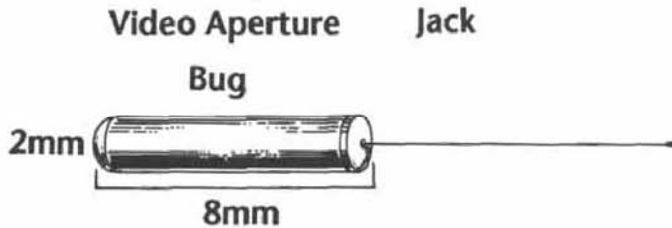
Laser Microphone



Improved Bug



Bug Monitor/Booster
Actual Size



Video Aperture
Bug

Jack

2mm

8mm

Covert Operations Equipment

This equipment is distributed only to RCES covert operatives and is not easy for free-lancers to come by.

Bug: This device is a very small, sound-activated remote microphone used to monitor conversations without the participants being aware of it. The technical details vary, but the most common variety used by RCES covert operatives is a cylinder 2mm in diameter and 8mm long, with a 1.5mm-long "whisker" antenna. Bugs are planted using a small dispenser (designed to hold 24) which sticks the bug in place with a powerful adhesive, activating it at the same time. Broadcast range is small, and bugs are usually used in conjunction with another device that receives their signal (see the monitor/booster on the facing page). Duration is limited (1D6+4 hours), and the bug will pick up normal conversation at a range of 2-3 meters.

Simple bugs such as these are relatively easy to locate with the proper instruments, since they broadcast constantly (finding one is Average versus Electronics with an electronics tool kit, Difficult otherwise). A careful search without electronics expertise can locate them if they are not well concealed (a matter for referee's judgment). Their chief advantage is that the dispenser is easy to conceal in the hand, and a bug can be planted very rapidly (in one 5-second turn).

The quantity and nature of any information gathered is up to the referee.

TL: 8

Mass: Negligible

Range: 6 meters (short range)

Price: Cr240 (dispenser and 24 bugs)

Security Clearance



28-IX-1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 

Improved Bug: This device is an improvement in bugging technology. A 0.1mm-diameter filament is run from the room to be bugged to the main unit (which can be a more powerful radio or the monitor/booster described below) up to 10 meters away. The filament cable can be threaded through ventilator shafts, conduits, pipes, and can even be concealed in a thick coating of paint. Only the end of the cable needs to be in the room being bugged, and this end picks up normal conversations within 2-3 meters. This type of bug is more difficult to detect because it is a closed-circuit system, and never broadcasts (finding one is Difficult versus Electronics with an electronics tool kit, Formidable otherwise).

The quantity and nature of any information gathered is up to the referee.

At TL-10, the audio cable is replaced with a fiber-optic cable of the same dimensions capable of picking up light as well as sound. Resolution depends on the light available, and can be subjected to computer enhancement under some conditions.

TL: 8 (audio) 10 (video)

Mass: Negligible

Price: Cr100

Bug Monitor/Booster: This is a small device that receives the weak signals from a bug (either broadcast or closed circuit), amplifies them, and records them. If hooked into a building's power supply, it can operate indefinitely; otherwise it needs to be recharged or replaced every 72 hours.

The unit can be set to dispose of its recordings at regular intervals or in response to a coded signal. In either case, it compresses the data into a single, high-speed "squirt" that lasts only a few seconds. The small radio in the unit can send this signal to the limits of its range, or the unit can be hooked into a wire-based system of some kind. In some cases, it may be feasible for the operative to retrieve the unit's data personally. This unit can be linked to any communicator or data-recording device.

TL: 8

Mass: 0.1 kg

Range: 500 meters

Price: Cr500

Pen Pistol: Covert operatives often need concealed firearms, and this one can be taken as typical of them all. Small enough to be concealed in a writing implement or other similar-sized object, the weapon requires a full turn to prepare for firing or return to its safe mode, but it can be held ready to fire for as long as desired. The weapon is capable of firing all standard 5x27mm rounds, but tranq is the round of choice, as the performance of other rounds from a barrel this short is less than desirable.

The pen pistol is a single-shot weapon, but the body of the pen is long enough to accommodate a second round as a spare (this round must be individually loaded, and thus does not count as a magazine).

A pen pistol can stand up to a cursory examination, and will actually write for a short time, but a close examination will reveal it for what it is (it is heavier than a normal pen, for example). It is constructed entirely of non-metallic materials, to make it more difficult to detect.

TL: 8

Ammo: 5x27mm-8

Weapon Weight: 0.277 kg loaded, 0.273 empty

Weapon Price: Cr114 (normally available only through RCES sources)

Ammunition Price: Cr0.16 (Ball), Cr0.32 (HE, DS, Tranq), Cr0.48 (HEAP)

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5x27mm Tranq	SA	-1*	Nil	0	1i	5	—	4

*1D6-1 points of damage plus tranq effect on TNE, page 350

Spy Camera: One of the spy's most useful tools is the camera. The model issued by the RCES is 1cm thick, 2.5cm high, and 7cm wide. It stores photos electronically, and is designed to work in low light at a range of between 0.2 and 0.7 meters (it is primarily intended for documents, and thus not very good at longer distances). The camera can store about 100 color or 500 black-and-white photographs, and was designed to photograph documents as large as half a square meter with good resolution. Standard data links permit the photos to be by a cable transferred to a hand computer or other data-recording device.

TL: 8

Mass: Negligible

Price: Cr325

Laser Microphone: This device bounces a beam of laser light off a rigid object, and detects the sounds made near that object by analyzing the changes in the reflected beam. The harder the object, the more readily it conducts sound, and the closer it is to a given conversation, the better the sound quality (a glass window pane or a metal hatch are perfect, concrete or brick walls less so, and insulated walls are very poor). The target object (but not necessarily the conversation to be monitored) must be within direct line of sight.

The device is about the size of a bulk 1 pistol, and can be connected by a cable to a hand computer or other data-recording device. A pair of headphones or a data headset can also be attached to the device for real-time monitoring of conversations.

TL: 9

Mass: 0.8 kg

Range: 500 meters (short range)

Price: Cr475

Hostile Atmosphere Survival Equipment



Filter mask

HOSTILE ATMOSPHERE SURVIVAL EQUIPMENT

Not all atmospheres are breathable by humans without assistance. Some atmospheres are too thin to sustain human metabolisms, while others contain impurities or contaminants which prove fatal to humans in the short or long term. These difficulties can be addressed by the use of specialized breathing gear which allow humans to function indefinitely in these environments.

Very thin atmospheres (atmosphere codes 2 and 3) require the use of a respirator, which compresses the thin atmosphere to breathable levels.

Tainted atmospheres (atmosphere codes 2, 4, 7, and 9) require the use of filter masks to remove the contaminants from the atmosphere before it is inhaled. Simple tainted atmospheres do not require any skin protection, but the contaminant in some tainted atmospheres is so severe that it affects exposed skin, and is called an irritant atmosphere. Irritant atmospheres require the use of protective masks.

Note that atmosphere code 2 is both very thin and tainted, and requires the protection of a respirator and a filter mask.

For more discussion of atmosphere codes and their significance, see TNE, pages 180-195.

Because of their low tech level of manufacture, these items are considered to be universally in use by the Coalition, and the Wilds, both as newly manufactured devices and as relics.

Filter Mask

A filter set which allows an individual to breathe tainted atmospheres. This mask makes use of a combination of activated charcoal and other filters at the lowest tech levels, but more advanced filter materials come into use at higher tech levels of manufacture.

TL: 3

Volume: 1 liter

Weight: 0.5 kg

Price: Cr10

Respirator

Also called a compressor mask, the respirator is a small compressor which allows an individual to breathe in very thin atmospheres. The atmosphere is drawn into a small chamber and held briefly until inhaled. Exhalations are vented to the outside by means of a check valve system that maintains internal pressure. A pair of earplug/seals are provided to prevent damage to the user's eardrums while permitting normal hearing.

TL: 5

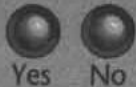
Volume: 1 liter

Weight: 0.5 kg

Price: Cr100

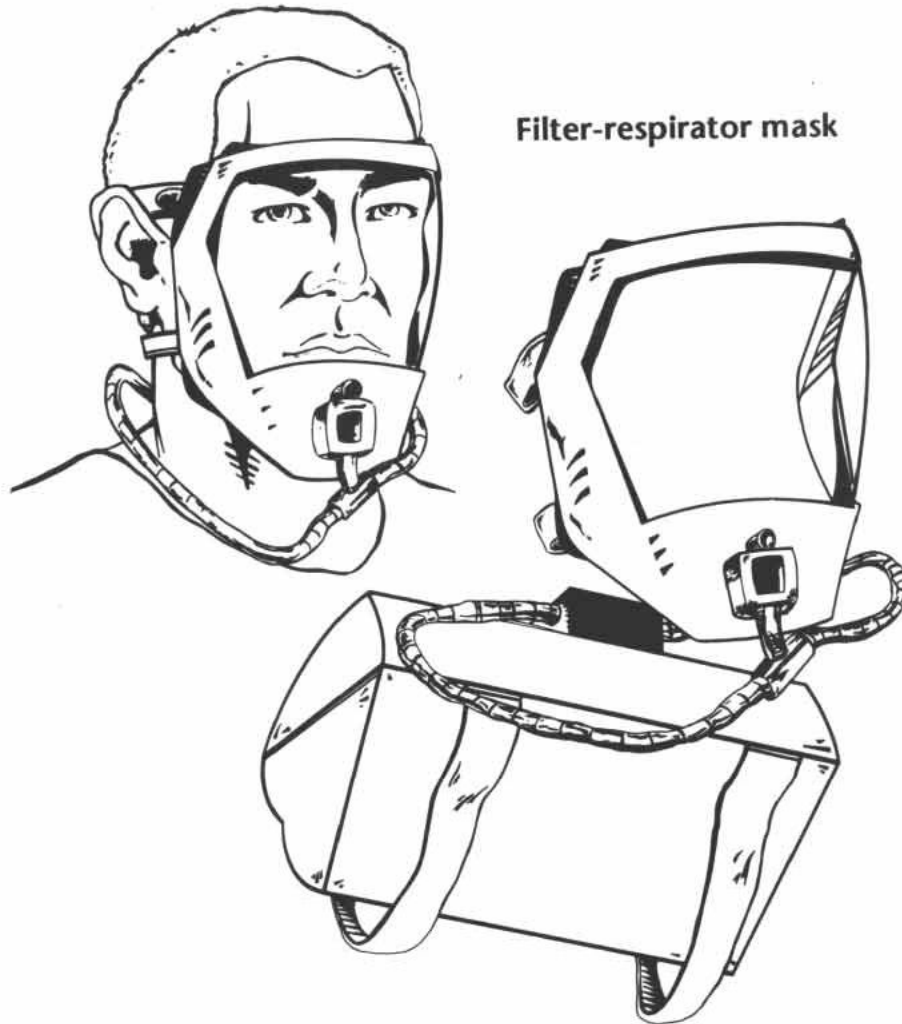


Security Clearance



28-IX-1201

Date



Filter-respirator mask

Filter Respirator Combination

A combination filter mask and respirator which allows breathing of very thin, tainted atmospheres. It shares all characteristics of both systems.

TL: 5
Volume: 1 liter
Weight: 0.5 kg
Price: Cr150

Protective Mask

For use in irritant atmospheres, the protective mask covers the wearer's mouth, nose, and eyes, and it hooks up to an oxygen supply, which makes it ideal for use in atmospheres containing trace amounts of skin irritants such as ammonia, sulfur compounds, or chlorine. This mask can be used in thin and very thin atmospheres, but not in a vacuum.

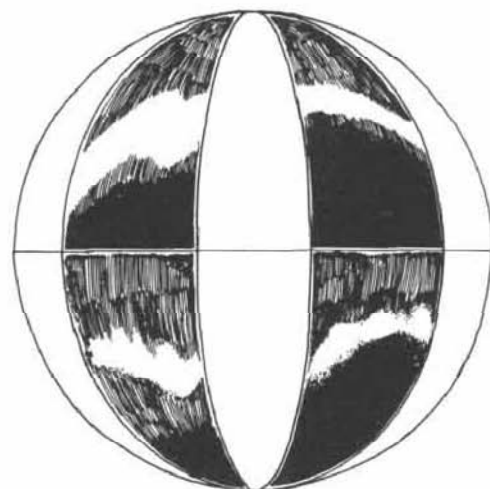
TL: 6
Volume: 1 liter
Weight: 0.5 kg
Price: Cr25

Rescue and Medical Equipment

Rescue ball



2m



Survival bubble

Rescue Equipment

Ball, Rescue: Standard on all RCES and RCN vessels and on most private ships as well. When folded, the rescue ball is a cylinder 5 cm in diameter and 10 cm long. When deployed, it forms a sphere 1 meter in diameter which contains air sufficient to last one person for two hours. In the event of explosive decompression or other loss of air, a rescue ball allows an individual not in possession of a vac suit to survive until aid arrives. The user pulls a lanyard, climbs inside, seals the zip closure, and activates the compressed air bottle which inflates the ball.

The ball is made of a metal-coated plastic film for ease of location by radar and contains a bottle of compressed air, a first-aid kit (the personal medical kit described in the basic rules on page 334), a patching kit for minor punctures, and a transparent window through which the occupant may observe conditions outside the ball. Rescue balls provide some protection from stellar radiation and corrosive and insidious atmospheres for 5 to 7 hours (longer than the ball's air supply). The ball has several loops on the outside enabling balls to be linked together, tethered to one spot, or attached to a line for towing.

TL: 7

Volume: 1 liter (storage volume), 4.2 kl (deployed)

Weight: 5 kg

Price: Cr150

Survival Bubble: A large (2-meter-diameter) plastic sphere with alternating clear and opaque panels, a small oxygen tank (capable of supporting three occupants for two hours) for inflation, a patching kit for minor punctures, and three first aid kits (the personal medical kit described in the basic rules on page 334). Access to the interior is through a conforming plastic seal which functions similarly to an air lock (although $\frac{1}{2}$ person-hour of air is lost each time this is used in a vacuum or thin atmospheres). The bubble can be used for life support in a vacuum (it can be moved by walking on the inside, treadmill fashion assuming there is gravity), and it can also be used for protection against weather or as a lifeboat on a sea surface. The bubble is fairly robust and difficult to puncture accidentally, but it has no armor value.

TL: 9

Volume: 8 liters (storage volume), 33.5 kl (deployed)

Weight: 8 kg

Price: Cr600




Security Clearance



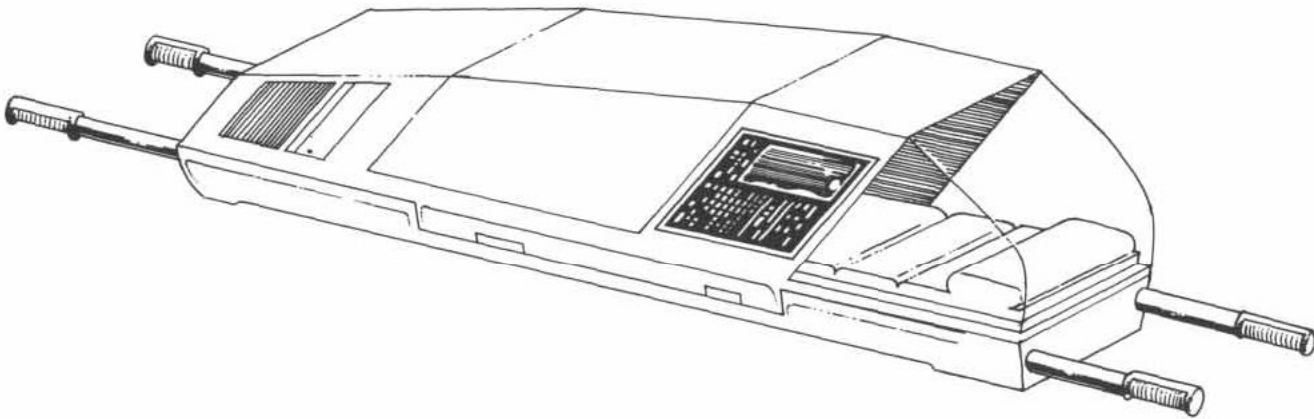
28 IX 1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Portable Automated: This is a smaller, less capable version of the standard automated. It is designed to stabilize a critically wounded patient for one hour, until he or she can be transported to better facilities. The portable automated has handles which permit it to be carried by two persons.

When placing a patient in a portable automated, the operator must place a respirator mask in place over the patient's face, attach a monitor/autoinjection sleeve in place using a self-adhesive patch, and close the lid. The automated then floods itself with a medical aerogel which stops bleeding, maintains temperature and blood pressure, disinfects, and in conjunction with drugs injected through the autoinjection sleeve, stabilizes the patient. If the patient's vital signs drop below a preset level, the device will initiate resuscitation procedures.

The portable automated provides no medical modifier; it simply prevents critically wounded characters from dying for one hour.

The portable automated pictured is usable with bipedal human-sized sentients, provided the correct recharge unit is used. Non-bipedal aliens or those larger than humans (Hivers, Schalli, etc.) require a portable automated of different construction.

TL: 12

Volume: 2 m³

Weight: 0.15 tonnes (not including patient)

Price: MCr0.05

Automated Recharge Unit: The drugs, aerogel, and other supplies in the automated are contained in a prepackaged recharge unit which is used up in treating one patient, and must be replaced before the automated can be used again. These recharge units are specific to each sentient race treated, and four separate types are available for the standard humanoid portable automated (Human, Droyne, Vargr, and Aslan). The portable automated used in RC service is copied from the old Imperial design, but Aslan and Vargr recharge units are not manufactured in the RC as these races are currently unknown in the area.

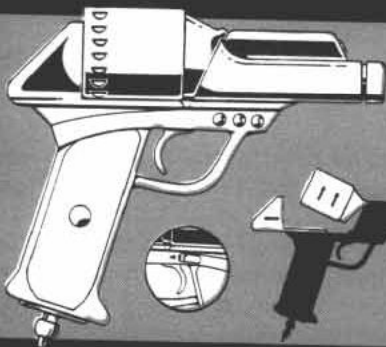
Volume: 0.1 m³

Weight: 0.015 tonnes

Price: Cr7500

W

EAPONS



WEAPONS

The weapons considered in this section consist of personnel-carried small arms, heavy infantry support weapons, personnel-carried antiarmor and anti-aircraft guided missiles, and ground-based planetary defense (surface-to-orbit) missiles. These small arms include pistols, rifles, shotguns, and submachine guns, and these weapons are based on chemical slug-firing, electromagnetic slug-firing, laser, and plasma and fusion (high-energy) technology. Heavy weapons include rapid-fire antipersonnel weapons and antiarmor weapons. These are based on these same technologies, and include grenade- and rocket-launching projectile weapons.

Data Format

The small arms entries present their information in three sections.

First is a text introduction describing the background and history of the weapon. This section will explain such details as which groups and organizations use the weapon, how the weapon functions and is typically used, and its availability.

The second section shows the physical characteristics of the weapon, usually its mass, length, and cost, plus other details such as ammunition type and muzzle energy or pulse energy, depending upon the exact nature of the weapon. This section also includes the important characteristics of the weapon's ammunition: its dimensions, price, mass, and the details of the ammunition magazines: mass, price, and capacity in rounds of ammunition.

Finally, the weapon's combat performance characteristics are shown in terms of the TNE planetary combat rules. These include rate of fire (ROF) in shots per 5-second combat turn, damage value (*Dam Val*), penetration rating (*Pen Rtg*), bulk, magazine capacity (*Magazine*), single-shot (SS) and burst recoil, and short range in meters, and are presented in the standard tabular format shown below. Note that each line is for a different type of round fired from the gun. Although some factors such as ROF and magazine capacity are constant for all rounds, other characteristics vary from round to round.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
10mm Ball	SA	2	Nil	1	14	3	—	5

Round types are ball (standard solid slug), HE (high-explosive), HEAP (high-explosive armor-piercing), DS (discarding-sabot), tranq (tranquilizer), and flechette (multiple-round finned darts); ROF abbreviations are the standard codes from TNE, page 272; *Dam Val* and *Pen Rtg* are discussed on TNE, page 285; Bulk is explained under "Resolving Ties" on TNE, page 265; *Magazine* codes are discussed on TNE, page 272, but no letter always indicates a box magazine; Recoil is discussed on TNE, pages 275-277; *Short Range* is discussed on TNE, page 275. Some short range listings show an iron sight range; this is shown when a weapon has an integral sighting device installed and shows the short range if that sighting

device were to be removed (see *Fire, Fusion, & Steel* for further details).

Sometimes there is more than one line for each round, as the addition of bipods or tripods will change the recoil rating and range, and the addition of other equipment to the weapon will change its weight, and therefore its recoil values.

Shotguns and weapons which fire flechettes have multiple lines for each shotgun and/or flechette round because these rounds perform differently at short and medium-ranges. On the medium+ line they also have an additional parenthetical listing with their ROF value which shows the burst size in number of rounds. See TNE, pages 279-80, for further details.

Some heavy weapons and missiles, depending upon their characteristics and function, may add the following additional characteristics: penetration value (*Pen Val*, discussed on TNE, pages 296-7), concussion and burst ratings (*Con-Brst*, or C.; B: listed under *Damage*, see TNE, page 283), danger space (*Dngr Spc*, TNE, page 279-80), indirect fire range (*IFR*, see TNE, page 280), maximum range (TNE, page 278), combat move (*Cbt Move*), and agility (TNE, page 295), and substitute reload time (*Rld*), in 5-second combat turns, for ROF.

Lasers add a table to adjust laser performance for different atmosphere types—details are on page 89.

Most weapons have their size described in terms of mass, usually in kilograms or tonnes, where 1000 kg = 1 tonne. Unless volume is listed separately, weapons typically have a volume in liters equal to their mass in kg (an equivalent expression is *volume in cubic meters is equal to mass in tonnes*).

Some exceptions to this include high-energy weapons and magazines.

For high-energy weapons (plasma and fusion guns), the volume of their firing units and support hardware in liters is equal to mass in kg times 0.5 (volume in cubic meters = mass in tonnes × 0.5). All other components of high-energy weapons (except their magazines, see below) have a volume of 1 liter per kg (1 m³ per tonne).

Magazines, which carry dense cartridges, are figured in a different way. For purposes of determining volume, there are three types

of magazines: slug-firing cartridge magazines, high-energy weapon (pulsed power cartridge) magazines, and chemical laser cartridge magazines.

Slug-firing magazines have a volume in liters equal to the mass in kg of a full load of carried rounds times 0.5 (volume in m³ = mass of rounds in tonnes × 0.5). High-energy weapon magazines have a volume in liters equal to the mass in kg of a full load of rounds times 0.25 (volume in m³ = mass of rounds in tonnes × 0.25). Chemical laser cartridge magazines have a volume in liters equal to the mass in kg of a full load of rounds times 0.2 (volume in m³ = mass of rounds in tonnes × 0.2).

Small Arms Ammunition

Small Arms Ammunition Designation

Ammunition is given two similar designations, a technical designation, and a common designation.

Technical Designations: In the technical designation system used by the RC, ammunition is identified by its diameter and the cartridge case length in millimeters (5×22mm, 7×57mm, etc.), sometimes followed by additional descriptive codes (9×24mm-5, 5.5×45mmE) representing other important characteristics.

The designation E identifies the ammunition as using ETC (electrothermal chemical) propulsion. For example, 7×46mmE indicates an ETC round 7mm in diameter with a 46mm case length. ETC rounds have a small band around their cartridge cases, to prevent them from chambering in non-ETC guns of the same caliber.

A number following a dash indicates the tech level of the ammunition. For example, the two 9mm pistol rounds 9×20mm-4 and 9×20mm-6 are manufactured for different weapons and are different rounds (that is, their chamber pressures are radically different), even though their diameter and case length are the same. In most cases, there is little danger of confusion, and the TL designator is omitted.

Because gauss rounds do not have a cartridge case, the designation indicates the length of the projectile instead of the case length. Often, gauss rounds will carry a further number, following a slash in the designation, indicating the muzzle velocity in hundreds of meters per second at which a weapon fires the round. All 4mm gauss rounds used by the Coalition are 4×20mm, for example, but those fired from the gauss pistol are sometimes labeled 4×20mm/15, those from the gauss rifle 4×20mm/35, and those fired from the VRFGG 4×20mm/60, indicating muzzle velocities of 1500, 3500 and 6000 mps respectively.

Ball, Dart, slug, HE, HEAP, DS, and so on are used to designate various specialized classes of projectile. These names are fully explained in *Fire, Fusion, & Steel*, and will not be discussed here.

Common Designation: Ammunition in common parlance seldom uses the full technical designation. Also, the same type of ammunition may have several different common designations used in different circles. Common designations use the diameter in millimeters and a descriptive abbreviation. The round fired in the Coalition's standard ACR is technically designated 7×46mmE-10, but is also called 7mm RC(E) (the Coalition name indicating an electrothermal chemical round), 7mm ACR (a common name indicating the weapon it is most commonly used in), or 7mm ImpE (the old Imperial designation for the round, indicating an ETC round).

Note that most standard RC rounds are merely newly manufactured standard Imperial rounds with a new name. This is because of the large amount of relic Imperial ammunition and small arms that can be recovered. Military units can often "live off the land" by recovering relic ammunition and weapons of a common caliber. For ease of supply and standardization, adopting the old Imperial standards cannot be beat.

The following should help sort out the bewildering plethora of names, numbers, and abbreviations. The rounds are listed according to their technical designations, but the entries for each round include other designations and indicate which weapons the round is used in.

Note in these ammo entries that *average* muzzle energy is the energy inherent to the round itself. The muzzle energies listed with the weapons entries are the *actual* muzzle energies when fired from those weapons. Actual muzzle energy varies from average muzzle energy depending on barrel length; see *Fire, Fusion, & Steel* for more information. Gauss rounds have no inherent muzzle energy; this depends entirely on the weapons which fire them.

Some of the ammunition shown on the following pages do not correspond to weapons in this book; they are used with weapons shown in the TNE basic rules, pages 351-353.



9×3	9×6	9×9
8×3	8×6	8×9
7×3	7×6	7×9
6×3	6×6	6×9
5×3	5×6	5×9
4×3	4×6	4×9
3×3	3×6	3×9
2×3	2×6	2×9
1×3	1×6	1×9
0×3	0×6	0×9
«	•	»



Security Clearance

Yes No

28 IX-1201

Date

Reformation Coalition Ammunition



4x20mm Gauss



5x50mm-7



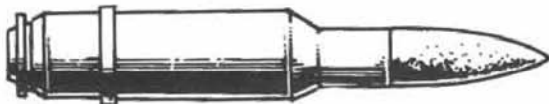
5.5x45mmE-9



7x64mm-8



7x30mmE-10



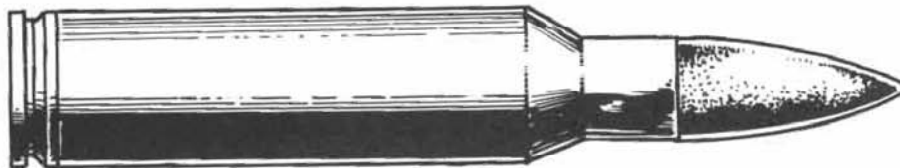
7.5x50mmE-9



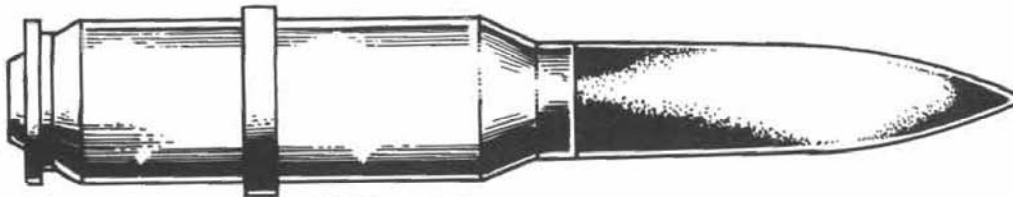
7.6x15mmE-9



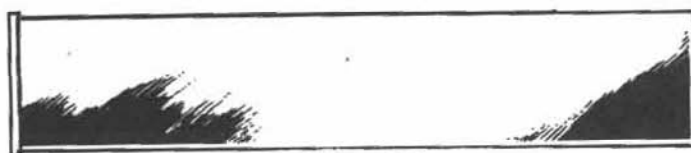
9x20mm-6



13x75mm-6



15x75mmE-9



18x90mm-10



20x35mm-8

Small Arms Ammunition

4×20mm Gauss

Common Designation(s): 4mm Gauss

Average Muzzle Energy: N/A

Weapons: 4mm gauss pistol, 4mm gauss rifle, 4mm gauss SAW, 4mm VRF GG (Veh), 4mm VRF GG (MP)

Comments: Gauss pistols are scarce in the Coalition, but 4mm gauss rifles and support weapons such as the SAW and VRF gauss gun are becoming more common. VRF gauss guns are often used as the primary armament on troop carrier grav APCs. An interesting side note concerning gauss weapons, the bores are not perfectly circular as with other weapons, but are machined out with small slits to accommodate the round's stabilizing fins.

5×22mm-5

Common Designation(s): 5mm Pistol, 5mm Short

Average Muzzle Energy: 138 joules (Tranq: 83 joules)

Weapons: 5mm revolver

Comments: This cartridge was originally developed in pre-Collapse times as a sporting round for small game and target shooting. It is encountered primarily as a secondary weapon in the hands of ill-equipped militias.

5×27mm-8

Common Designation(s): 5mm BP, 5mm Long

Average Muzzle Energy: 233 joules (Tranq: 140 joules)

Weapons: 5mm body pistol

Comments: The body pistol is a common "hideout" weapon throughout charted space, and the cartridge it fires is equally common. A number of "spy" type clandestine weapons (firearms concealed in writing implements, cameras, and the like) are chambered for this round.

5×50mm-7

Common Designation(s): 5mm Imperial, 5mm RC

Average Muzzle Energy: 1571 joules (Tranq: 943 joules)

Weapons: 5mm assault rifle, 5mm LMG, 5mm rotary (tech levels 7 and 8).

Comments: The Coalition still makes use of this cartridge in its 5mm rotary weapons, but these are gradually being phased out in favor of a weapon firing the 5.5mmE-9 round. Other weapons chambered for this round are common on less-developed worlds throughout the Wilds.

5.5×45mmE-9

Common Designation(s): 5.5mm RC(E)

Average Muzzle Energy: 4448 joules (Tranq: 2669 joules)

Weapons: 5.5mm assault rifles, 5.5mm Rotary

Comments: This round is the standard small rifle cartridge for the Coalition.

7×23mm-5

Common Designation(s): 7mm Short

Average Muzzle Energy: 283 joules (Tranq: 170 joules)

Weapons: 7mm revolver

Comments: Weapons firing this pre-Collapse round are found throughout the Wilds as a secondary weapon equipping low-technology armed forces and used by civilians for personal defense.

7×26mm-5

Common Designation(s): 7mm Carbine

Average Muzzle Energy: 1281 joules (Tranq: 769 joules)

Weapons: 7mm carbine, 7mm carbine (folding stock), 7mm carbine (civilian)

Comments: Carbines are primarily used by vehicle crews and others whose primary job does not require a full rifle, but from time to time need more effective armament than a pistol. Civilian weapons firing this round were originally developed as sporting weapons and to arm settlers in remote areas.

7×30mm-6

Common Designation(s): 7mm Pistol, 7mm Long

Average Muzzle Energy: 416 joules (Tranq: 250 joules)

Weapons: 7mm autopistol

Comments: Another pre-Collapse pistol round, sometimes used by paramilitary police organizations.

7×30mmE-10

Common Designation(s): 7mm ACR, 7mm ETC Imperial, 7mm RC(E)

Average Muzzle Energy: 4803 joules (Tranq: 2882 joules)

Weapons: 7mm advanced combat rifle, 7mm Coalition Multipurpose Weapons System

Comments: This round is the standard ACR cartridge for the Coalition, and is based on the pre-Collapse Imperial ACR round.

7×44mm-7

Common Designation(s): 7mm AR, 7mm Guild

Average Muzzle Energy: 2709 joules (Tranq: 1625 joules)

Weapons: 7mm assault rifle

Comments: Weapons using this cartridge are widely used by local armed forces throughout the Wilds.

7×57mm-5

Common Designation(s): 7mm Imperial Rifle, 7mm RC Rifle

Average Muzzle Energy: 2808 joules (Tranq: 1685 joules)

Weapons: 7mm rifle, 7mm rifle (civilian), 7mm autorifle, 7mm MMG, 7mm LMG, 7mm rotary (tech level 7).

Comments: This round is commonly used in many armed forces throughout the Wilds, and is used in some of the Coalition's 7mm rotary weapons (although these are in the process of being replaced by weapons chambered for the 7×30mmE-10 cartridge used in the 7mm advanced combat rifle).

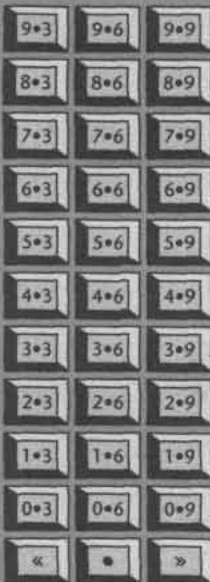
7×64mm-8

Common Designation(s): 7mm RC Rotary

Average Muzzle Energy: 4335 joules (Tranq: 2601 joules)

Weapons: 7mm rotary (tech level 8).

Comments: This cartridge was developed for use in rotary weapons, and no other weapons make use of it. These weapons are widely used by the Coalition, but will ultimately be replaced by weapons chambered for the 7×30mmE-10 cartridge used in the 7mm advanced combat rifle.



Security Clearance



28 IX-1201

Date

Reformation Coalition Equipment Guide



7.5×50mmE-9

Common Designation(s): 7.5mm RC(E)
Average Muzzle Energy: 8482 joules (Tranq: 5089 joules)
Weapons: 7.5mm MMG

Comments: This round was developed by the Coalition for use in 7mm MMGs, but the only weapons using it so far are coaxial MGs on Coalition AFVs.

7.6×15mmE-9

Common Designation(s): 7.6mm Super-pistol, 7.6mm RC(E)
Average Muzzle Energy: 653 joules (Tranq: 392 joules)
Weapons: 7.6mm autopistol, 7.6mm SMG

Comments: This round was developed by the Coalition for use in SMGs and is the standard-issue sidearm for starship crewmembers.

9×20mm-4

Common Designation(s): 9mm Short
Average Muzzle Energy: 356 joules (Tranq: 214 joules)
Weapons: 9mm revolver-4, 9mm revolver-5

Comments: Revolvers chambered for this round are in use by low-tech armed forces, police agencies, and paramilitary forces throughout the Wilds. This round can be used in weapons chambered for 9×20mm-6 rounds, but at a loss in performance (see the weapon's listing on page 47).

9×20mm-6

Common Designation(s): 9mm Imperial, 9mm RC Pistol
Average Muzzle Energy: 458 joules (Tranq: 275 joules)
Weapons: 9mm autopistol

Comments: Automatic pistols chambered for this round are in use by low-tech armed forces, police agencies, and paramilitary forces throughout the Wilds. It can be used in weapons designed for the 9×20mm-4 round (these weapons are not presented in this book), but is too powerful for them, and will ultimately damage these weapons (see the discussion of overpowered cartridges in the Rules Expansion section).

9×24mm-5

Common Designation(s): 9mm Guild
Average Muzzle Energy: 489 joules (Tranq: 293 joules)
Weapons: 9mm SMG, 9mm folding stock SMG

Comments: This round is primarily used by the Mercantile Guild in SMGs and its "Deck-Sweeper" boarding weapon.

9×33mm-5

Common Designation(s): 9mm Imperial Magnum, 9mm Guild Magnum
Average Muzzle Energy: 672 joules (Tranq: 403 joules)
Weapons: 9mm magnum revolver

Comments: Revolvers using this cartridge are primarily used by low-tech police agencies and by civilians. Guild crews prefer this weapon as a sidearm.

9×44mm-7

Common Designation(s): 9mm Rifle
Average Muzzle Energy: 4479 joules (Tranq: 2687 joules)
Weapons: 9mm rifle

Comments: This cartridge and the weapons using it were developed prior to the Collapse for hunting large game animals. The Mercantile Guild sells both the weapons and the ammunition for them to TEDs throughout the Wilds.

10×17.5mm-8

Common Designation(s): 10mm Pistol, 10mm Imperial Navy
Average Muzzle Energy: 605 joules (Tranq: 363 joules)
Weapons: 10mm snub revolver, 10mm snub auto

Comments: This cartridge pre-dates the Collapse, and weapons chambered for it are used by Free Trader crewmembers throughout the Wilds.

12×45mm-5

Common Designation(s): 12mm Rifle
Average Muzzle Energy: 1629 joules (Tranq: 977 joules)
Weapons: 12mm hunting rifle

Comments: This cartridge and the weapons using it were developed prior to the Collapse for hunting large game animals. They are often encountered in the hands of low-tech military forces and militias.

13×75mm-6

Common Designation(s): 13mm RC, 13mm Imperial
Average Muzzle Energy: 14,336 joules (Tranq: 8601 joules)
Weapons: 13mm HMG, 13mm sniper's rifle

Comments: Many armies throughout the Wilds make use of this cartridge in a heavy machinegun and as a sniper's round. It is still in use with the Coalition in the latter capacity. The tranq round is used only against large animals.

14.5×146mm

Common Designation(s): 14.5mm Guild, 14.5mm AAR
Average Muzzle Energy: 31,008 joules
Weapons: 14.5mm AAR

Comments: This cartridge is used in the infamous "Crunch Gun," and is the bane of many an RCES landing team. The origin of this weapon is unknown, but it has been spread throughout the Wilds by Guild merchants, who sell the dies and machine tools for its manufacture to low-tech worlds to create a market for higher tech ammunition chambered for the weapon.

15×75mmE-9

Common Designation(s): 15mm RC(E)
Average Muzzle Energy: 55,135 joules
Weapons: 15mm HMG

Comments: This round is almost solely used in the Coalition's vehicle-mounted 15mm heavy machinegun (not included in this book), used by heavy assault troops.

18×70mm-4

Common Designation(s): 18mm Shotgun, 12 Gauge
Average Muzzle Energy: 2494 joules (Tranq: 1496 joules)

Weapons: 18mm pump shotgun, 18mm auto shotgun, 18mm double-barreled shotgun, 18mm sawed-off double-barreled shotgun

Comments: This round and the weapons designed for it predate the Collapse, and are common throughout the Wilds in civilian (hunting and personal defense), police, and military applications.

18×90mm-10

Common Designation(s): 18mm Long Shotgun Caseless, 18mm RC shotgun

Average Muzzle Energy: 5497 joules (Tranq: 3298 joules)
Weapons: 18mm assault shotgun

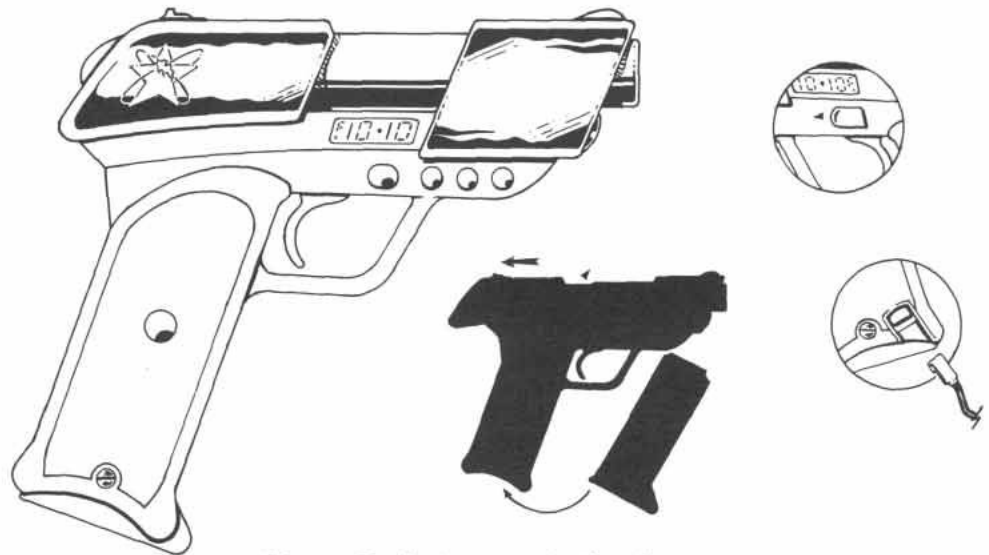
Comments: This round was developed for use in the Coalition's 18mm assault shotgun.

20×35mm-8

Common Designation(s): 20mm Imperial, 20mm RC, 2cm LAG
Average Muzzle Energy: 4838 joules (Tranq: 2903 joules)
Weapons: 2cm LAG

Comments: Based on a pre-Collapse design, this round is used in the Coalition's 2cm light assault gun. Weapons using it are also manufactured and sold throughout the wilds by the Mercantile Guild. Tranq round is used for very large animals.

10mm Snub Pistols



10mm Snub Automatic Pistol

Snub pistols are low-velocity weapons designed for use on shipboard and in zero-G environments, and are common sidearms for starship crewmembers throughout the Wilds. Because of the low muzzle velocity of these weapons, their ball round is of minimal effectiveness, and HE, DS, or HEAP rounds are preferred. The range of the weapons are woefully short compared to other pistols, but this is not considered a disadvantage in close quarters. The semiautomatic snub pistol uses the same ammunition as the snub revolver (10×17.5mm-8 cartridge). This page covers the automatic version of the snub pistol; see the facing page for the snub revolver.

The weapon is of conventional layout for an automatic pistol, and utilizes a 14-round detachable box magazine inserted in the pistol grip. An attachment point is provided for a lanyard, which many users find useful to prevent the weapon from drifting away in zero-G conditions.

Because of its use in zero- and low-gravity combat situations, the snub pistol is sometimes fitted with an attached laser sight, a device which projects a red dot at the point of impact. Zero-G weapons training stresses a different firing stance than that used in conventional combat: The weapon is held close to the body at the center of mass (rather than at arms' length) to minimize recoil induced rotational motions.

HEAP rounds for this weapon are manufactured at TL-9 and above, and are designed not to exceed safe chamber pressures for the weapon.

TL: 8

Ammo: 10×17.5mm-8

Muzzle Energy: 484 joules (Tranq: 290 joules)

Weapon Length: 17 cm

Weapon Weight: 1.198 kg loaded, 1.044 kg empty (includes weight of empty box magazine)

Weapon Price: Cr160

Magazine Weight: 0.2728 kg loaded, 0.119 kg empty

Magazine Price: Cr10 empty

Ammunition Price: Cr0.44 (Ball), Cr0.88 (HE, DS, Tranq), Cr1.32 (HEAP) per round

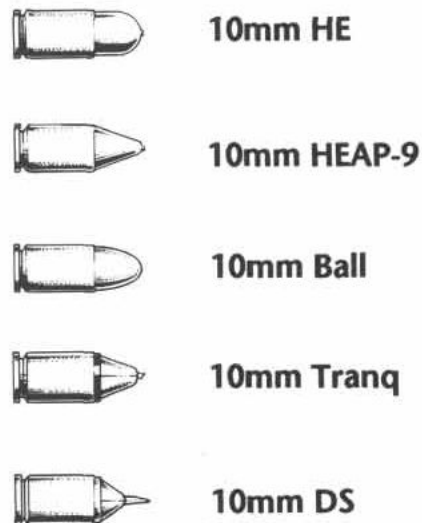
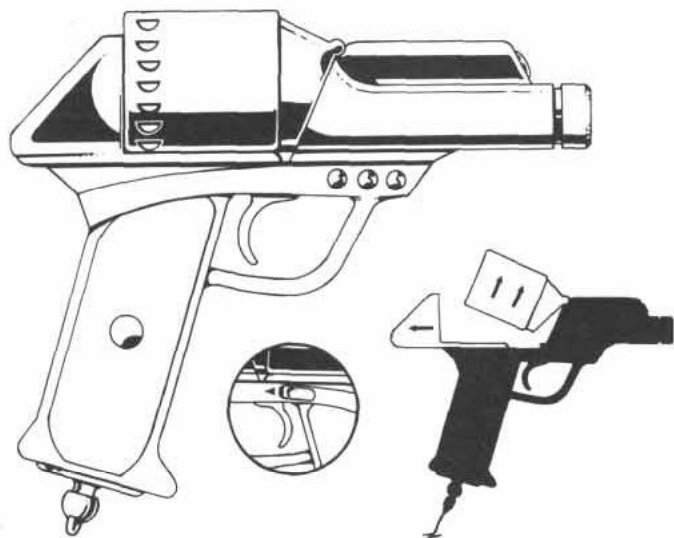
Ammunition Weight: 11 grams per round

Features: None. TL-8 laser sight optional.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
10mm Ball	SA	2	Nil	1	14	3	—	5
10mm DS	SA	2	1-Nil	1	14	3	—	7
10mm HE	SA	3	Nil	1	14	3	—	4
10mm HEAP-9	SA	3	2-2-2	1	14	3	—	4
10mm Tranq	SA	-1*	Nil	1	14	2	—	4

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Attaching a laser sight adds 1 kg to the weapon's mass, Cr400 to the price, and changes the recoil to SS: 1, Burst: — for all rounds. It requires a different holster.



10mm Snub Revolver

For a description of this pistol, see facing page.

The snub revolver uses the same ammunition as the snub semiautomatic pistol.

The weapon departs from conventional revolver design in that the cylinder hinges upwards for loading, and that the barrel lines up with the lowest chamber in the cylinder rather than the highest. It is rumored that this design reduces rotational torque in zero-G conditions, but tests have shown that the effect is minimal.

TL: 8

Ammo: 10×17.5mm-8

Muzzle Energy: 472 joules (Tranq: 283 joules)

Weapon Length: 17 cm

Weapon Weight: 0.981 loaded, 0.915 empty

Weapon Price: Cr117.8

Magazine: None. Speedloader available, 6 rounds weigh 0.066 kg or 66 grams

Ammunition Price: Cr0.44 (Ball), Cr0.88 (HE, DS, Tranq), Cr1.32 (HEAP) per round

Ammunition Weight: 11 grams per round.

Features: None. TL-8 laser sight optional.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
10mm Ball	DAR	2	Nil	1	6R	3	—	4
10mm DS	DAR	2	1-Nil	1	6R	3	—	5
10mm HE	DAR	3	Nil	1	6R	3	—	3
10mm HEAP-9	DAR	3	2-2-2	1	6R	3	—	3
10mm Tranq	DAR	-1*	Nil	1	6R	3	—	4

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Attaching a laser sight adds 1 kg to the weapon's mass, Cr400 to the price, and changes the recoil to SS: 1, Burst: — for all rounds. It requires a different holster.

Speedloaders

Speedloaders are small devices that hold a number of cartridges ready for rapid insertion into a revolver cylinder, enabling a revolver to be reloaded in a single turn regardless of how many rounds are to be inserted. Speedloaders are reusable, like magazines, but unlike magazines do not form part of the weapon. Speedloaders are uniquely designed for each pistol, and users normally carry 2-4 in a small snap pouch.

TL: 5

Mass: Negligible other than mass of ammunition

Price: Cr2 for all weapons

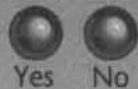
Automatic Pistols



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
«	•	»

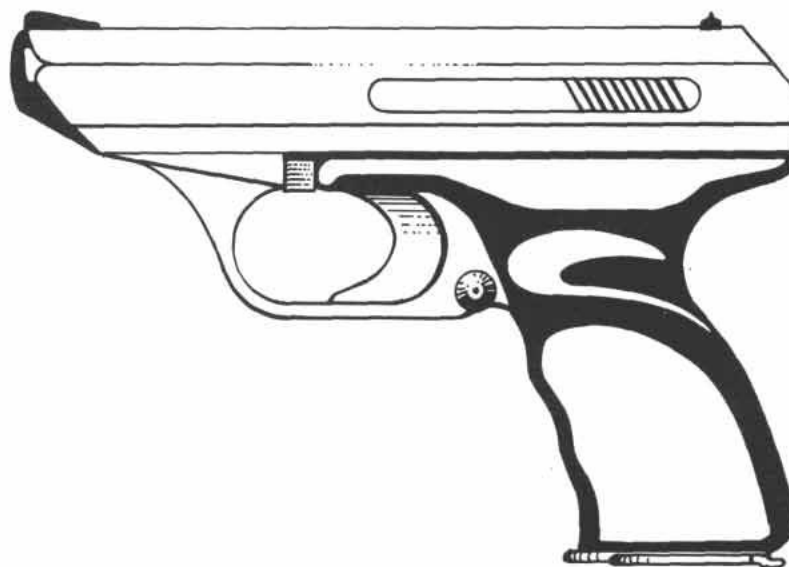


Security Clearance



28-IX-1201

Date



7.6mm Autopistol

Pistols chambered for the 7.6mm RC(E) round have become the standard sidearm of the RCES and other Coalition forces, gradually replacing the earlier 9x20mm autopistols. Although the range is slightly less than that of the 9mm round, the 7.6mm round has superior penetration, less recoil, and the smaller ammunition means that more rounds can be carried in a magazine. The 7.6mm HEAP ammunition has good stopping power for a pistol, 7.6mm DS is preferred where range is important, but the 7.6 ball round is a good compromise between these two factors.

TL: 9

Ammo: 7.6x15mm RC(E)

Muzzle Energy: 653 joules (Tranq: 392 joules)

Weapon Length: 22 cm

Weapon Weight: 1.5093 kg loaded, 1.4233 empty (includes weight of empty box magazine)

Weapon Price: Cr476.3

Magazine Weight: 0.5828 kg loaded, 0.4968 kg empty

Magazine Price: Cr87.76

Ammunition Price: Cr0.11 (Ball), Cr0.22 (HE, DS, Tranq), Cr0.33 (HEAP)

Ammunition Weight: 5.4 grams per round

Features: None

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7.6x15mm ETC Ball	SA	2	1-Nil	1	16	2	—	9
7.6x15mm ETC DS	SA	2	1-Nil	1	16	2	—	11
7.6x15mm ETC HE	SA	3	Nil	1	16	2	—	7
7.6x15mm ETC HEAP	SA	3	2-2-2	1	16	2	—	7
7.6x15mm ETC Tranq	SA	-1*	Nil	1	16	1	—	4



9mm Autopistol

Automatic pistols chambered for this round are in use by low-tech armed forces, police agencies, and paramilitary forces throughout the Wilds and with the Coalition as well. The Coalition military is phasing them out in favor of 7.6mm RC(E) pistols, which means that increasing numbers are becoming available to free-lancers.

Of the high-tech ammunition manufactured to TL-6 chamber pressures for this weapon, DS is the most common due to its superior penetration.

TL: 6

Ammo: 9x20mm-6

Muzzle Energy: 595 joules (Tranq: 357 joules)

Weapon Length: 24 cm

Weapon Weight: 1.018 kg loaded, 0.908 empty (includes weight of empty box magazine)

Weapon Price: Cr169.6

Magazine Weight: 0.2 kg loaded, 0.09 kg empty

Magazine Price: Cr1 (empty)

Ammunition Price: Cr0.4 (Ball), Cr0.8 (HE, DS, Tranq), Cr1.2 (HEAP)

Ammunition Weight: 10 grams per round

Features: None

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
9x20mm Ball-6	SA	2	Nil	1	11	3	—	13
9x20mm DS-8	SA	2	1-Nil	1	11	3	—	16
9x20mm HE-6	SA	2	Nil	1	11	3	—	10
9x20mm HEAP-9	SA	2	Nil	1	11	3	—	10
9x20mm Tranq-6	SA	-1*	Nil	1	11	3	—	6
9x20mm Ball-4	SA	1	Nil	1	11	3	—	12

Holsters and Ammo Pouches

Few people want to carry weapons jammed into their hip pocket or tucked into their belt—holsters were created to make weapons easily portable and readily accessible.

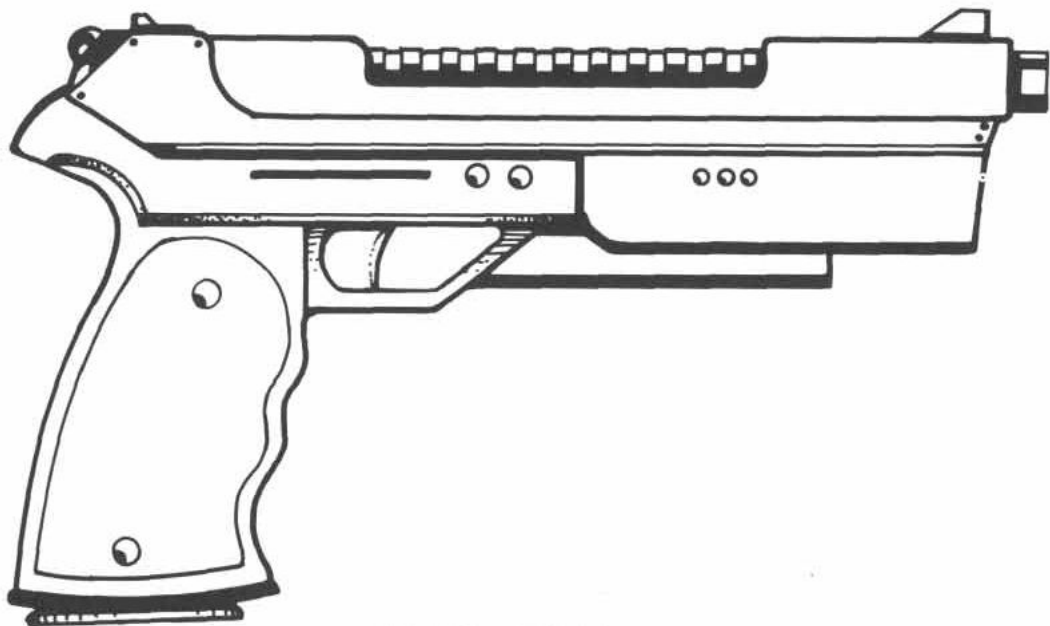
Holsters for bulk 0 and bulk 1 weapons may be concealed under clothing, and can be carried at the wrist or ankle, the small of the back, the hip, or under the arm (known as a shoulder holster). Knives and daggers count as bulk 0 for this purpose, bayonets bulk 1, hatchets and blades bulk 2, and clubs bulk 3.

Holsters for bulk 2 and bulk 3 weapons are normally carried on the thigh, across the back, or hung under the shoulder, and while they may be covered by clothing, their bulges are unmistakable.

Weapons of bulk 4 and greater (including all melee weapons not detailed above) may not be carried in holsters.

Concealed Weapons: Holsters carried concealed under clothing can be detected by an intensive physical search ("frisking"), or via technical means such as metal detectors or chemical sniffers. Detecting a concealed weapon by a visual search is a Difficult: Observation task for bulk 0 weapons, Average for bulk 1 weapons.

Gauss and Body Pistols



4mm Gauss Pistol

All gauss weapons in Coalition service use the old Imperial standard 4mm gauss ammunition, which CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) chose to adopt over the Hiver standard 5.5mm gauss round for various reasons which will not be discussed here. Since the technology required for their manufacture is more than the Coalition is presently capable of, gauss pistols in Coalition service are either relics salvaged from pre-Collapse arsenals, or newly manufactured weapons made using TL-13 receivers and magazine batteries imported from the Hivers.

The selective fire feature of this weapon and its large magazine capacity have made it a very popular sidearm within the RCES, and demand constantly exceeds the supply.

The gauss pistol can be fitted with a TL-10 laser sight which improves its accuracy and controllability at the expense of almost doubling the weapon's mass (loaded weight with laser sight becomes 1.285 kg).

TL: 13

Ammo: 4x20mm/15

Muzzle Energy: 563 joules (required power: 1013 joules)

Weapon Length: 22 cm

Weapon Weight: 0.785 kg loaded, 0.768 empty (includes weight of empty box magazine)

Weapon Price: Cr248.5

Magazine Weight: 0.2245 kg loaded, 0.207 kg empty

Magazine Price: Cr1.35 (loaded), Cr1 (empty)

Ammunition Price: Cr0.01 (Dart), Cr0.02 (HE, Tranq), Cr0.03 (HEAP)

Ammunition Weight: 0.5 grams per round

Features: Optional TL-10 laser sight

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
4x20mm/15 Dart	5	2	Nil	1	35	2	6	12
with laser sight						1	4	
4x20mm/15 HE	5	3	Nil	1	35	2	6	9
with laser sight						1	4	
4x20mm/15 HEAP	5	3	2-2-2	1	35	2	6	9
with laser sight						1	4	
4x20mm/15 Tranq	5	-1*	Nil	1	35	2	4	7
with laser sight						1	3	

Security Clearance

Yes No

28 IX 1201

Date



5mm Body Pistol

This weapon is a small, semiautomatic handgun designed to evade detection by most weapon detectors, and is a common "hideout" weapon throughout known space. A silencer is available, but when attached the weapon becomes bulk 1 instead of bulk 0. It requires three turns (15 seconds) to attach or remove the silencer. With a silencer, recoil is reduced to SS: 2, Burst: — for all rounds. Ball and tranq are the rounds most commonly used; the others are rarely seen.

Note that this weapon is specially made with all non-metallic components so that it is not susceptible to discovery by metal detectors. This standard of manufacture is quite expensive and must extend to all components of the weapon, including magazine and ammunition, so that all prices below are three times those of a metallic weapon of identical performance.

Covert operatives are occasionally equipped with disguised weapons firing this cartridge, but otherwise the weapon is not used by the Coalition, although it is occasionally found in the hands of free-lancers.

TL: 8

Ammo: 5x27mm-8

Muzzle Energy: 198 joules (Tranq: 118 joules)

Weapon Length: 14 cm

Weapon Weight: 0.662 kg loaded, 0.55 kg empty (includes weight of empty box magazine)

Weapon Price: Cr280.8

Magazine Weight: 0.1888 kg loaded, 0.077 kg empty

Magazine Price: Cr3

Ammunition Price: Cr0.48 (Ball), Cr0.96 (HE, DS, Tranq), Cr1.44 (HEAP)

Ammunition Weight: 4 grams per round.

Features: Optional silencer available.

Silencer Weight: 0.233 kg

Silencer Price: Cr141

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5x27mm Ball	SA	1	Nil	0	28	3	—	4
5x27mm DS	SA	1	Nil	0	28	3	—	5
5x27mm HE	SA	1	Nil	0	28	3	—	3
5x27mm HEAP	SA	1	Nil	0	28	3	—	3
5x27mm Tranq	SA	-1*	Nil	0	28	2	—	4

* 1D6-1 points of damage plus tranq effect from TNE, page 350.

Rifles and SMGs

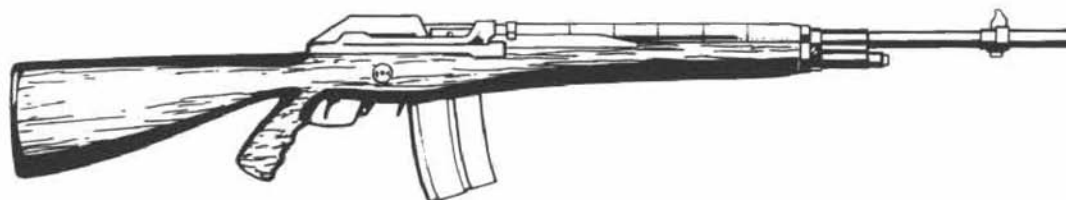


Security Clearance



28-IX-1201

Date



7mm Assault Rifle

This weapon is the most commonly used rifle among the armed forces serving the members of the Mercantile Guild. Weapons using this cartridge are also widely used by local armed forces throughout the Wilds. Both the Guild and the Coalition also make TL-8 ammunition (DS and HEAP rounds) designed with this weapon in mind.

TL: 7
Ammo: 7x44mm-7
Muzzle Energy: 2729 joules (Tranq: 1637 joules)
Weapon Length: 100 cm
Weapon Weight: 4.805 kg loaded, 4.325 empty (includes weight of empty box magazine)
Weapon Price: Cr920

Magazine Weight: 0.8064 kg loaded, 0.3264 kg empty
Magazine Price: Cr4
Ammunition Price: Cr0.32 (Ball), Cr0.64 (HE, DS, Tranq), Cr0.96 (HEAP)
Ammunition Weight: 16 grams per round
Features: Flash suppressor, bayonet lug, rifle grenade adaptor

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x44mm Ball	5	4	2-Nil	6	30	3	6	40 (44)
7x44mm DS-8	5	4	1-2-Nil	6	30	3	6	50 (53)
7x44mm HE	5	4	Nil	6	30	3	6	30 (33)
7x44mm HEAP-9	5	4	2-2-2	6	30	3	6	30 (33)
7x44mm Tranq	5	-1*	Nil	6	30	2	5	20 (20)

*1D6-1 points of damage plus tranq effect on TNE, page 350.
 Short range in parentheses is the unrounded iron sight range.

7mm Autorifle

This weapon is widespread throughout the Wilds, and manufactured on a number of worlds by various TEDs. It uses the same ammunition as the 7mm rifle and 7mm civilian rifle. The Mercantile Guild sells advanced rounds (higher than TL-5) for this weapon.

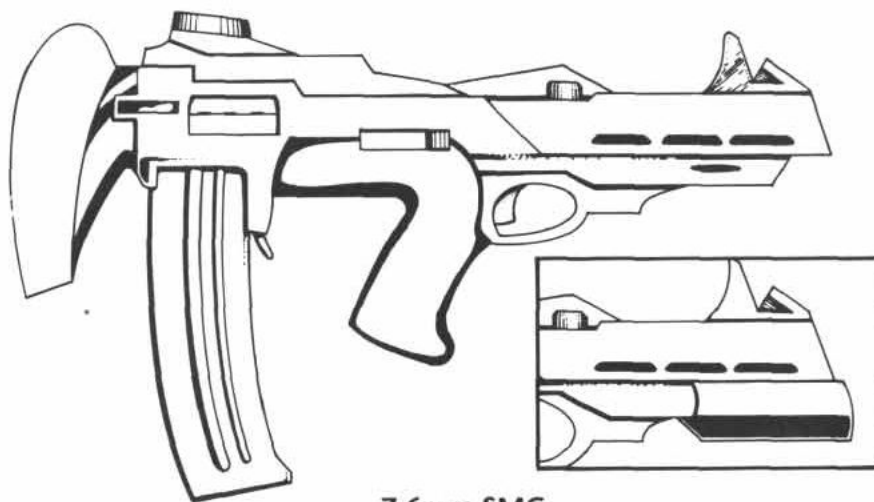
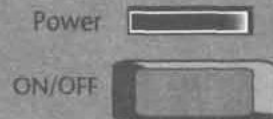
TL: 6
Ammo: 7x57mm-5
Muzzle Energy: 2685 joules (Tranq: 1611 joules)
Weapon Length: 117 cm
Weapon Weight: 5.694 kg loaded, 5.254 empty (includes weight of empty box magazine)

Weapon Price: Cr998
Magazine Weight: 0.7568 kg loaded, 0.3168 kg empty
Magazine Price: Cr4
Ammunition Price: Cr0.44 (Ball), Cr0.88 (HE, DS, Tranq), Cr1.32 (HEAP)
Ammunition Weight: 22 grams per round
Features: Flash suppressor, bayonet lug, rifle grenade adaptor

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x57mm Ball-5	5	4	2-Nil	7	20	3	8	60 (60)
7x57mm DS-8	5	4	1-2-Nil	7	20	3	8	70 (72)
7x57mm HE-6	5	4	Nil	7	20	3	8	50 (45)
7x57mm HEAP-8	5	4	2-2-2	7	20	3	8	50 (45)
7x57mm Tranq-6	5	-1*	Nil	7	20	3	8	30 (28)

*1D6-1 points of damage plus tranq effect on TNE, page 350.
 Short range in parentheses is the unrounded iron sight range.

Reformation Coalition Equipment Guide



7.6mm SMG

The 7.6mm SMG has replaced the various 9mm SMGs in Coalition service. The 7.6mm RC(E) round was one of the first rounds developed by CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition), and represents one of its greatest successes.

The round has the same stopping power as the 7.6mm autopistol, but at a greater range. Some users mix rounds in each magazine, loading a 3:1:1 ratio of ball, DS, and HE or HEAP rounds. Tranq rounds are seldom used in this weapon.

The weapon is short and easy to handle, and lends itself readily to the attachment of a TL-10 laser sight. With the sight attached, recoil becomes as noted on the table below.

TL: 9

Ammo: 7.6x15mm RC(E)

Muzzle Energy: 1110 joules (Tranq: 666 joules)

Weapon Length: 40 cm

Weapon Weight: 2.27 kg loaded, 2.11 empty (includes weight of empty box magazine)

Weapon Price: Cr844

Magazine Weight: 1.0822 kg loaded, 0.9202 kg empty

Magazine Price: Cr163.3

Ammunition Price: Cr0.11 (Ball), Cr0.22 (HE, DS, Tranq), Cr0.33 (HEAP)

Ammunition Weight: 5.4 grams per round

Features: TL-10 Laser Sight optional

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7.6x15mm Ball	3/5	2	1-Nil	2	30	2	3/5	80 (77)
with TL-10 Laser sight						2	3/4	
7.6x15mm DS	3/5	2	1-Nil	2	30	2	3/5	90 (92)
with TL-10 Laser sight						2	3/4	
7.6x15mm HE	3/5	3	Nil	2	30	2	3/5	60 (58)
with TL-10 Laser sight						2	3/4	
7.6x15mm HEAP	3/5	3	2-2-2	2	30	2	3/5	60 (58)
with TL-10 Laser sight						2	3/4	
7.6x15mm Tranq	3/5	-1*	Nil	2	30	2	2/4	30 (30)
with TL-10 Laser sight						1	2/4	

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.

9mm Rifle

This rifle is a military version of a pre-Collapse sporting rifle, adapted for military use. The Mercantile Guild manufactures the weapons and the ammunition for them, selling both to TEDs throughout the Wilds.

TL: 7

Ammo: 9x44mm-7

Muzzle Energy: 4438 joules (Tranq: 2663 joules)

Weapon Length: 128 cm

Weapon Weight: 9.022 kg loaded, 8.462 empty (includes weight of empty box magazine)

Weapon Price: Cr1157

Magazine Weight: 0.9632 kg loaded, 0.4032 kg empty

Magazine Price: Cr5

Ammunition Price: Cr0.56 (Ball), Cr1.12 (HE, DS, Tranq), Cr1.68 (HEAP)

Ammunition Weight: 28 grams per round

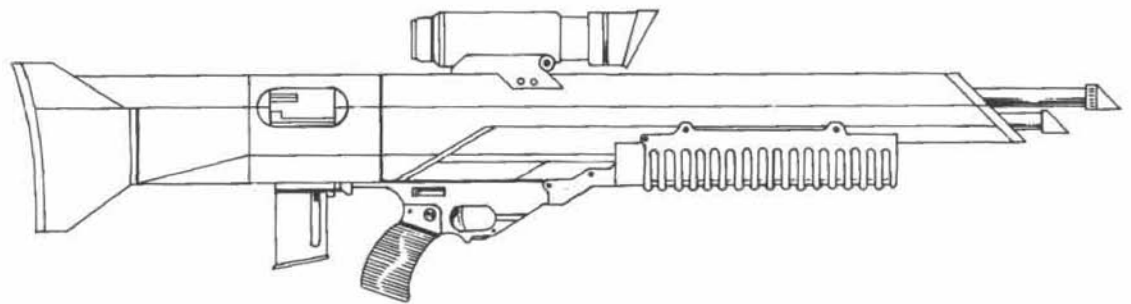
Features: Flash suppressor, bayonet lug

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
9x44mm Ball-7	SA	4	2-3-Nil	8	20	3	—	90 (85)
9x44mm DS-8	SA	4	1-2-3	8	20	3	—	100 (102)
9x44mm HE-6	SA	5	Nil	8	20	3	—	60 (64)
9x44mm HEAP-9	SA	5	2-2-2	8	20	3	—	60 (64)
9x44mm Tranq-7	SA	-1*	Nil	8	20	3	—	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.

5.5mm Assault Rifle with Grenade Launcher



5.5mm Assault Rifle

The 5.5mm assault rifle represents one of CSAARC's (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) attempts to create a standardized weapon system unrelated to any previous ammunition type. The purpose of the design was to create an assault rifle with a larger magazine capacity than the 7mm ACR, but with the same overall mass. A secondary purpose was to create a weapon that could be completely manufactured at TL-9. The standard 5.5mm assault rifle achieves these goals.

The weapon features an optic sight, flash suppressor, bayonet lug, RAM rifle grenade adaptor, and sling swivels.

TL: 9

Ammo: 5.5x45mm RC(E)

Muzzle Energy: 4448 joules (Tranq: 2669 joules)

Weapon Length: 129 cm

Weapon Weight: 6.158 kg loaded, 5.828 empty (includes weight of empty box magazine)

Weapon Price: Cr1776

Magazine Weight: 1.3644 kg loaded, 1.0344 kg empty

Magazine Price: Cr160

Ammunition Price: Cr0.22 (Ball), Cr0.44 (HE, DS, Tranq), Cr0.66 (HEAP)

Ammunition Weight: 11 grams per round

Features: Optic sight, flash suppressor, bayonet lug, RAM rifle grenade adaptor

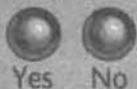
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
5.5x45mm Ball-9	3/5	5	2-3-Nil	8	30	2	3/5	90 (78)
5.5x45mm DS-9	3/5	5	1-2-Nil	8	30	2	3/5	110 (94)
5.5x45mm HE-9	3/5	5	Nil	8	30	2	3/5	70 (59)
5.5x45mm HEAP-9	3/5	5	2-2-2	8	30	2	3/5	70 (59)
5.5x45mm Tranq-9	3/5	-1*	Nil	8	30	2	3/5	30 (30)
with integral 2.5cm GL						2	3/4	

Range in parentheses is iron sight range (unrounded)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

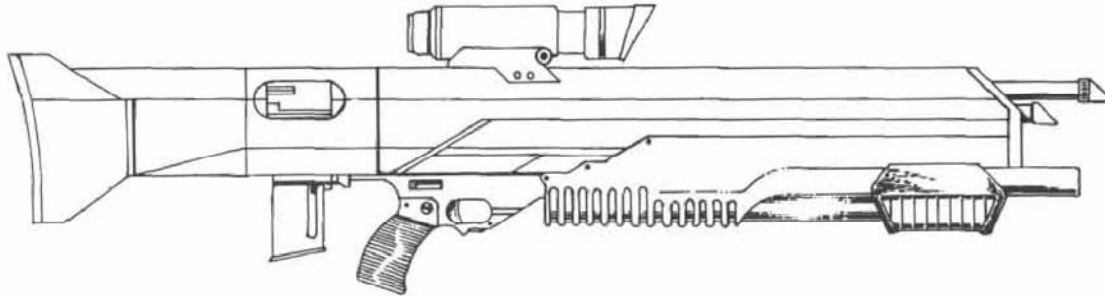


Security Clearance



28 IX 1201

Date



5.5mm Assault Rifle with Integral 2.5cm Grenade Launcher

This weapon is the main variant of the 5.5mm assault rifle, containing an integral 2.5cm pump-action grenade launcher (manufactured so as to be contained inside the weapon's plastic casing), along with the same optic sight, flash suppressor, bayonet lug, RAM rifle grenade adaptor, and sling swivels as the primary model, and is normally assigned one per four-soldier fire team. The rifle and its ammunition are TL-9, but the grenades and launcher are TL-10. Twin selector switches enable the same trigger to fire both weapons. Engaging the grenade launcher causes the grenade sight to swing up into position, and places the rifle on safe; engaging the rifle causes the GL to go on safe and the sight to fold down. Attachment of the 2.5cm GL changes recoil only for the tranq round: it becomes SS: 2, Burst: 3/4.

For data on the grenade launcher, see pages 98-99.

TL: 9

Ammo: 5.5x45mm RC(E)

Muzzle Energy (Rifle): 4448 joules (Tranq: 2669 joules)

Weapon Length: 129 cm

Weapon Weight (with integral GL): 9.5584 kg loaded, 8.7784 empty (includes weight of empty box magazine and empty GL)

Weapon Price (with integral GL): Cr2276

Magazine Weight (Rifle): 1.3644 kg loaded, 1.0344 kg empty (GL rounds are individually inserted)

Magazine Price (Rifle): Cr160

Ammunition Price (Rifle): Cr0.22 (Ball), Cr0.44 (HE, DS, Tranq), Cr0.66 (HEAP)

Ammunition Weight: 11 grams per round (see pages 98-99 for GL round data)

Features: Optic sight, flash suppressor, bayonet lug, RAM rifle grenade adaptor

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5.5x45mm Ball-9	3/5	5	2-3-Nil	8	30	2	3/5	90 (78)
5.5x45mm DS-9	3/5	5	1-2-Nil	8	30	2	3/5	110 (94)
5.5x45mm HE-9	3/5	5	Nil	8	30	2	3/5	70 (59)
5.5x45mm HEAP-9	3/5	5	2-2-2	8	30	2	3/5	70 (59)
5.5x45mm Tranq-9	3/5	-1*	Nil	8	30	2	3/5	30 (30)
with integral 2.5cm GL						2	3/4	

Range in parentheses is iron sight range (unrounded)

*1D6-1 points of damage plus tranq effect on TNE, page 350.



Light Assault Gun & Sniper Rifle



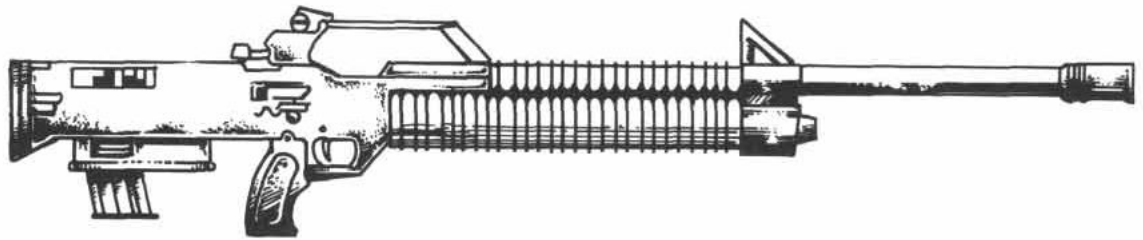
9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	•	>

Security Clearance

Yes No

28 IX 1201

Date



2cm Light Assault Gun (LAG)

This weapon is based on a pre-Collapse Imperial weapon, and has been adopted by the Coalition without major change. The tremendous close-range damage of the flechette round makes it a devastating close combat weapon, but its weight makes it less than desirable for infantry without strength-enhancing battle dress. This weapon is manufactured in the RC with the characteristics below, but relic weapons have identical performance.

Laser sights are sometimes fitted to this weapon for close actions. Fitting such sights increase the weight of the weapon by 1 kg for the TL-8 version and by 0.5 kg for the TL-10 version, but does not change the recoil values of the weapon.

TL: 8

Ammo: 20x35mm-8

Muzzle Energy: 8063 joules (Tranq: 4838 joules)

Weapon Length: 91 cm

Weapon Weight: 11.921 kg loaded, 11.4812 empty (includes weight of empty box magazine)

Weapon Price: Cr2476

Magazine Weight: 0.9152 kg loaded, 0.4752 kg empty

Magazine Price: Cr5

Ammunition Price: Cr1.76 (Ball), Cr3.52 (HE, DS, Tranq), Cr5.28 (HEAP)

Ammunition Weight: 88 grams per round

Features: Flash suppressor

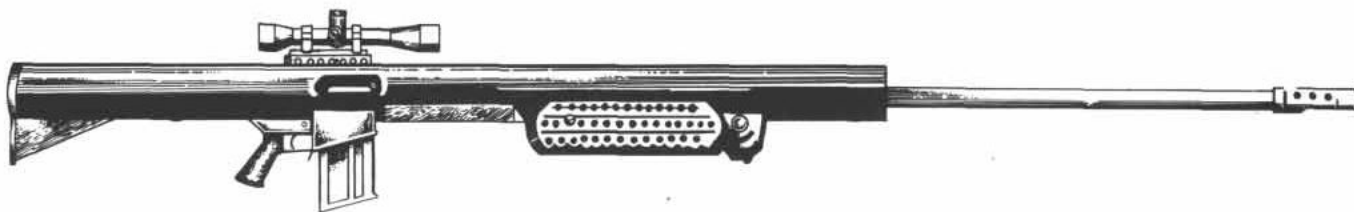
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
20x35mm Ball	SA	6	2-4-Nil	6	5	2	—	210 (210)
20x35mm DS	SA	6	1-3-5	6	5	2	—	250 (252)
20x35mm HE	SA	9	Nil	6	5	2	—	160 (158)
20x35mm HEAP-9	SA	9	2-2-2	6	5	2	—	160 (158)
20x35mm Tranq	SA	-1*	Nil	6	5	2	—	30 (30)
20x35mm Flechette								
Short	SA	2x9 hits**	1	6	5	2	—	70 (70)
Medium-Long	SA (10)	2	1-Nil					

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range.

** A hit indicates that 9 flechettes have hit the target, each with a damage value of 2 and the listed penetration rating.

Note: The (10) following the SA under the ROF column for the medium- to long-range flechette round indicates that each shot is rolled as a 10-round burst.



13mm Sniper Rifle

Although this weapon is rather archaic technologically, CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) chose to retain it in Coalition service because of the widespread availability of the ammunition and its respectable performance as a sniper's weapon. The weapon is bipod-mounted and features a telescopic sight as standard equipment. This weapon is manufactured in the RC with the characteristics below, but relic weapons have identical performance.

TL: 6

Ammo: 13x75mm-6

Muzzle Energy: 18,551 joules (Tranq: 11,131 joules)

Weapon Length: 224 cm

Weapon Weight: 28.9 kg loaded, 27.9 empty (includes weight of empty box magazine)

Weapon Price: Cr4369

Magazine Weight: 1.84 kg loaded, 0.84 kg empty

Magazine Price: Cr9

Ammunition Price: Cr2 (Ball), Cr4 (HE, DS, Tranq), Cr6 (HEAP)

Ammunition Weight: 100 grams per round

Features: Telescopic sight

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
13x75mm Ball	SA	9	2-3-4	14	10	4	—	240 (225)
bipod	SA	9	2-3-4	14	10	2	—	300 (293)
13x75mm DS-8	SA	9	1-2-3	14	10	4	—	300 (300)
bipod	SA	9	1-2-3	14	10	2	—	300 (300)
13x75mm HE	SA	10	Nil	14	10	4	—	210 (191)
bipod	SA	10	Nil	14	10	2	—	270 (248)
13x75mm HEAP-9	SA	10	2-2-2	14	10	4	—	210 (191)
bipod	SA	10	2-2-2	14	10	2	—	270 (248)
13x75mm Tranq	SA	-1*	Nil	14	10	4	—	30 (30)
bipod	SA	-1*	Nil	14	10	2	—	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range.



14.5mm AAR ("Crunch Gun")



9+3	9+6	9+9
8+3	8+6	8+9
7+3	7+6	7+9
6+3	6+6	6+9
5+3	5+6	5+9
4+3	4+6	4+9
3+3	3+6	3+9
2+3	2+6	2+9
1+3	1+6	1+9
0+3	0+6	0+9
<<	•	>>

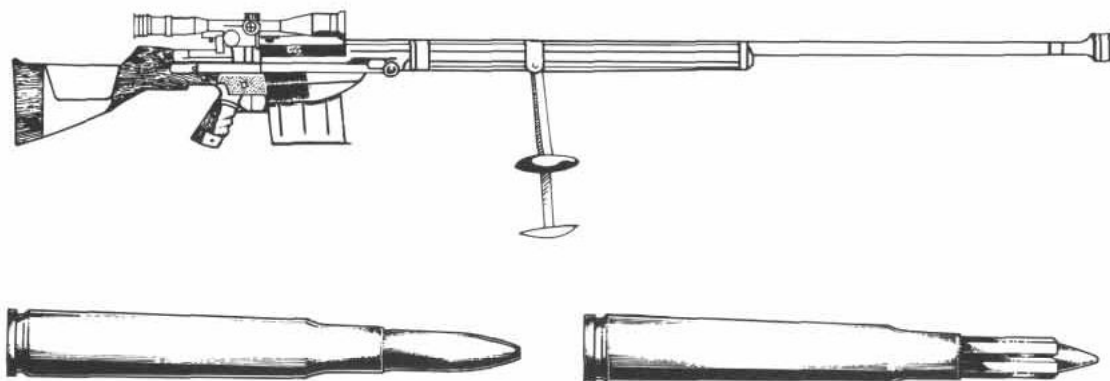


Security Clearance



28-IX-1201

Date



14.5mm AAR (Antiarmor Rifle, a.k.a. "Crunch Gun")

Nicknamed the "Crunch Gun" by the first teams to encounter it, the 14.5x146.7mm AAR represents a serious threat to RCES personnel and equipment. Because of its size, the weapon is normally deployed with a sniper team consisting of a weapon, a sniper, and a spotter, firing from a concealed position. In urban settings, this combination can be particularly effective. When the target is equipped with battle dress, snipers seldom risk using their scarce DS ammunition at longer ranges, but they will often engage less well-armored targets with ball ammunition at ranges in excess of 2000 meters. Electronic equipment and light vehicles are particularly vulnerable.

The origin of the design is unknown, but Guild merchants sell tooling and manufacturing set-ups to enable low-tech worlds to make the weapon and its basic ammo, evidently in order to create a market for Guild-manufactured high-tech ammunition. It would appear that the Guild also provides some form of training as well, as tactical employment of the weapon has proven suspiciously similar on several different worlds.

TL: 5

Ammo: 14.5x146.7mm

Muzzle Energy: 30,114 joules

Weapon Length: 260cm

Weapon Weight: 53.787 kg loaded, 52.577 empty

Weapon Price: Cr8307

5-Round Clip Weight: 1.21 kg

5-Round Clip Price: Cr60.5

Ammunition Price: Cr0.24 (Ball), Cr0.48 (HE, DS, Tranq), Cr0.72 (HEAP)

Features: Bipod, telescopic sight

Ammo weight and price is for a 5-round clip. The clip has effectively no weight or price beyond those of the 5 rounds themselves. The magazine is internal to the weapon.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
14.5x146.7mm Ball	SA	12	2-2-3	17	Si	5	—	230 (210)
Bipod	SA	12	2-2-3	17	Si	3	—	290 (273)

Higher Tech Rounds*:

14.5x146.7mm HE-6	SA	12	Nil	17	Si	5	—	170 (158)
Bipod	SA	12	Nil	17	Si	3	—	220 (205)
14.5x146.7mm DS-8	SA	12	1-1-2	17	Si	5	—	270 (252)
Bipod	SA	12	1-1-2	17	Si	3	—	300 (300)

Short range in parentheses is unrounded iron sight range.

*Manufactured at TL-6+ for enhanced performance, but using lower chamber pressures consistent with the lower tech weapon.

Reformation Coalition Equipment Guide

Power

ON/OFF



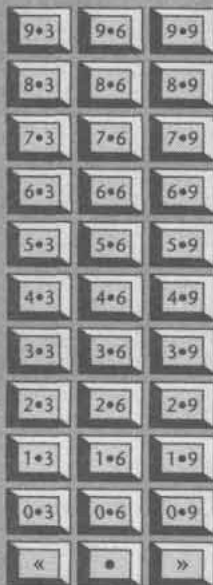
My first encounter with a Crunch Gun was when we were mopping up a DZ near some little burg on Montezuma. A sniper opened up on us, and nailed Janni in the leg. She went down, and me and Hawk-Man went over to see how bad she was hurt. Hawk was first, and he had no more than got up to her when he took one in the head, and collapsed like a rag-doll. I got there a couple of seconds later, and the zipper must have decided to empty his magazine and leave, because three more rounds cratered the pavement in rapid succession. He was just pumping them out, not trying to aim, and the shots went wild all around me as I dove for what little cover was available. Jocko thought he spotted a muzzle flash from a hilltop about half a click away, and the rest of the squad started pumping RAMs over there, while a couple of us drug Janni and Hawk-Man into a building.

Whatever hit Hawk-Man's helmet put a dent in it the size of my fist, but didn't punch it. That must have been the plain vanilla ball round for the Crunch Gun. Janni's thigh plate had a hole in it I could have stuck my finger through.

Hawk-Man woke up with one helluva headache about the same time it took us to get Janni packed up and on the medevac. We secured the DZ and then poked around on the hilltop until we found the sniper's nest. The zipper left so fast he didn't pick up after himself, and we found some expended cartridge cases and the rocks he piled up as cover. We turned the brass over to the INTEL shop. Our heavy assault units have an HMG with a round that big, but zippers aren't supposed to have that kind of firepower. And they don't have the factories to make a DS round, which is what turned part of Janni's femur into chalk dust. I don't know who's selling them that stuff, but whoever it is, I want to find them and tap-dance on their kidneys for a few minutes.



Guild Small Arms

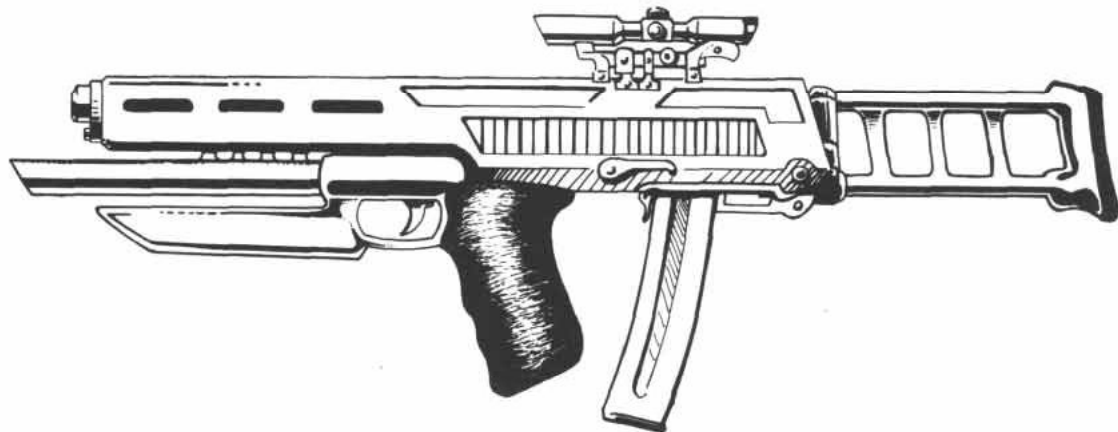


Security Clearance



28 IX 1201

Date



Guild Deck Sweeper Boarding Weapon TL-5

Designed around a pre-Collapse pistol/SMG round and the same 2.5cm low-velocity grenade used by the Coalition, this weapon is primarily used by Guild boarding parties during close combat aboard starships, and for this reason has acquired the nickname "Deck-Sweeper." The 2.5cm grenades are issued on a basis of one or two per weapon, and seem to be primarily designed to deal with locked doors and hatches, although they will also penetrate body armor quite effectively.

The most unique feature of the "Deck-Sweeper," however, is its duplex receiver, which permits two magazines to be loaded side-by-side. The firer may select which magazine is used by flipping a selector switch. This enables the user to load magazines loaded with ball and DS, for example.

Some weapons are equipped with TL-8 laser sights. When fitted with this, the weapon's mass increases by 1 kg, and its price by Cr400. Recoil remains the same, except that Tranq becomes SS: 1, Burst: 1.

TL: 5

Ammo: 9x24mm-5, 2.5cm low-velocity grenades

Muzzle Energy: 856 joules (Tranq: 514 joules)

Weapon Length: 45cm (stock folded) 65 cm (stock open)

Weapon Weight: 3.9056 kg loaded, 3.0956 empty (includes weight of two empty box magazines)

Weapon Price: Cr634.7

Magazine Weight: 0.6048 kg loaded, 0.2448 kg empty

Magazine Price: Cr2

Ammunition Price: Cr0.24 (Ball), Cr0.48 (HE, DS, Tranq), Cr0.72 (HEAP)

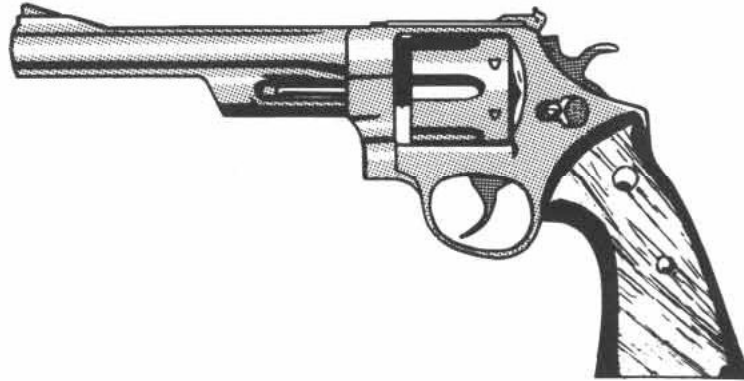
Ammunition Weight: 12 grams per round (9mm), 90 grams each (2.5cm low-velocity grenade)

Features: TL-8 laser sight optional

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
9x24mm Ball	5	2	1-Nil	3/4	30+30	1	2	70 (73)
9x24mm DS	5	2	1-2-Nil	3/4	30+30	1	2	90 (87)
9x24mm HE	5	2	Nil	3/4	30+30	1	2	60 (55)
9x24mm HEAP	5	2	2-2-2	3/4	30+30	1	2	60 (55)
9x24mm Tranq	5	-1*	Nil	3/4	30+30	1	2	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range



Guild 9mm Magnum Revolver

Guild starship crews seem to have a preference for large-bore sidearms, and the 9mm magnum revolver is the most popular. HE and HEAP rounds for this weapon are inferior in penetration and range to ball and DS rounds, and are not manufactured (range is the only advantage DS rounds have). Tranq rounds are manufactured at TL-6, designed to perform to TL-5 parameters.

The 9mm magnum revolver is reserved by the Guild for starship crew sidearms, unlike the 5mm assault rifle (below) which is primarily used for export.

TL: 5
Ammo: 9x33mm-5
Muzzle Energy: 703 joules (Tranq: 422 joules)
Weapon Length: 27 cm
Weapon Weight: 1.234 kg loaded, 1.132 empty

Weapon Price: Cr158
Magazine: None
Ammunition Price: Cr0.68 (Ball), Cr1.36 (HE, DS, Tranq), Cr2.04 (HEAP)
Ammunition Weight: 17 grams per round
Features: None

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
9x33mm Mag Ball	DAR	2	1-Nil	1	6R	3	—	13
9x33mm Mag DS-8	DAR	2	1-Nil	1	6R	3	—	16
9x33mm Mag Tranq-6	DAR	-1*	Nil	1	6R	3	—	10

*1D6-1 points of damage plus tranq effect on TNE, page 350.

5mm Assault Rifle

This weapon is commonly found in use by military forces throughout the Wilds, and is manufactured by various TEDs and by the Mercantile Guild. Both the Guild and the Coalition sell TL-8 ammunition (DS and HEAP rounds) for this weapon.

TL: 7
Ammo: 5x50mm-7
Muzzle Energy: 1584 joules (Tranq: 950 joules)
Weapon Length: 119 cm
Weapon Weight: 3.953 kg loaded, 3.653 empty (includes weight of empty box magazine)

Weapon Price: Cr737
Magazine Weight: 0.552 kg loaded, 0.252 kg empty
Magazine Price: Cr3
Ammunition Price: Cr0.2 (Ball), Cr0.4 (HE, DS, Tranq), Cr0.6 (HEAP)
Ammunition Weight: 10 grams per round
Features: Flash suppressor, bayonet lug, rifle grenade adaptor

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5x50mm Ball-7	5	3	1-Nil	7	30	2	6	50 (52)
5x50mm DS-8	5	3	1-2-Nil	7	30	2	6	60 (62)
5x50mm HE-7	5	3	Nil	7	30	2	6	40 (39)
5x50mm HEAP-8	5	3	2-2-2	7	30	2	6	40 (39)
5x50mm Tranq-7	5	-1*	Nil	7	30	2	5	20 (24)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.



RC 7mm ACR (Advanced Combat Rifle)



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<<	*	>>

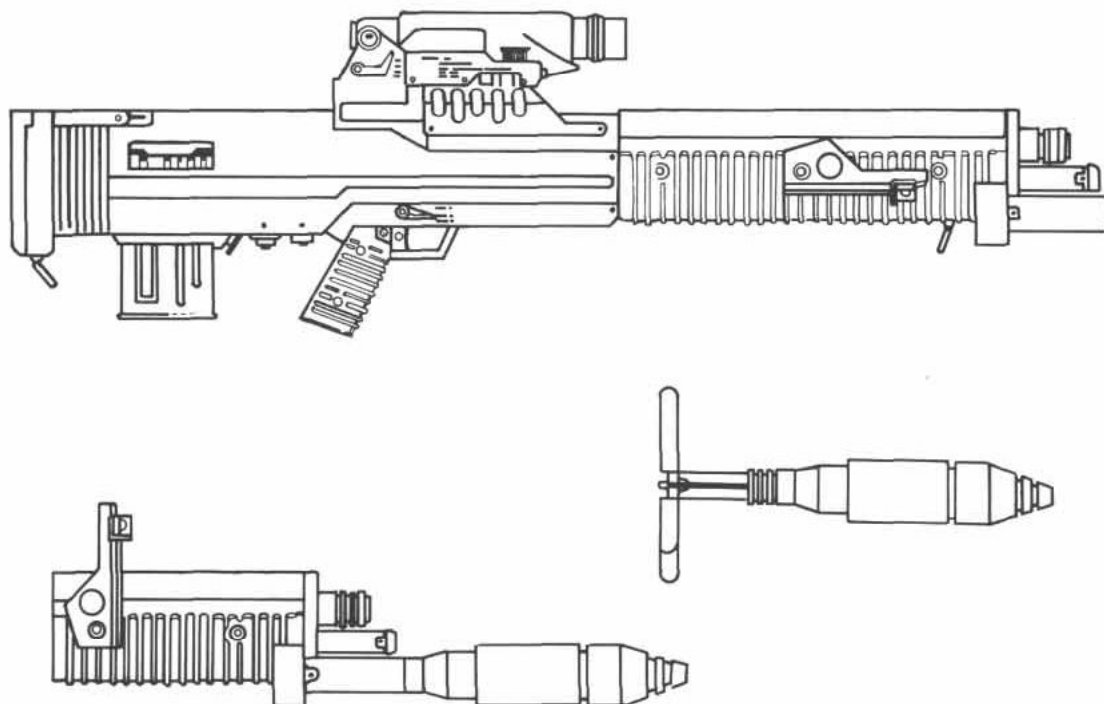


Security Clearance

Yes No

28-IX-1201

Date



Reformation Coalition 7mm ACR (Advanced Combat Rifle)

The 7mm ACR is based around a pre-Collapse Imperial round, the 7x30mm Imperial (ETC), renamed the 7x30mm RC(E), RC(E) standing for "Reformation Coalition (Electrothermal-chemical)." The model depicted on this page is manufactured on Oriflamme for use by that world's armed forces (see below), but similar weapons are in use by most of the Coalition. The rifle is especially popular with Oriflamme's Marines.

The weapon is manufactured with electronic and laser sights, a flash suppressor, bayonet lug, and RAM rifle grenade adapter (for 4cm RAM rifle grenades). A sling is fitted for ease of transport, but has been omitted in the illustration for clarity. The rifle's features are either duplicated on both sides of the rifle for use by both right- and left-handed soldiers, or can be switched to whichever side the individual soldier chooses by a unit armorer (the ambidextrous magazine release and selector switch are examples of the former, the ejection port and bayonet lug are examples of the latter).

When CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) worked out the original design specifications for the 7mm ACR, Oriflamme's representative insisted that the rifle be designed so that 90% of the components could be manufactured at TL-9 (since Oriflamme is a TL-9 world). A weapon with such great potential, she argued, should not be beyond the reach of the world with the largest military force. As a result, the weapon's ammunition, magazine batteries, and laser sight must be imported, but Oriflamme's factories are capable of making the rest of the rifle. For this reason, the ACR is a hybrid weapon, a TL-10 rifle with mostly TL-9 components. The performance of the versions manufactured at TL-9 and those made at TL-10 is the same.

Reformation Coalition Equipment Guide



7x30mm RC(E) ACR

TL: 9/10

Ammo: 7x30mm ETC

Muzzle Energy: 4803 joules (Tranq: 2882 joules)

Weapon Length: 106 cm

Weapon Weight: 6.135 kg loaded, 5.895 empty (includes weight of empty box magazine)

Weapon Price: Cr4097

Magazine Weight: 0.793 kg loaded, 0.553 kg empty

Magazine Price: Cr103

Ammunition Price: Cr0.24 (Ball), Cr0.48 (HE, DS, Tranq), Cr0.72 (HEAP)

Ammunition Weight: 12 grams per round

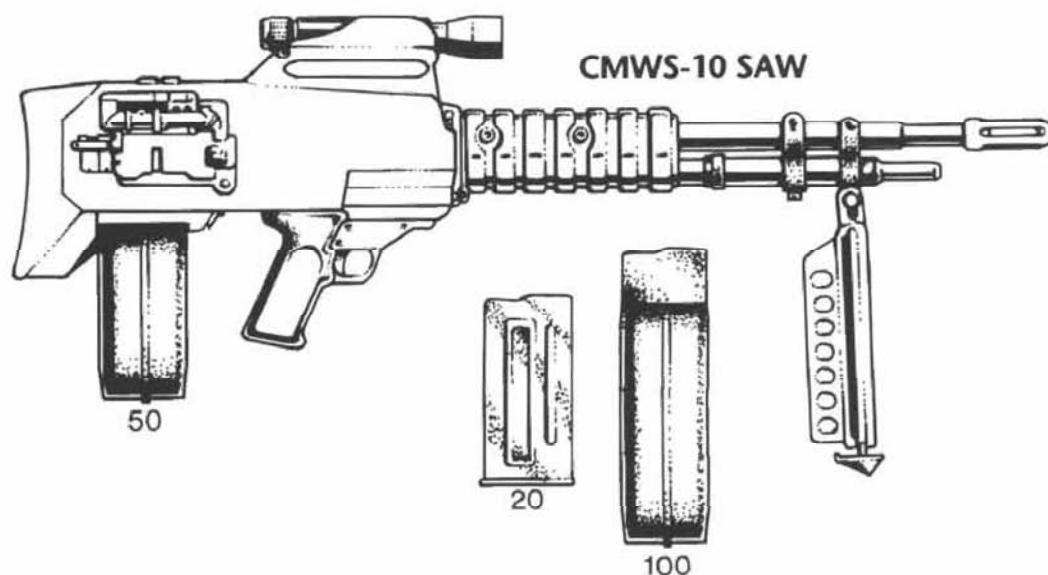
Features: Electronic and laser sights, flash suppressor, bayonet lug, RAM rifle grenade adaptor.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x30mm RC(E) Ball	5	5	2-3-Nil	7	20	1	2	100 (83)
7x30mm RC(E) DS	5	5	1-2-3	7	20	1	2	120 (97)
7x30mm RC(E) HE	5	5	Nil	7	20	1	2	80 (61)
7x30mm RC(E) HEAP	5	5	2-2-2	7	20	1	2	80 (61)
7x30mm RC(E) Tranq	5	-1*	Nil	7	20	1	2	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range is given as short range with standard electronic sight, with unrounded iron sight short range in parentheses.

Coalition Multipurpose Weapons System



Coalition Multipurpose Weapons System, TL-10 (CMWS-10)

The CMWS (pronounced "See Mews") is an effort to produce a family of modular small arms that can be used by all Coalition armed forces in one version or another. The weapon is built around a common receiver assembly, and is assembled into one of five weapon configurations—carbine, rifle, squad automatic weapon (SAW), general-purpose machinegun (GPMG), or vehicle-mounted machinegun (VMMG)—by adding the appropriate barrel, stock, and ammunition feed system. These parts are removable, so that the same set of CMWS components can be disassembled and reassembled into various configurations any number of times.

Reconfiguring a weapon takes significant time, requiring tools and calibration, and is not intended to be done in the heat of combat. However, a force armed with these weapons can easily alter the composition of its weapons before and after combat operations.

The intent is to make the most effective use of the Coalition's limited manufacturing base by reducing the number of different small arms designs that need to be produced, and also to allow the Coalition armed forces to travel light and make the best use of its weapons production capacity. Rather than requiring large inventories of carbines and rifles and automatic weapons, RC armed forces can cover these diverse needs with a smaller pool of CMWS components.

The CMWS uses the standard 7mm RC(E) round, the same as is used in the 7mm ACR. The common CMWS receiver is a heavy self-loading deluxe (multiple automatic rates of fire) receiver. The receiver is capable of taking ammunition from either box magazines or belts (including cassettes).

There are four barrel types which can be fitted: the Light Short barrel (also known as the Carbine barrel), the Light Long barrel (also known as the Rifle barrel), the Heavy Short barrel (this is the same length as the Rifle barrel, so is also called the Heavy Rifle Length, HRL, barrel), and the Heavy Long (or MG) barrel. All are fitted with a flash suppressor and long muzzle brake.

There are three types of stock: bullpup, standard, and pistol grip. All variants are fitted with optic sights, and laser sights can also be added as an option (not included in prices or weight listed below) to any of them.

All variants can take ammo from 20-, 50-, or 100-round box magazines, or from belts (including cassettes). However, the weapons below are only listed with the most useful magazine sizes for their configurations.



Security Clearance



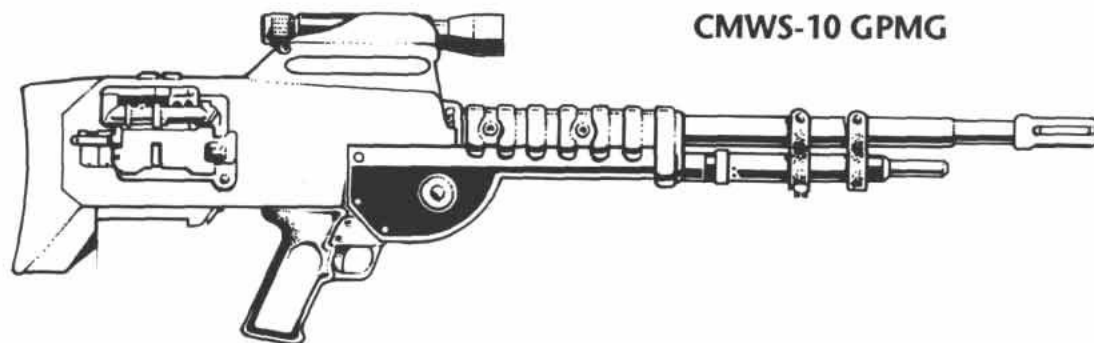
28 IX 1201

Date

Reformation Coalition Equipment Guide

Power

ON/OFF



CMWS-10 GPMG

CMWS Component Price List

Component	Weight (kg)	Price (Cr)
Receiver		
Receiver	5.6	2068
Barrels		
Light Short (Carbine) with flash suppressor, long muzzle brake, bayonet lug, and grenade adapter	1.45	463
Light Long (Rifle) with flash suppressor and long muzzle brake, bayonet lug, and grenade adapter	1.54	582
Heavy Short (HRL) with flash suppressor and long muzzle brake	2.03	863
Heavy Long (MG) with flash suppressor and long muzzle brake	2.16	917
Stocks		
Hollow pistol grip	0.1	28
Bullpup stock	0.1	11
Ammo Feed Systems (Empty)		
20-round box	0.55	106
50-round box	1.34	254
100-round box	2.65	508
Box with battery for 100-round belt	1.9	500
1000-round Cassette	21	120
Sights		
Optic sight	0.1	150
Laser sight	0.5	300
Weapon Mounts		
Bipod	2.5	75
Tripod	8	180

7x30 RC(E) (7x30mm ETC) Ammunition Statistics (per round)

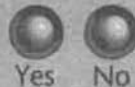
Caliber	TL	Length (mm)	Weight (grams)	AME (Joules)	Price (Cr)
7x30 RC(E) Ball	10	44	12	4,803	0.24
7x30 RC(E) DS	10	44	12	4,803	0.48
7x30 RC(E) HE	10	44	12	4,803	0.48
7x30 RC(E) HEAP	10	44	12	4,803	0.72
7x30 RC(E) Tranq	10	44	12	2,882	0.48



Coalition Multipurpose Weapons System

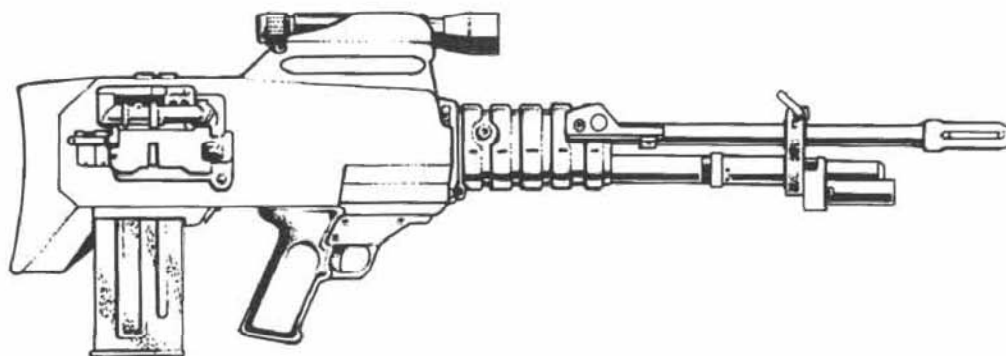


Security Clearance



28 IX 1201

Date



CMWS-10 CARBINE

Bullpup stock, carbine barrel (includes bayonet lug, long muzzle brake, flash suppressor, RAM grenade adapter), optic sights, uses 20-round magazines. (The carbine is limited to the 20-round magazine by the light barrel's inability to stand up to high sustained rates of fire.)

Ammo: 7x30mm ETC

Muzzle Energy: 4607 joules (Tranq: 2764 joules)

Weapon Length: 101 cm

Weapon Weight: 7.853 kg with empty 20-round magazine, 8.093 with loaded 20-round magazine

Weapon Price: Cr2692

Magazine Specifications: 20 rounds 7x30 RC(E), 0.553 kg empty, 0.793 kg loaded, Cr106 for empty magazine with battery

Ammo Price: Cr4.8 for 20 rounds ball; Cr9.6 for 20 rounds DS, HE, or Tranq; Cr14.4 for 20 rounds HEAP

Features: Optic sights, bayonet lug, flash suppressor, RAM grenade adapter


7x30 RC(E) CMWS-10 Carbine

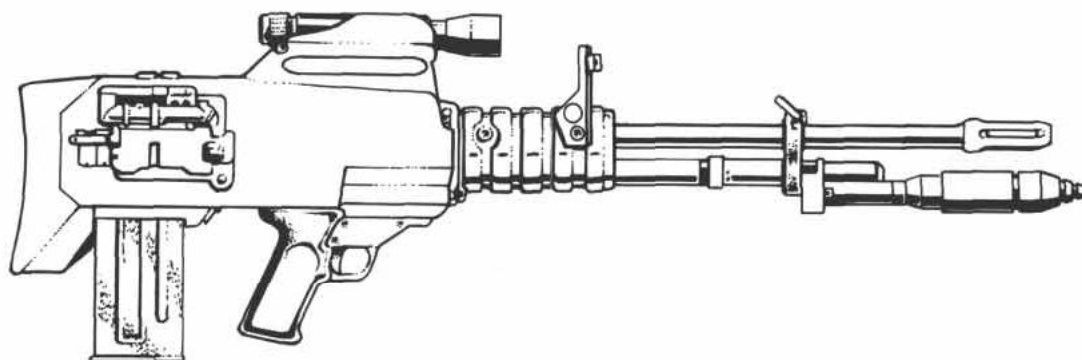
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x30 RC(E) Ball	3/5/10	5	2-3-Nil	6	20	2	2/4/8	(70) 80
7x30 RC(E) DS	3/5/10	5	1-2-3	6	20	2	2/4/8	(84) 100
7x30 RC(E) HE	3/5/10	5	Nil	6	20	2	2/4/8	(52) 60
7x30 RC(E) HEAP	3/5/10	5	2-2-2	6	20	2	2/4/8	(52) 60
7x30 RC(E) Tranq	3/5/10	-1*	Nil	6	20	1	2/4/7	(30) 30

Range is given with optic sights; values in parentheses are unrounded iron sight ranges

Reformation Coalition Equipment Guide

Power 

ON/OFF 



CMWS-10 RIFLE

Bullpup stock, rifle barrel (includes bayonet lug, long muzzle brake, flash suppressor, RAM grenade adapter), optic sights, uses 20-round magazines. (The rifle is limited to the 20-round magazine by the light barrel's inability to stand up to high sustained rates of fire.)

Ammo: 7×30mm ETC

Muzzle Energy: 4803 joules (Tranq: 2882 joules)

Weapon Length: 106 cm

Weapon Weight: 7.943 kg with empty 20-round magazine, 8.183 with loaded 20-round magazine

Weapon Price: Cr2711

Magazine Specifications: 20 rounds 7×30 RC(E), 0.553 kg empty, 0.793 kg loaded, Cr106 for empty magazine with battery

Ammo Price: Cr4.8 for 20 rounds ball; Cr9.6 for 20 rounds DS, HE, or Tranq; Cr14.4 for 20 rounds HEAP

Features: Optic sights, bayonet lug, flash suppressor, RAM grenade adapter

7×30 RC(E) CMWS-10 Rifle

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7×30 RC(E) Ball	3/5/10	5	2-3-Nil	7	20	2	2/4/8	(81) 90
7×30 RC(E) DS	3/5/10	5	1-2-3	7	20	2	2/4/8	(97) 110
7×30 RC(E) HE	3/5/10	5	Nil	7	20	2	2/4/8	(61) 70
7×30 RC(E) HEAP	3/5/10	5	2-2-2	7	20	2	2/4/8	(61) 70
7×30 RC(E) Tranq	3/5/10	-1*	Nil	7	20	1	2/4/7	(30) 30

Range is given with optic sights, values in parentheses are unrounded iron sight ranges

Coalition Multipurpose Weapons System

CMWS-10 SAW

Bullpup stock, bipod, rifle length heavy barrel (includes long muzzle brake and flash suppressor), optic sights, 50- and 100-round magazines standard, but can also use 20-round magazines and belt feed.

Ammo: 7×30mm ETC

Muzzle Energy: 4803 joules (Tranq: 2882 joules)

Weapon Length: 101 cm

Weapon Weight: 11.72 kg with empty 50-round magazine, 12.32 with loaded 50-round magazine

13.03 kg with empty 100-round magazine, 14.23 with loaded 100-round magazine

10.38 kg configured for belt-feed, 11.58 kg with 100-round belt and battery

Weapon Price: Cr3167

Magazine Specifications: 50 rounds 7×30 RC(E), 1.34 kg empty, 1.94 kg loaded, Cr254 for empty magazine with battery

100 rounds 7×30 RC(E), 2.65 kg empty, 3.85 kg loaded, Cr508 for empty magazine with battery

100-round belt 1.2 kg, plus 1.9 kg battery

Ammo Price: Cr12/24 for 50/100 rounds ball; Cr24/48 for 50/100 rounds DS, HE, or Tranq; Cr36/72 for 50/100 rounds HEAP

Features: Optic sights, bipod

7×30mmE CMWS-10 SAW

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7×30 RC(E) Ball	3/5/10	S	2-3-Nil	6	50	1	2/3/7	(81) 90
bipod	3/5/10	S	2-3-Nil	6	50	1	1/2/4	(105) 120
7×30 RC(E) Ball	3/5/10	S	2-3-Nil	6	100	1	2/3/7	(81) 90
bipod	3/5/10	S	2-3-Nil	6	100	1	1/2/4	(105) 120
7×30 RC(E) Ball	3/5/10	S	2-3-Nil	6	100B	1	2/4/7	(81) 90
bipod	3/5/10	S	2-3-Nil	6	100B	1	1/2/4	(105) 120
7×30 RC(E) DS	3/5/10	S	1-2-3	6	50	1	2/3/7	(97) 110
bipod	3/5/10	S	1-2-3	6	50	1	1/2/4	(126) 160
7×30 RC(E) DS	3/5/10	S	1-2-3	6	100	1	2/3/7	(97) 110
bipod	3/5/10	S	1-2-3	6	100	1	1/2/4	(126) 160
7×30 RC(E) DS	3/5/10	S	1-2-3	6	100B	1	2/4/7	(97) 110
bipod	3/5/10	S	1-2-3	6	100B	1	1/2/4	(126) 160
7×30 RC(E) HE	3/5/10	S	Nil	6	50	1	2/3/7	(61) 70
bipod	3/5/10	S	Nil	6	50	1	1/2/4	(79) 90
7×30 RC(E) HE	3/5/10	S	Nil	6	100	1	2/3/7	(61) 70
bipod	3/5/10	S	Nil	6	100	1	1/2/4	(79) 90
7×30 RC(E) HE	3/5/10	S	Nil	6	100B	1	2/4/7	(61) 70
bipod	3/5/10	S	Nil	6	100B	1	1/2/4	(79) 90
7×30 RC(E) HEAP	3/5/10	S	2-2-2	6	50	1	2/3/7	(61) 70
bipod	3/5/10	S	2-2-2	6	50	1	1/2/4	(79) 90
7×30 RC(E) HEAP	3/5/10	S	2-2-2	6	100	1	2/3/7	(61) 70
bipod	3/5/10	S	2-2-2	6	100	1	1/2/4	(79) 90
7×30 RC(E) HEAP	3/5/10	S	2-2-2	6	100B	1	2/4/7	(61) 70
bipod	3/5/10	S	2-2-2	6	100B	1	1/2/4	(79) 90

Range is given with optic sights; values in parentheses are unrounded iron sight ranges

CMWS-10 GPMG (TRIPOD MOUNT)

Bullpup stock, tripod, machinegun barrel (includes long muzzle brake and flash suppressor), optic sights, belt feed standard, but can also use 50- and 100-round magazines.

Ammo: 7×30mm ETC

Muzzle Energy: 4999 joules (Tranq: 4499 joules)

Weapon Length: 106 cm

Weapon Weight: 8.01 kg configured for belt feed, 11.11 with 100-round belt and battery

Weapon Weight on tripod: 16.01 kg configured for belt feed, 19.11 with 100-round belt and battery

Weapon Price: Cr3146

Tripod Specifications: 8 kg, Cr180

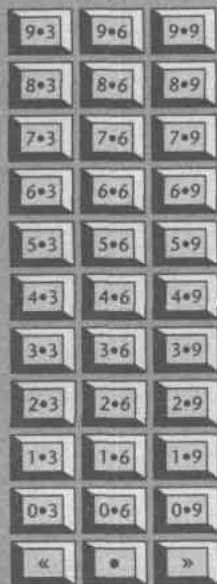
Magazine Specifications: 50 rounds 7×30 RC(E), 1.34 kg empty, 1.94 kg loaded, Cr254 for empty magazine with battery

100 rounds 7×30 RC(E), 2.65 kg empty, 3.85 kg loaded, Cr508 for empty magazine with battery

100-round belt 1.2 kg, plus 1.9 kg battery, Cr500 for battery, ammo price below

Ammo Price: Cr12/24 for 50/100 rounds ball; Cr24/48 for 50/100 rounds DS, HE, or Tranq; Cr36/72 for 50/100 rounds HEAP

Features: Optic sights, tripod



Security Clearance



28-IX-1201

Date

7x30 RC(E) CMWS-10 GPMG (Tripod Mount)

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x30 RC(E) Ball	3/5/10	5	2-3-Nil	7	50	2	2/4/7	(88) 100
tripod	3/5/10	5	2-3-Nil	7	50	1	1/1/2	(176) 200
7x30 RC(E) Ball	3/5/10	5	2-3-Nil	7	100	1	2/4/7	(88) 100
tripod	3/5/10	5	2-3-Nil	7	100	1	1/1/2	(176) 200
7x30 RC(E) Ball	3/5/10	5	2-3-Nil	7	100B	2	2/4/8	(88) 100
tripod	3/5/10	5	2-3-Nil	7	100B	1	1/1/2	(176) 200
7x30 RC(E) DS	3/5/10	5	1-2-3	7	50	2	2/4/7	(105) 120
tripod	3/5/10	5	1-2-3	7	50	1	1/1/2	(210) 240
7x30 RC(E) DS	3/5/10	5	1-2-3	7	100	1	2/4/7	(105) 120
tripod	3/5/10	5	1-2-3	7	100	1	1/1/2	(210) 240
7x30 RC(E) DS	3/5/10	5	1-2-3	7	100B	2	2/4/8	(105) 120
tripod	3/5/10	5	1-2-3	7	100B	1	1/1/2	(210) 240
7x30 RC(E) HE	3/5/10	5	Nil	7	50	2	2/4/7	(66) 80
tripod	3/5/10	5	Nil	7	50	1	1/1/2	(132) 150
7x30 RC(E) HE	3/5/10	5	Nil	7	100	1	2/4/7	(66) 80
tripod	3/5/10	5	Nil	7	100	1	1/1/2	(132) 150
7x30 RC(E) HE	3/5/10	5	Nil	7	100B	2	2/4/8	(66) 80
tripod	3/5/10	5	Nil	7	100B	1	1/1/2	(132) 150
7x30 RC(E) HEAP	3/5/10	5	2-2-2	7	50	2	2/4/7	(66) 80
tripod	3/5/10	5	2-2-2	7	50	1	1/1/2	(132) 150
7x30 RC(E) HEAP	3/5/10	5	2-2-2	7	100	1	2/4/7	(66) 80
tripod	3/5/10	5	2-2-2	7	100	1	1/1/2	(132) 150
7x30 RC(E) HEAP	3/5/10	5	2-2-2	7	100B	2	2/4/8	(66) 80
tripod	3/5/10	5	2-2-2	7	100B	1	1/1/2	(132) 150

Range is given with optic sights; values in parentheses are unrounded iron sight ranges

CMWS-10 VEHICLE MG

Pistol grip, machinegun barrel (includes long muzzle brake and flash supressor), optic sights, cassette-feed standard, but can also use belt feed and 20-, 50- and 100-round magazines.

Ammo: 7x30mm ETC

Muzzle Energy: 4999 joules (Tranq: 4499 joules)

Weapon Length: 101 cm

Weapon Weight: 29.01 kg with empty 1000-round cassette, 41.01 kg with loaded 1000-round cassette

8.01 kg configured for belt feed, 11.11 with 100-round belt and battery

Weapon Price: Cr3163

Magazine Specifications: 1000-round 7x30 RC(E) cassette, 21 kg empty, 33 kg loaded, Cr5120 for empty magazine with battery

100-round belt 1.2 kg, plus 1.9 kg battery, battery costs Cr500

Ammo Price: Cr240 for 1000 rounds ball; Cr480 for 1000 rounds DS, HE, or Tranq; Cr720 for 1000 rounds HEAP

Features: Optic sights

7x30 RC(E) CMWS-10 Vehicle MG

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
7x30 RC(E) Ball	3/5/10	5	2-3-Nil	6	1000C	—	—	(196) 230
7x30 RC(E) DS	3/5/10	5	1-2-3	6	1000C	—	—	(234) 270
7x30 RC(E) HE	3/5/10	5	Nil	6	1000C	—	—	(146) 170
7x30 RC(E) HEAP	3/5/10	5	2-2-2	6	1000C	—	—	(146) 170

Range is given with optic sights; values in parentheses are unrounded iron sight ranges

Shotguns



Double-Barreled Shotgun

Originally developed as a sporting gun, double-barreled shotguns are sometimes found in use by poorly equipped militias and irregular military units. Short range damage is impressive, but the ability to fire only two shots before reloading makes the weapon unsuitable for conventional military use.

TL: 4

Ammo: 18x70mm-4

Muzzle Energy: 3258 joules (Tranq: 1955 joules)

Weapon Length: 102 cm

Weapon Weight: 6.099 kg loaded, 5.993 empty

Weapon Price: Cr266.9

Magazine: None. Each barrel contains one individually inserted round.

Ammunition Price: Cr0.53 (Ball), Cr1.06 (HE, DS, Tranq), Cr1.59 (HEAP)

Ammunition Weight: 53 grams per round

Features: None

Round	ROF†	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
18x70mm Slug	SA	4	3-Nil	6	2i	3	—	50 (54)
18x70mm Shot Short	SA	9	Nil	6	2i	3	—	30 (31)
Medium	SA (10)	1	Nil					
18x70mm DS	SA	4	1-3-Nil	6	2i	3	—	70 (65)
18x70mm HE	SA	5	Nil	6	2i	3	—	40 (41)
18x70mm HEAP	SA	5	2-2-2	6	2i	3	—	40 (41)
18x70mm Tranq-6	SA	-1*	Nil	6	2i	3	—	30 (30)

† The weapon is rated SA to enable both barrels to be fired in the same turn.

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range

Note: The (10) following the SA under the ROF column for the medium-range shot round indicates that each shot is rolled as a 10-round burst.

Double-Barreled Sawed-Off Shotgun

This weapon is sometimes called a "whippit gun" because it is often concealed under clothing (sometimes in improvised holsters) and the user must "whip it out." Cutting off the barrels and changing the stock to a pistol grip reduces the weapon's length and makes it more readily concealable, but a considerable price is paid in range.

Sawed-off shotguns are often used by criminals, but some Free Trader starship crew prefer them to pistols because of the high short-range damage of shot rounds, and the lack of range is not a detriment in the close quarters of a starship.

TL: 4

Ammo: 18x70mm-4

Muzzle Energy: 1488 joules (Tranq: 893 joules)

Weapon Length: 33 cm

Weapon Weight: 3.539 kg loaded, 3.433 empty

Weapon Price: Cr71

Magazine: None. Each barrel contains one individually inserted round.

Ammunition Price: Cr0.53 (Ball), Cr1.06 (HE, DS, Tranq), Cr1.59 (HEAP)

Ammunition Weight: 53 grams per round

Features: None

Round	ROF†	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
18x70mm Slug	SA	3	Nil	2	2i	3	—	3
18x70mm Shot Short	SA	9	Nil	2	2i	3	—	2
Medium	SA (10)	1						
18x70mm DS-8	SA	3	2-Nil	2	2i	3	—	4
18x70mm HE-6	SA	5	Nil	2	2i	3	—	2
18x70mm HEAP-8	SA	5	2-2-2	2	2i	3	—	2
18x70mm Tranq-6	SA	-1*	Nil	2	2i	2	—	4

† The weapon is rated SA to enable both barrels to be fired in the same turn.

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range

Note: The (10) following the SA under the ROF column for the medium-range shot round indicates that each shot is rolled as a 10-round burst.

9*3 9*6 9*9
8*3 8*6 8*9
7*3 7*6 7*9
6*3 6*6 6*9
5*3 5*6 5*9
4*3 4*6 4*9
3*3 3*6 3*9
2*3 2*6 2*9
1*3 1*6 1*9
0*3 0*6 0*9
« »

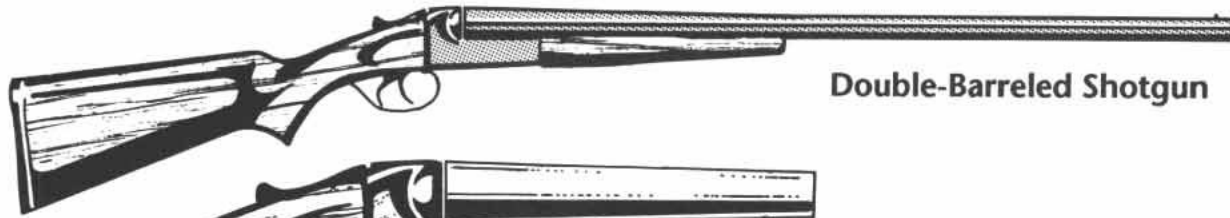


Security Clearance



28 IX-1201

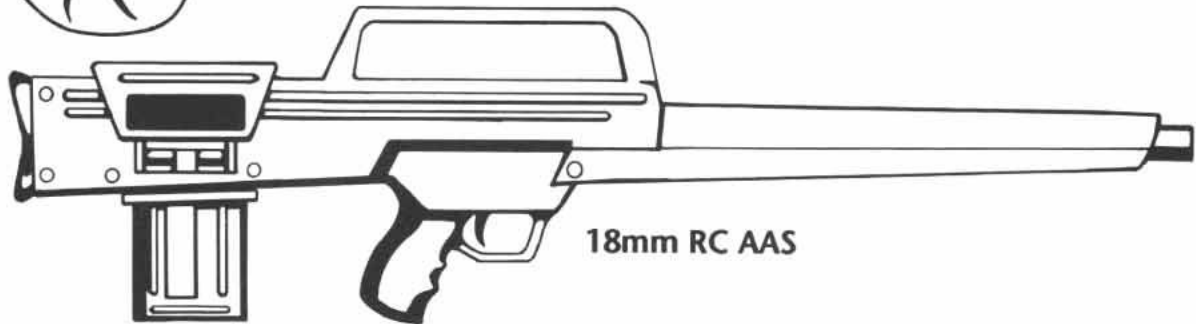
Date



Double-Barreled Shotgun



Double-Barreled Sawed-Off Shotgun



18mm RC AAS

18mm RC AAS (Automatic Assault Shotgun)

Manufactured primarily on Aurora, this bullpup-configuration weapon is another new design by CSAARC, unrelated to any pre-Collapse weapon. The weapon is normally carried on a sling that enables it to be fired from the hip using the attached laser sight. The performance of this weapon is respectable (the shot round will penetrate AV 1 at short range). For close fighting where range is not an important consideration (such as is found in boarding actions or urban locales), this is the small arm of choice for Coalition troops.

TL: 10

Ammo: 18x90mm caseless

Muzzle Energy: 4931 joules (Tranq: 2959 joules)

Weapon Length: 91 cm

Weapon Weight: 8.992 kg loaded, 7.612 empty (includes weight of empty box magazine)

Weapon Price: Cr2457

Magazine Weight: 2.3736 kg loaded, 0.9936 kg empty

Magazine Price: Cr10

Ammunition Price: Cr0.69 (Shot, Slug), Cr1.38 (HE, DS, Tranq), Cr2.07 (HEAP)

Ammunition Weight: 69 grams per round

Features: Gyroscopic recoil compensation, optic and laser sights

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
18x70mm Slug	3	5	3-4-Nil	6	20	2	3	30 (28)
18x70mm Short Shot	3	2x6**	1	6	20	2	3	20 (20)
Medium	3 (5)	2	Nil					
18x70mm DS	3	5	2-3-4	6	20	2	3	40 (34)
18x70mm HE	3	8	Nil	6	20	2	3	20 (21)
18x70mm HEAP	3	8	2-2-2	6	20	2	3	20 (21)
18x70mm Tranq	3	-1*	Nil	6	20	2	3	15 (13)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

** A hit indicates that 6 pellets have hit the target, each with a damage value of 2 and the listed penetration rating.

Range in parentheses is unrounded iron sight range.

Note: The (5) following the SA under the ROF column for the medium-range shot round indicates that each shot is rolled as a 5-round burst.

Gauss Small Arms



4mm Gauss Rifle

As is mentioned on page 48, all gauss weapons in Coalition service use the old Imperial standard 4mm gauss ammunition. In the gauss rifle, the 0.5 gram round is shot from the barrel at approximately 3740 meters per second, although in official references this is rounded to 3500 mps, as seen in the official ammunition designation "4x20mm/35."

The gauss rifle is highly prized with Coalition ground forces because of its high rate of fire and large magazine capacity made possible by the compactness of its ammunition. The round itself can be manufactured at TL-10 and up, a decided advantage in the Coalition, where high-tech manufacturing facilities are at a premium.

TL: 12

Ammo: 4x20mm/35

Muzzle Energy: 3500 joules (Tranq: 2100 joules), required energy: 7000 joules

Weapon Length: 76.4 cm

Weapon Weight: 4.076 kg loaded, 4.056 empty (includes weight of empty box magazine)

Weapon Price: Cr1063

Magazine Weight: 1.713 kg loaded, 1.693 kg empty

Magazine Price: Cr4

Ammunition Price: Cr0.01 (Dart), Cr0.02 (HE, Tranq), Cr0.03 (HEAP)

Ammunition Weight: 0.5 grams per round

Features: Bayonet lug, optic sights, RAM rifle grenade adaptor

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
4x20mm/35 dart	5/10	4	1-2-Nil	5	40	2	4/9	100 (85)
4x20mm/35 HE	5/10	4	Nil	5	40	2	4/9	70 (64)
4x20mm/35 HEAP	5/10	4	2-2-2	5	40	2	4/9	70 (64)
4x20mm/35 Tranq	5/10	-1*	Nil	5	40	2	4/7	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is unrounded iron sight range

9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	.	>

▲

▼

Security Clearance

Yes No

28 IX 1201

Date



4mm Gauss SAW

The 4mm gauss SAW is a CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) design intended to fill the gap between the 4mm gauss rifle and the VRF gauss gun. The weapon is equipped with optic sights, a bipod for stable firing, and a 100-round detachable box magazine, and has a muzzle velocity of 5000 meters per second.

TL: 12

Ammo: 4x20mm/50

Muzzle Energy: 6250 joules (Tranq: 3750 joules), Required Energy: 11,250 joules

Weapon Length: 92 cm

Weapon Weight: 14.11 kg loaded, 14.06 empty (includes weight of empty box magazine)

Weapon Price: Cr1412

Magazine Weight: 7.58 kg loaded, 7.53 kg empty

Magazine Price: Cr16

Ammunition Price: Cr0.01 (Dart), Cr0.02 (HE, Tranq), Cr0.03 (HEAP)

Ammunition Weight: 0.5 grams per round

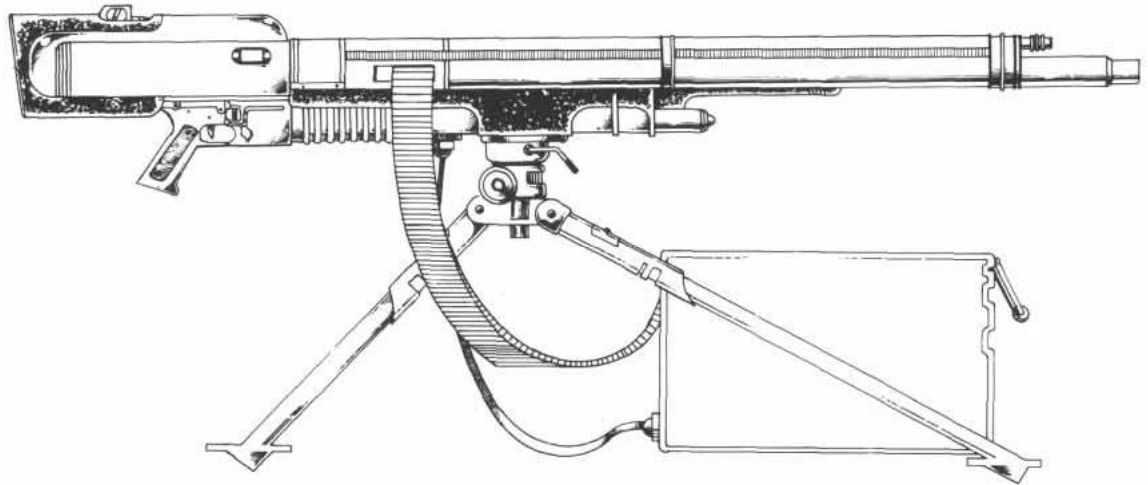
Features: Optic sight, bipod

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
4x20mm/50 Dart	5/10	5	1-3-Nil	6	100	2	4/8	130 (114)
Bipod	5/10	5	1-3-Nil	6	100	1	2/4	170 (148)
4x20mm/50 HE	5/10	6	Nil	6	100	2	4/8	100 (86)
Bipod	5/10	6	Nil	6	100	1	2/4	130 (112)
4x20mm/50 HEAP	5/10	6	2-2-2	6	100	2	4/8	100 (86)
Bipod	5/10	6	2-2-2	6	100	1	2/4	130 (112)
4x20mm/50 Tranq	5/10	1*	Nil	6	100	2	3/8	30 (30)
Bipod	5/10	1*	Nil	6	100	1	2/4	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Range in parentheses is iron sight range

VRF Gauss Gun



VRF Gauss Gun (Man-Portable Field Mount)

As is mentioned on page 48, all gauss weapons in Coalition service use the old Imperial standard 4mm gauss ammunition. In the gauss rifle, the 0.5-gram round is shot from the barrel at approximately 6000 meters per second, as reflected by the "60" in the ammunition designation. This velocity grazes the upper limit for such weapons, and gives the VRF gauss gun very good performance, but at a cost of a very high weight.

The large size of the battery needed to power this weapon's high rate of fire means that VRF gauss guns are largely limited to static positions such as bunkers and the like. The man-portable weapon can use the larger cassettes of the vehicle-mounted version, but must have an outside power source (0.027 Mj) as the vehicle cassettes contain no battery.

Coalition-manufactured versions of this weapon are identical to Imperial relic weapons.

TL: 10

Ammo: 4x20mm/60

Muzzle Energy: 9000 joules (Tranq: 5400 joules), Required Energy: 27,000 joules

Weapon Length: 243 cm

Weapon Weight: 162.43 kg loaded, 162.18 empty (includes weight of empty cassette)

Weapon Price: Cr5563

Cassette Weight: 137.25 kg loaded, 137 kg empty

Cassette Price: Cr1370

Ammunition Price: Cr0.01 (Dart), Cr0.02 (HE, Tranq), Cr0.03 (HEAP)

Ammunition Weight: 0.5 grams per round

Features: Gyro compensation

Tripod Weight: 22 kg

Tripod Price: Cr320

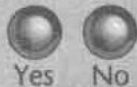
Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst†	
4x20mm/60 Dart	50	6	1-3-5	16	500C	1	22	150 (152)
Tripod	50	6	1-3-5	16	500C	1	6	300 (300)
4x20mm/60 HE	50	7	Nil	16	500C	1	22	110 (114)
Tripod	50	7	Nil	16	500C	1	6	230 (228)
4x20mm/60 HEAP	50	7	2-2-2	16	500C	1	22	110 (114)
Tripod	50	7	2-2-2	16	500C	1	6	230 (228)
4x20mm/60 Tranq	50	-1*	Nil	16	500C	1	22	30 (30)
Tripod	50	-1*	Nil	16	500C	1	6	30 (30)

† The non-tripod recoil number is for those who wish to attempt off-hand firing using strength enhancements.

*1D6-1 points of damage plus tranq effect on TNE, page 350.

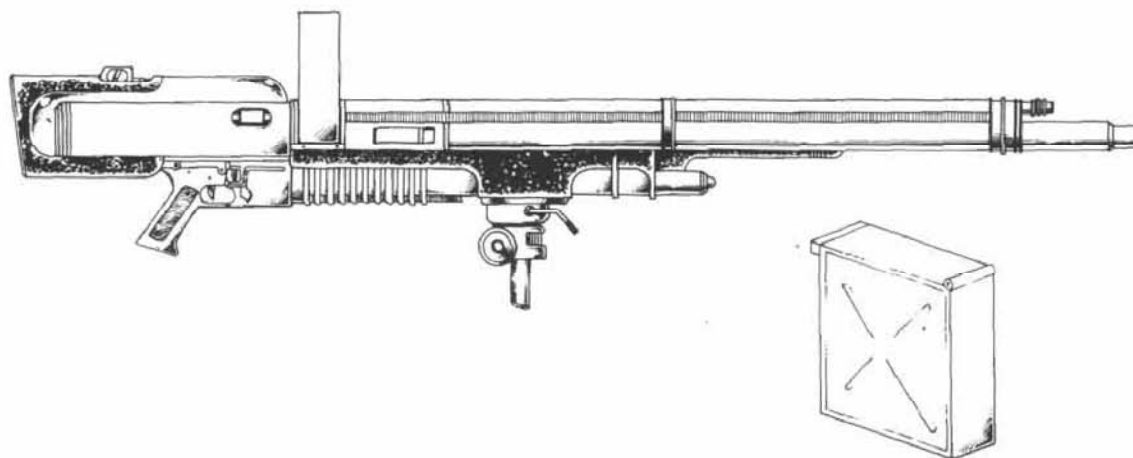
Short range in parentheses is the unrounded iron sight range.

Security Clearance



28-IX-1201

Date



VRF Gauss Gun (Vehicular Mount)

The vehicle-mounted version of the VRF gauss gun uses 30,000-round cassettes and draws power from the vehicle's power plant (1.35 MW), thus obviating the need for a battery in the ammunition cassette. (The illustration above, when compared to the man-portable version on the facing page, shows the tremendous bulk savings by not relying on a battery. If this weapon used a battery, it would mass 8.1 tonnes.) The vehicle-mounted VRF gauss gun can use the smaller cassettes of the man-portable version.

Relic Imperial and new-build Coalition versions of this weapon are identical in all respects.

TL: 10

Ammo: 4x20mm/60

Muzzle Energy: 9000 joules (Tranq: 5400 joules), Required Energy: 27,000 joules

Weapon Length: 243 cm

Weapon Weight: 42.18 kg loaded, 27.18 empty (includes weight of empty cassette)

Weapon Price: Cr3913

Cassette Weight: 17 kg loaded, 2 kg empty

Cassette Price: Cr20

Ammunition Price: Cr0.01 (Dart), Cr0.02 (HE, Tranq), Cr0.03 (HEAP)

Ammunition Weight: 0.5 grams per round

Features: Gyro compensation

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
4x20mm/60 Dart	50	6	1-3-5	16	30000C	†	†	300 (300)
4x20mm/60 HE	50	7	Nil	16	30000C	†	†	230 (228)
4x20mm/60 HEAP	50	7	2-2-2	16	30000C	†	†	230 (228)
4x20mm/60 Tranq	50	-1*	Nil	16	30000C	†	†	30 (30)

† Fired from a vehicle mount, this weapon has negligible recoil and tripod range.

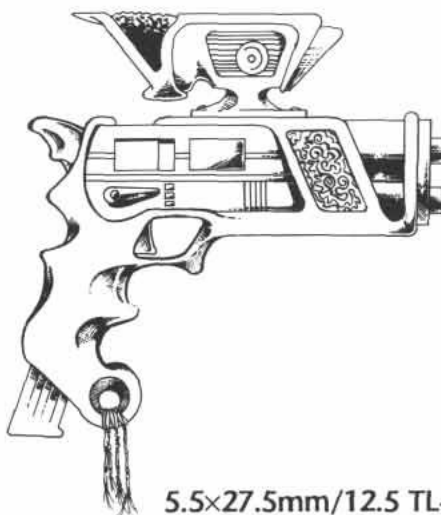
*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.

Recording Ammo Consumption

Because of the large number of rounds in the VRF gauss gun's ammunition cassette, you may wish to create a special ammunition form for it by photocopying six 100-round forms, indicating that one box on the ammo form represents a burst of 50 rather than a single round. Otherwise, the ammunition record form will require 30,000 boxes!

Ithklur Small Arms



5.5x27.5mm/12.5 TL-14 Gauss

The 5.5mm round was the standard Hiver gauss round before the Collapse, and has continued to be such to this day. The Hivers themselves dislike combat, and leave it to their subject race auxiliaries, primarily the Ithklur, for whom the 5.5mm-caliber weapons were designed.

The Ithklur are larger than humans (averaging twice the body mass), and whose joints articulate differently. CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) field tests indicate that the most common human problems when firing Ithklur weapons are in moving the various selector switches and knobs and aligning the sights properly (by contrast, the most common Ithklur complaint about human weapons is that things snap off them too easily). All direct fire tasks by humans using Ithklur weapons are increased by one difficulty level.

Ithklur weapons also have a distinctive ornate look, see discussion on facing page.

5.5mm TL-14 Gauss Pistol (Ithklur)

The 5.5mm gauss pistol is manufactured only in Hiver Space, being TL-14, and as such is very rare in the Coalition. Humans find the handgrip of this pistol slightly oversize, and firing it requires a little practice, as the weapon is built for Ithklur hands. At a muzzle velocity of 2500 mps, the weapon's performance is impressive, but it is almost two and a half times as heavy as the 4mm gauss pistol, and few humans care for it due to its large size.

When fitted with the optional TL-10 laser sight, the weight of the weapon is increased by 0.5 kg, the price is increased by Cr300, and the recoil becomes SS: 2, Burst — for all rounds.

TL: 14

Ammo: 5.5x27.5mm/25

Muzzle Energy: 4094 joules (Tranq: 2456 joules), Required Power: 6550 joules

Weapon Length: 18.6 cm

Weapon Weight: 1.913 kg loaded, 1.879 empty (includes weight of empty box magazine)

Weapon Price: Cr499.4

Magazine Weight: 0.739 kg loaded, 0.705 kg empty

Magazine Price: Cr2

Ammunition Price: Cr0.03 (Dart), Cr0.06 (HE, Tranq), Cr0.18 (HEAP)

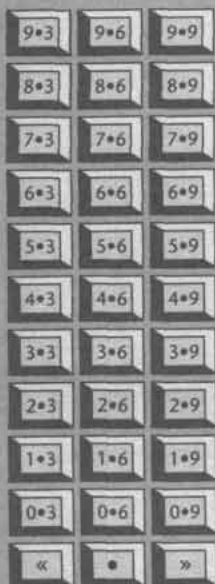
Ammunition Weight: 1.31 grams per round

Features: Optic sights, laser sight optional

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5.5x27.5mm Dart	SA	4	1-2-Nil	2	26	3	—	30 (26)
5.5x27.5mm HE	SA	5	Nil	2	26	3	—	20 (19)
5.5x27.5mm HEAP	SA	5	2-2-2	2	26	3	—	20 (19)
5.5x27.5mm Tranq	SA	-1*	Nil	2	26	2	—	14 (12)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.

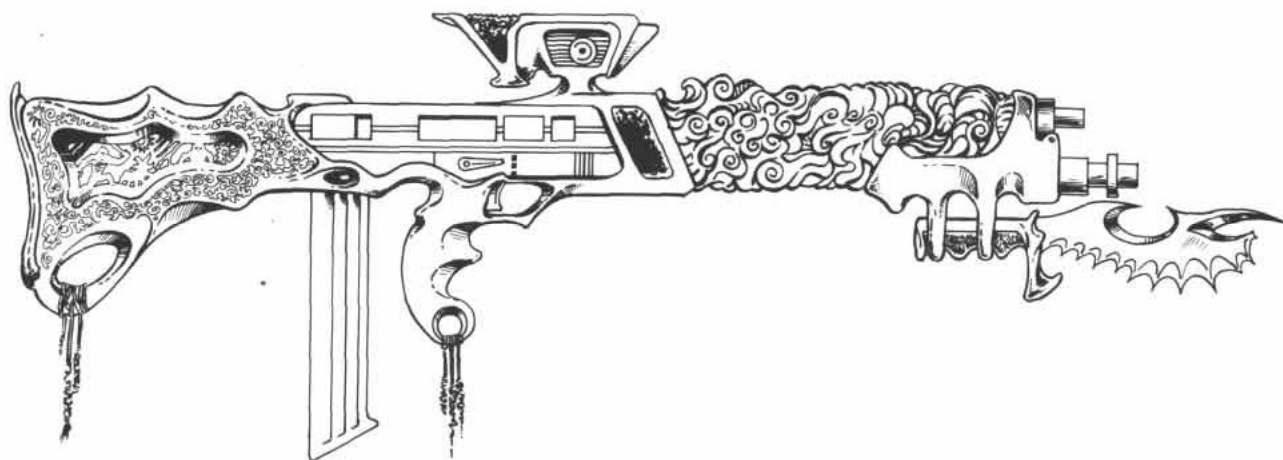


Security Clearance



28-IX-1201

Date



5.5mm TL-14 Gauss Rifle (Ithklur)

This weapon is the standard weapon of the Ithklur Marines in Hiver service. It uses the same 5.5mm gauss ammunition as the gauss pistol (see facing page), but fires it at a muzzle velocity of 3500 meters per second. The 5.5mm rifle is larger than normal human weapons, but not excessively so, and the increased mass makes recoil easier to deal with.

When fitted with the optional TL-10 laser sight, the weight of the weapon is increased by 0.5 kg, the price is increased by Cr300, and the recoil remains the same.

The Ithklur are well-known as the Hivers' elite natural shock troops, which in itself is remarkable because the Hivers are well-known for eliminating the aggressive tendencies of their subject races. Either the Hivers elected to cultivate the Ithklur aggressiveness in this one case, or the Ithklur's current "boisterous" tendencies are the remains of truly epic violent tendencies. Those who study Hiver psychohistorical manipulation speculate that the latter is in fact the case, and that the intricate Ithkluri sense of martial aesthetics is an artifact of Hiver efforts to channel Ithklur tendencies into less energetic pursuits. This martial aesthetic is seen in Ithklur pastimes such as ritualized full-contact "ballet," but is nowhere more evident than in the design of Ithklur weapons. Each Ithklur weapon is unique, with ornate brightly colored fittings carved and painted by its owner. These carvings are highly symbolic, representing events or concepts of talismanic significance to its owner, and are modified after each battle in which they are used. Thus, the trained Ithklur eye can tell by looking at a weapon's ornamentation which battles it was used in, how well its owner performed, and so on. Ithklur art, therefore, consists entirely of personal weapons and military vehicles, embellished with breathtaking examples of Ithklur decorative craftsmanship.

Much of this ornamentation is decidedly non-tactical, such as the bright colors of rifle stocks and barrel housings, and the noisy strings of beads. Each Ithklur battle is preceded by the solemn ceremony of "darking" the weapons, in which the bright colors are covered with tactical camouflage, and beads are either removed or coated with noise-damping grease. It is probably no accident that a subdued Ithklur weapon, festooned with camouflaged decoration, is quite well-camouflaged, as the distinctive straight lines present on the weapons of other races are not present. Once darked, Ithklur weapons are not stripped and restored to their gleaming glory until the battle, campaign, or war has been brought to its intended conclusion. Thus the sight of Ithklur units darking their weapons for war can be a very intimidating experience indeed. (The bayonet illustrated is for ceremonial use only.)

TL: 14

Ammo: 5.5x27.5mm/35

Muzzle Energy: 8024 joules (Tranq: 4814 joules), Required Power: 12,838 joules

Weapon Length: 66 cm

Weapon Weight: 6.575 kg loaded, 6.477 empty (includes weight of empty box magazine)

Weapon Price: Cr1044

Magazine Weight: 4.012 kg loaded, 3.914 kg empty

Magazine Price: Cr8

Ammunition Price: Cr0.03 (Dart), Cr0.06 (HE, Tranq), Cr0.18 (HEAP)

Ammunition Weight: 1.31 grams per round

Features: Optic sights, gyroscopic compensation, bayonet lug, RAM rifle grenade adaptor; laser sight optional

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		
						SS	Burst	Short Range
5.5mm Dart	5/10	6	1-3-5	4	75	1	2/4	120 (105)
5.5mm HE	5/10	7	Nil	4	75	1	2/4	90 (79)
5.5mm HEAP	5/10	7	2-2-2	4	75	1	2/4	90 (79)
5.5mm Tranq	5/10	-1*	Nil	4	75	1	2/3	30 (30)

*1D6-1 points of damage plus tranq effect on TNE, page 350.

Short range in parentheses is the unrounded iron sight range.

COLOR PLATE CAPTIONS

These are the captions for the following eight color plates. The captions contain references to pages where more information on the illustrated equipment may be found.

A: Fitting Out

RCS *Maggart* (TailNo 10095), lead ship of the group IV "Stretch" clippers (page 136), is loaded for a strike mission while in orbit around Trybec. *Maggart* is fitted with a 400-ton fuel module in the normal aft position, along with a 200-ton habitation module just abaft the command section. Yard tugs are bringing up other modules (see pages 132-135 for module descriptions).

In the foreground is a Wildbat fighter (page 149), one of eight assigned to the mission, while RCC *Condor* (TailNo 20080F), the *Manta*-class fueler (page 131) assigned to *Maggart* for this mission, holds station to port.

In the background, starport *Vesna* (a former Imperial Scout base) is seen against the looming bulk of Trybec itself.

B: Combat Drop in Progress

RCS *Kelley Victrix* (TailNo 10067) releases a load of troop-laden drop capsules from her mission-configurable pod (pages 138-139). Note that the remote chin turret containing the SSL is obscured by the firing of the drop-capsule autolaunchers (visible as the two holes in the ship's belly). The various types of drop capsule are virtually indistinguishable from the outside, so it cannot be told which capsules actually contain troops, which are drones, and which are cargo-carriers (pages 14-15).

Each drop capsule has eight maneuvering thrusters (four at each end) for course adjustments and defensive "jinking." Additional protection is granted by three decoy launchers distributed about its "equator," each carrying five decoys, one launcher each of anti-passive sensor (flares), anti-ladar (light-diffracting aerosols), and anti-active sensor (streamer-bearing corner reflectors) decoys, which are dispensed by the onboard computer during the descent.

C: Decapitation Strike Team

A powered team in light battle dress (pages 18-19) sets up for a decapitation strike from a concealed position. While the communications tech sets up a maser uplink (page 24) in the foreground, the team leader keeps the target under observation with PRIS binoculars (page 28). The other two troopers set up the laser sniper weapon (page 97) and its tripod. At the designated time, the LSW gunner will open fire and knock out the communications antennae on the enemy headquarters in the background, isolating it from the planetary communications net. This will also be the signal for the attack to begin. During the attack, the team will provide covering fire, seeking out officers or other important targets to inflict maximum disruption upon the enemy.

D: SSL Team in Position

Near the scene depicted in plate C, a mixed-powered/muscle SSL team (page 9) has set up and readied itself for its role in the upcoming action. The team consists of a spotter, gunner, and ammo carrier for the SSL. Each member of the team carries a part of the disassembled SSL when moving.

The team's deployment is standard, the spotter scanning for targets, the gunner ready to fire, and the ammo carrier watching for the approach of hostiles from the flanks.

The spotter has PRIS binoculars and a personal defense laser (PDL, page 95), and is wearing an RC-issue utility vest along with private-purchase chaps and gauntlets over her body sleeve (pages 16-17). The fringe on her chaps and her use of a non-standard utility harness is typical of the informal approach to uniforms in the RCES. The gunner also wears the body sleeve but has chosen the standard harness. He has laid aside his PDL for the moment, and probably carries the SSL gunner's tool pouch on one hip.

Ammo carriers often wear light battle dress, as its powered feature enables them to carry more SSL ammunition than their strength would otherwise allow. This particular example is quite well camouflaged.

E: Counterattack

This plate shows a Coalition advisor helping indigenous forces resist an attack by AFVs. The advisor is using his arm-mounted laser designator to "paint" one of the attacking "Prairie Fire" tanks (pages 120-121) for an approaching Lyrebird tac missile fired from a short distance to the rear (pages 106-107). After the first target has been hit, the advisor will switch to a different target for the second Lyrebird.

In the right foreground are two local soldiers, Coalition allies trained and equipped by the RC as part of a continuing bootstrap operation. One fires a Coalition-supplied plasma bazooka (page 85), while the other, the loader in the bazooka team, takes cover.

F: Hot Recovery

A light-powered raiding party dropped as a diversion has done its job all too well and drawn a large part of the main force onto its position. The team is heavily outnumbered, and under fire from small arms as well as heavier weapons, but has successfully made it to its retrieval point, and is in the process of boarding its Fury assault landers (page 149).

The team is armed with a combination of 4mm gauss rifles (page 70) and 7mm ACRs (pages 60-61), along with 4cm RAM rifle grenades (pages 100-101), and equipped with Coalition-issue light battle dress (pages 18-19). This team has added its names or call signs to its battle dress shoulder plates, and the trooper in the foreground ("Kirby") has added an inscription to his personal weapon. Kirby has his helmet's faceplate in the partially open position.

After embarking the team, the lander will rendezvous with an ambulance skiff in orbit (page 135), transfer wounded, and proceed back to *Maggart* for debriefing.

G: Cargo Bay after the Storm

This plate shows a quiet moment aboard a Hiver transport (page 151) cargo bay after most of the cargo has been unloaded into a secured landing zone.

In the foreground, a BRT "Big Brute" (similar to the "Baby Brute" on page 21, but based on the Schalli battle dress skeleton with performance: 268-kg mass, Cr400,340 price, maximum load 2880 kg, 8 hours endurance) has just picked up a TL-8 "lightning bolt" Virus-killer (page 31) and is about to carry it to ground transport waiting outside. Through the open cargo hatch in the background, a platoon of Pyrrhus TL-13 support sleds (page 126) move out to reinforce the perimeter, while the last of the passengers brought by the transport (relic recovery teams and other specialists) march off to add their numbers to those already on the ground.

H: Serendipity

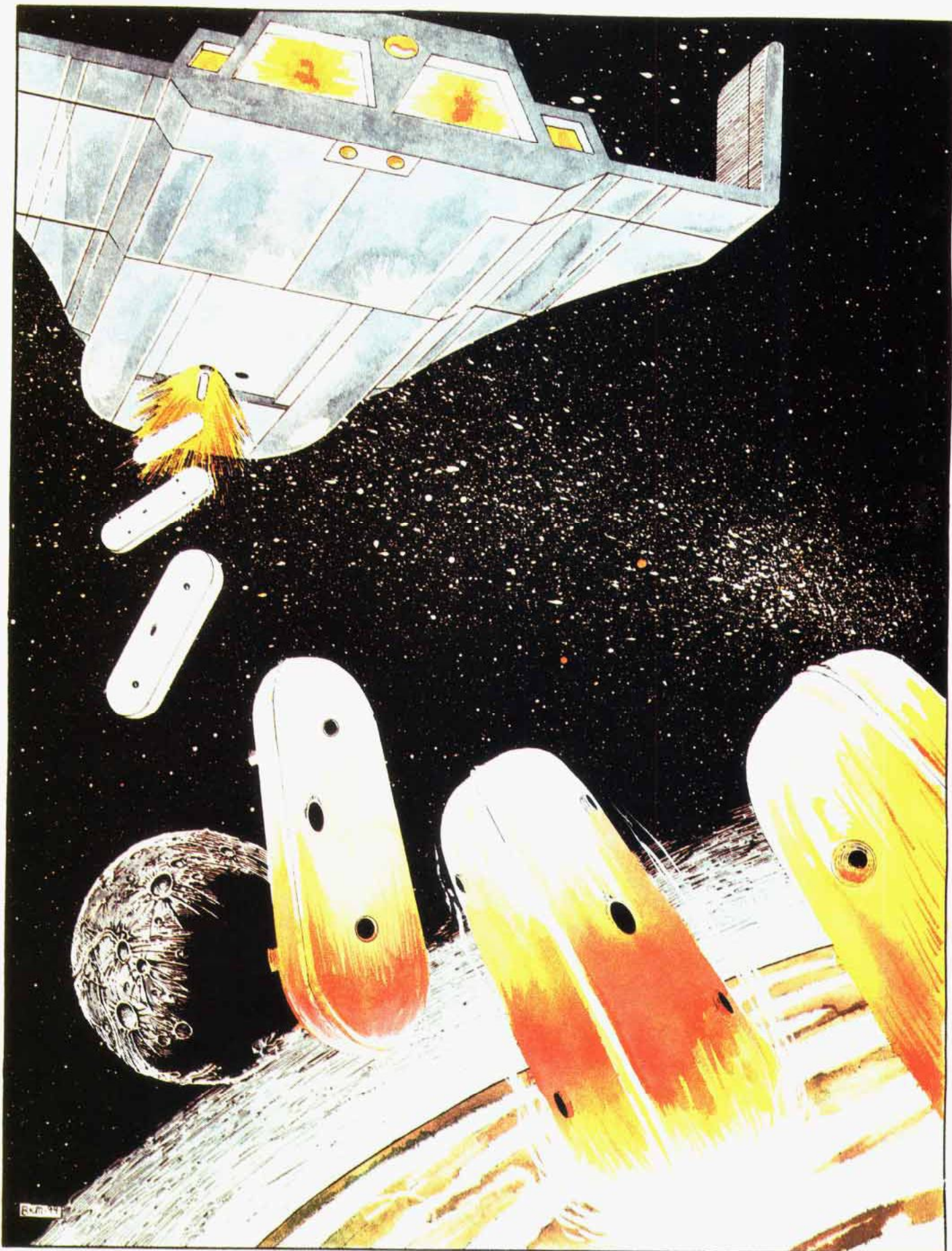
In the ruins of a boneyard city, a group of free-lancers discover a wrecked but possibly salvageable Intrepid grav tank (pages 112-113).

The group's clothing and equipment illustrate the wide variation seen in such groups. The party is armed with a variety of weapons, always a wise precaution in the Wilds. Their relative lack of gear indicates that they are not too far from their ship, or have a vehicle that carries the bulk of their supplies.

The grav tank has crashed through a building wall after coming under heavy fire, and has rested in this spot for a number of years. Curiously, the tank's crew had not removed the tampion from the gun barrel, which indicates a hasty departure from a vehicle park or warehouse facility. This is a lucky discovery for the team, as it indicates that the main gun has been protected from the elements and may actually be in working condition. If the group's luck holds, the tank will have a full supply of ammunition, and it will make a tidy profit from this trip.



Вилл. 94



B

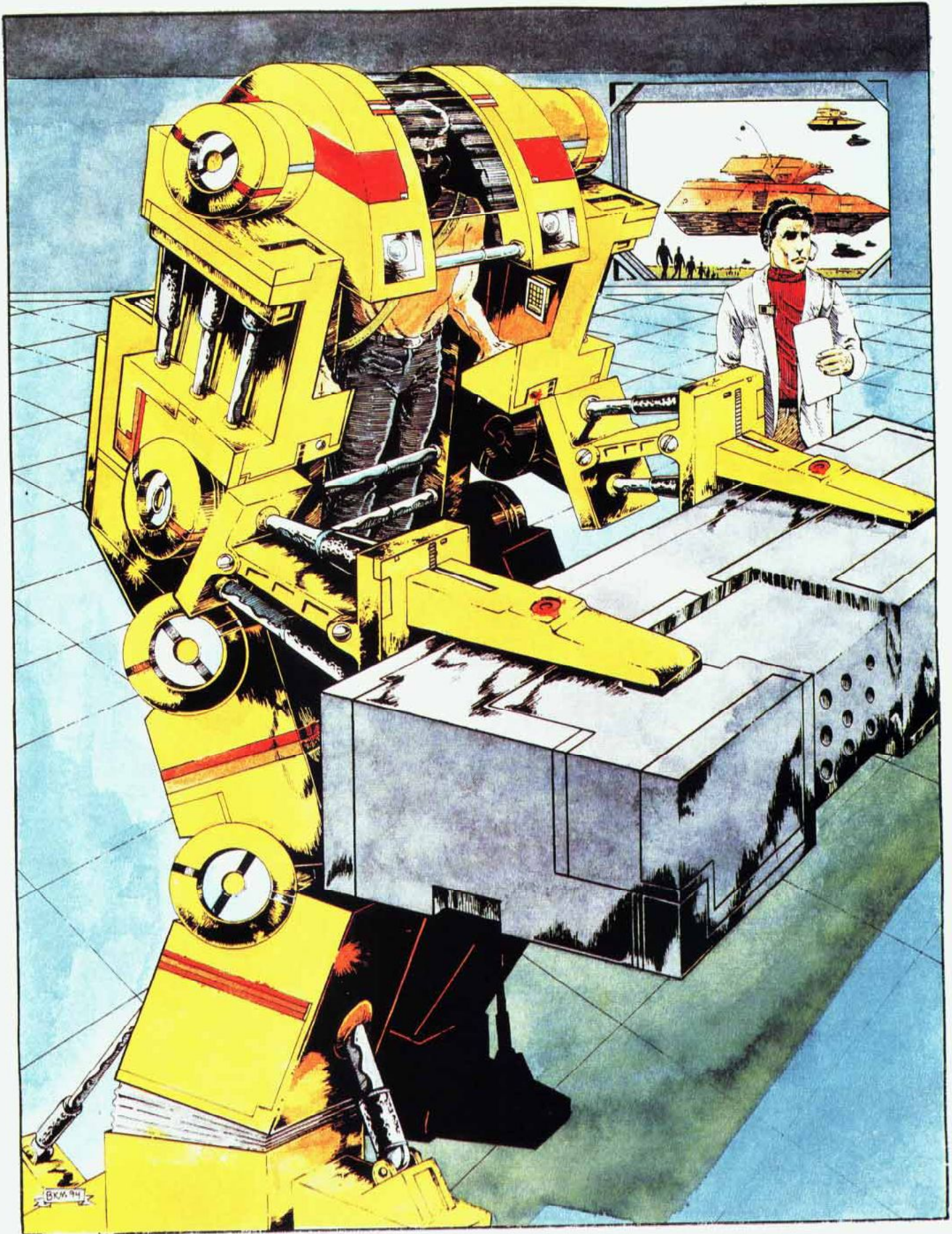


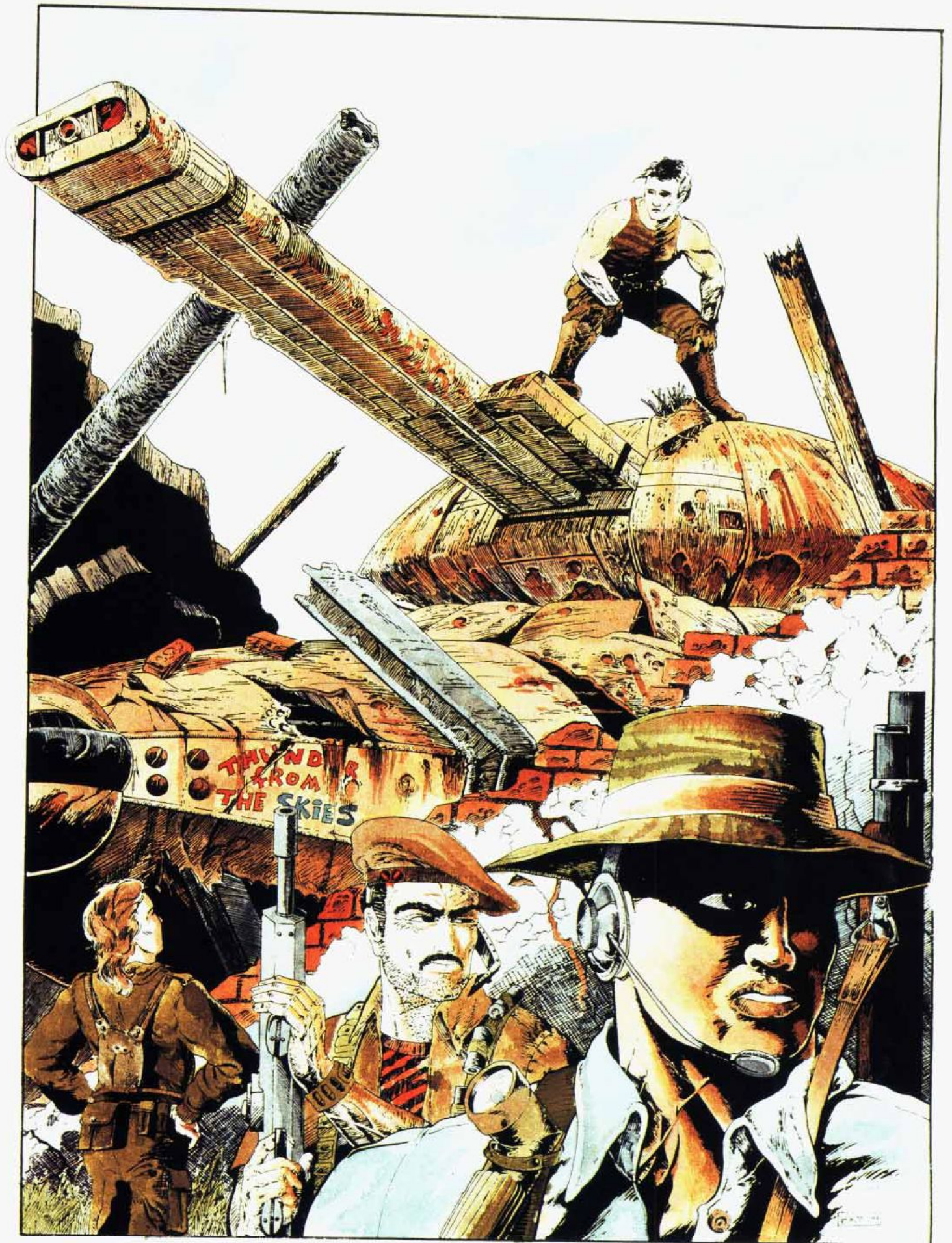


D







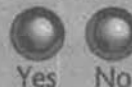




Plasma Bazooka

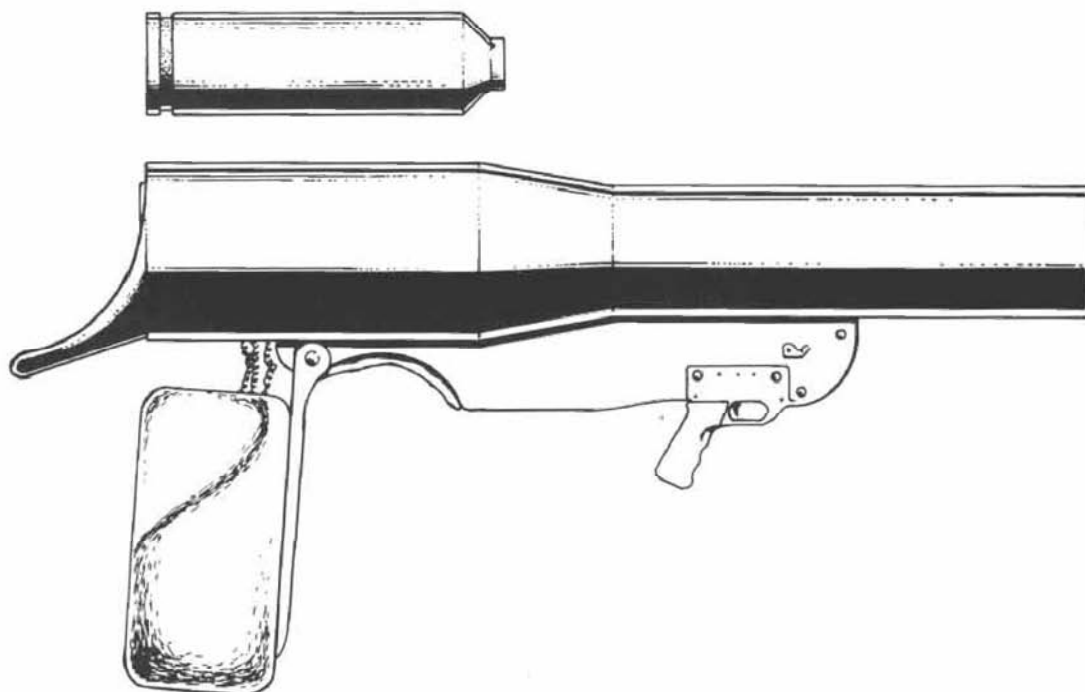


Security Clearance



28 IX 1201

Date



TL-10 9cm Plasma Bazooka

This is the least sophisticated of the high-energy weapons, but it does provide moderately portable antiarmor firepower at much lower tech levels than those at which effective man-portable high-energy weapons become practical. These are manufactured by the Reformation Coalition primarily for supply to Coalition allies in the Wilds, but they are also used in limited numbers by RC member world armed forces.

Unlike the more sophisticated plasma rifles which separate their firing units from their support hardware, the plasma bazooka comes in one piece, and is fired from the shoulder. It fires an individually loaded chemical plasma cartridge (CPC). The cartridge contains the ignition chamber for the plasma stream and a disposable chemical laser ignition system. Part of the cartridge's great weight comes from the fact that it must vent a significant amount of energy out of the rear of the bazooka in order to negate its recoil. However, this creates considerable backblast. All personnel standing within 10 meters directly behind the weapon is fired take 5D6 backblast damage, and the weapon may not be fired from inside an enclosure (such as a building or bunker).

The plasma bazooka takes two combat turns to reload (one turn is spent on the cooling cycle, the second is spent loading the new CPC).

The plasma bazooka crew usually consists of two personnel, the bazooka gunner and a loader/ammo carrier. The bazooka team is typically provided with a light vehicle as well, such as a range truck or air raft.

Cartridge/Bore Diameter: 9 cm

Weapon Length: 85 cm

Discharge Energy: 2 Mj

Weapon Specifications: 27 kg empty, 43.2 kg loaded with one round, Cr 67,500 for weapon only

Cartridge Specifications: "9x32 CPC," actual dimensions 90x318 mm Chemical Plasma Cartridge (2.25 Mj), 16.2 kg, Cr400 each

Features: Optic sights

Combat Performance

Weapon	Rld	Dam Val	Pen Rtg	Pen Val	Bulk	Mag	Recoil	Short Range
9cm Plasma Bazooka-10	2	16	1-2-10	17-17-9-2	5	1i	—	70

High-Energy Weapons



Security Clearance



28-IX-1201
Date

HIGH-ENERGY WEAPONS

High-energy weapons use a laser to heat hydrogen in a magnetic bottle into a high-temperature plasma, and then release this plasma in a high-velocity jet. These weapons are commonly divided into two types: plasma weapons and fusion weapons. Both sub-types work in the same basic way; the difference is that in the fusion weapons the plasma continues to be heated in the weapon until its atoms begin to undergo nuclear fusion.

These weapons use hydrogen which is contained in pulse plasma or pulse fusion cartridges (PPCs or PFCs) which also contain the circuitry to allow them to function as the magnetic bottles which confines the plasma until it is fired. The cartridge is then expelled during the cooling/reload cycle. The diameter of the pulse cartridge in centimeters is usually used to describe the weapon, although the diameter of the plasma stream itself is less than this.

The support equipment required for the plasma or fusion weapon (such as the cooling system and batteries to power the laser) are carried in a backpack which is connected to the weapon by a flexible, heavy-duty cable. The same laser which ignites and heats the hydrogen (by firing through the center of the pulse cartridge) also is fired at the target a split-second before the plasma is released. This pilot laser burns a small "tunnel" through the atmosphere which assists the passage of the plasma which follows along behind it.

High-energy weapons generate a large amount of recoil, and are usually intended for use by powered (battle dress-equipped) troops, or are fitted with recoil compensators.

Non-Compensated High-Energy Weapons

Nonrecoil-compensated high-energy weapons are almost always used with battle dress, which provides the strength enhancement to allow the firer to handle the high recoil. The three non-compensated weapons on the table below must be used with battle dress, as they are not fitted with buttstocks. Instead, they have a plug assembly which fits into a socket on the battle dress breastplate (one on each side to allow for right- or left-handed firing). This plug holds the weapon in place when being fired, and also allows the weapon to be integrated into the battle dress sensor suite. While the weapon is plugged into the socket, its boresight line is projected onto the heads-up display on the battle dress visor.

Non-compensated high-energy weapons are usually quite heavy, as the battle dress-enhanced strength allows them to carry a greater load of ammunition than could be handled by unpowered troops.

The TL-12 4.3cm plasma rifle is manufactured in small numbers by the Reformation Coalition for use with powered troops. The other weapons listed on the table below are relic weapons which can also be found in service, provided sufficient compatible ammunition has also been recovered.

TL-12 4.3cm Plasma Rifle (Powered Troops)

- Weapon Length: 72 cm
- Pulse Energy: 0.6 Mj
- Weapon Mass: 2.4 kg empty, 17.4 kg with full magazine
- Backpack Mass: 4.8 kg
- Weapon Price: Cr18,000 (Cr6000 firing unit, Cr12,000 backpack)
- Cartridge Specifications: "4.3 cm PPC," actual dimensions 4.3 x 12.4 cm Pulse Fusion Cartridge (0.6 Mj), 1.44 kg, Cr15 each
- Magazine Specifications: 7.8 kg empty, 15 kg with 5 rounds, Cr78 empty, Cr153 fully loaded with 5 rounds PPC
- Features: Optic sight

Weapon	TL	Pulse	Ammo	Weight			Mag	Price	
				Empty	Loaded	BP		Weapon	Ammo
4.3 cm Plasma Rifle	12	0.6	4.3 PPC	2.4	17.4	4.8	5	18,000	15/153
4.7 cm Plasma Rifle	13	0.8	4.7 PPC	3.2	35.53	4.8	10	20,000	20/361
4.7 cm Fusion Rifle	14	1.2	4.7 PFC	4.8	40.1	4.8	10	72,000	9.6/257

Pulse energy in Mj; Ammo diameter in cm and type; Weight in kg, where BP is backpack weight; Price in credits, Ammo price for a single round/fully loaded magazine in credits.

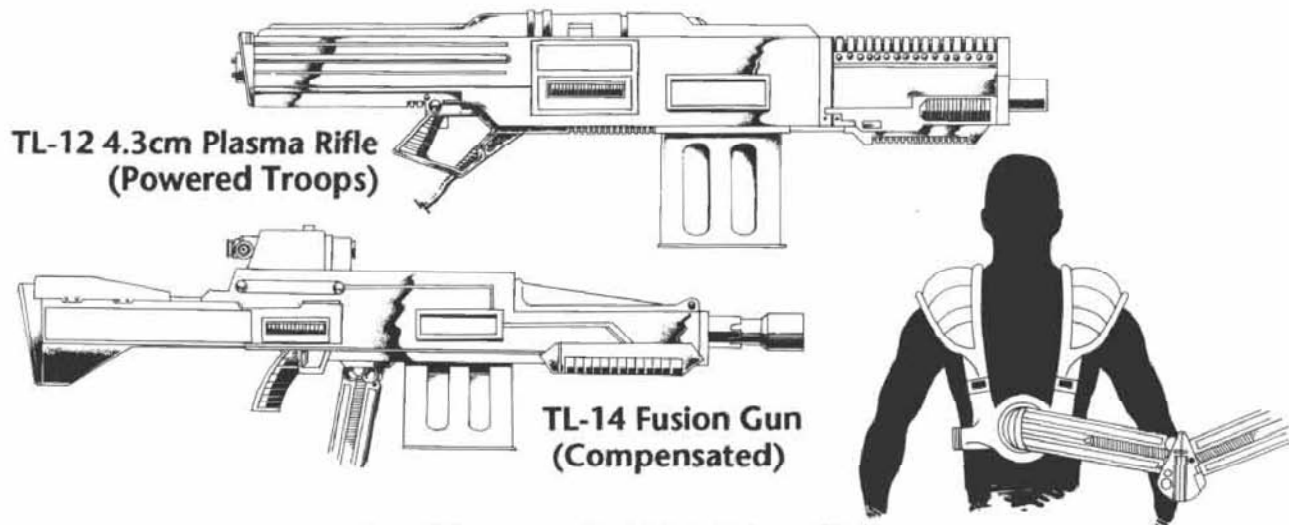
Weapon	ROF	Dam	Pen Rtg	Pen Val	Bulk	Mag	SS	Recoil	
								Burst	Range
4.3 Plasma 12	SA1	9	1-2-10	9-9-5-1	5	5	11	—	20
4.7 Plasma 13	SA1	10	1-2-10	10-10-5-1	5	10	8	—	20
4.7 Fusion 14	SA1	13	1/2-1-4	26-26-13-3	5	10	8	—	60

The Damage and Penetration Rating (short/medium-long-extreme) columns are used for firing against personnel. The Penetration Value column (short-medium-long-extreme) is used against vehicles.

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Recoil-Compensated High-Energy Weapons

Because non-powered troops cannot typically control the recoil of high-energy weapons, lighter versions of these weapons are manufactured with recoil compensators which reduce the recoil to manageable levels. These compensators are gyroscopic in design from tech level 10-13, and are inertial at tech level 14 and higher. They are carried in the weapons' backpacks along with the other support equipment. The fitting of either type of compensator requires a modification to the hardware which connects the backpack to the weapon. Rather than the simple cable, the compensated weapon is connected to the backpack by a flexible, articulated arm. This arm has a number of joints which allow the user to move the weapon freely and fire it from the hip or the shoulder. However, at the moment the weapon fires, the joints become rigid, allowing the recoil to be carried down the arm into the backpack, where a portion of it is absorbed by the compensator. The remaining recoil is within the ability of the average soldier to control.

Recoil-compensated weapons are quite a bit more expensive than the non-compensated versions, but are economical from the standpoint that they do not also require a battle dress suit for each soldier. Because non-powered troops cannot manage overly massive weapons, compensated high-energy weapons also have much smaller magazine capacities than their non-compensated counterparts.

The compensated TL-14 fusion rifle described here is rated limited standard in RC service, as a significant cache were discovered on Nike Nimbus (which had been a naval base during the Final Imperium). The other two weapons on the table below are relic weapons which had been fairly common in the Imperial era.

TL-14 Fusion Gun (Compensated)

Weapon Length: 80 cm

Pulse Energy: 1.2 Mj

Weapon Mass: 4.8 kg empty, 21.7 kg with full magazine

Backpack Mass: 9.6 kg

Weapon Price: Cr156,000 (Cr72,000 firing unit, Cr84,000 backpack with inertial compensator)

Cartridge Specifications: "4.7 cm PFC," actual dimensions 4.7 x 13.8 cm Pulse Fusion Cartridge (1.2 Mj), 1.92 kg, Cr9.6 each

Magazine Specifications: 9.22 kg empty, 16.9 kg with 5 rounds, Cr93 empty, Cr131.4 fully loaded with 5 rounds PFC

Features: Optic sight, inertial compensator harness and backpack

Weapon	TL	Pulse	Ammo	Weight			Mag	Price	
				Empty	Loaded	BP		Weapon	Ammo
4.1 cm Plasma Rifle/comp	14	0.8	4.1 PFC	3.2	14.5	6.4	4	40,000	6.4/87
4.7 cm Fusion Rifle/comp	14	1.2	4.7 PFC	4.8	21.7	9.6	4	156,000	9.6/131
5.1 cm Fusion Rifle/comp	15	1.5	5.1 PFC	3	24	6	4	97,500	12/163

Pulse energy in Mj; Ammo diameter in cm and type; Weight in kg, where BP is backpack weight; Price in credits, Ammo price for a single round/fully loaded magazine in credits.

Weapon	ROF	Dam Val	Pen Rtg	Pen Val	Bulk	Mag	Recoil		
							SS	Burst	Range
4.1 Plasma 14c	SA1	10	1-2-10	10-10-5-1	4	4	5	—	20
4.7 Fusion 14c	SA1	13	1/2-1-4	26-26-13-3	5	4	3	—	60
5.1 Fusion 15c	SA1	14	1/2-1-4	28-28-14-4	3	4	4	—	80

The notation "comp" or "c" indicates that the weapon is fitted with a recoil compensator in the backpack.

The Damage and Penetration Rating (short/medium-long-extreme) columns are used for firing against personnel. The Penetration Value column (short-medium-long-extreme) is used against vehicles.

Lasers

LASERS

Lasers (Light Amplification by the Stimulated Emission of Radiation) function on a principle called *stimulated emission*, meaning that an atom or molecule is hit by light of a particular wavelength which then causes that particle to emit light of that same wavelength. The reason that substances can be stimulated to produce specific wavelengths has to do with the way atoms and molecules store and release energy with their electrons. Electrons belonging to an atom are found in "orbits" (they are not really orbits, but they are a close enough concept for these purposes) around the atom's nucleus. These electrons move from low-energy orbits close to the nucleus out to high-energy orbits farther from the nucleus as they gain energy by absorbing photons, and move back in toward the nucleus as they give up energy by emitting photons.

These orbits are not set up with an infinite number of fine gradations. Rather, they are like the rungs of a ladder—there are only so many, and they are a fixed distance apart. One can step up or down one, two, three or more rungs at a time, but cannot go up or down a fraction of a rung. Like the difference between electron orbits, the differences between the rungs on a ladder are *quantized*. This means that an electron which absorbs a photon and moves, or *transitions*, to a higher orbit, or *energy level*, can only have absorbed a photon with a certain fixed amount of energy, no more and no less, to move to that energy level. As that same electron transitions back down to the earlier lower energy level, it emits that same amount of energy, the difference between the two energy levels, in the form of a photon which is identical to the photon it absorbed earlier. Thus, based on the number of available energy levels and the combination of transitions (energy level 0-1, 0-2, 0-3, 1-2, 1-3, etc.), an atom can only absorb or emit photons of certain discrete energies.

Photons are described in three ways: by their energy, their frequency, and their wavelength (remember that electromagnetic radiation behaves as simultaneously as particles—photons—and waves, so that particles can be said to have frequency and wavelength). However, these are merely three different descriptions of the same thing—a given wavelength is equivalent to a certain frequency is equivalent to a certain energy. That means that an atom which can only absorb or emit photons of certain energies can only absorb or emit radiation of a certain wavelength.

Molecules also store energy electronically as just described, but they additionally store energy as vibrational energy, where the component atoms vibrate back and forth with relation to each other, and rotational energy, where the molecule rotates around its center of mass (atomic nuclei cannot store energy like this because their mass is completely symmetrical). However, like electronic energy, vibrational and rotational energy are also quantized—there are only certain allowed levels of these energies, which define the energy/wavelength of the photons that these molecules can absorb or emit.

Most photon emission is spontaneous. Energetic atoms or molecules, like those in the filament of a light bulb, shed their energy by spontaneously spewing photons—atoms and molecules tend toward their lowest energy states, so the chances of spontaneous emission increase with the energy state. What stimulated emission does is to hit an energetic atom or molecule with a photon of a wavelength that corresponds to one of that atom or molecule's transitions (i.e., a wavelength which it can absorb or emit). If the atom or molecule is already at the energy state where it can emit a photon of the wavelength which struck it, the atom or molecule will emit that photon, and in the same direction as the photon which struck it, so that now there are two identical photons travelling in the same direction. So long as this takes place within a population of atoms or molecules which are already at the required energy level, this chain reaction will continue, creating ever more photons of the same wavelength. This is a laser. If this emission takes place between a pair of focusing mirrors, the photons will bounce back and forth, continuously stimulating more photons travelling in the same direction, until one of the mirrors is made transparent ("Q-switched"), and the focused beam of photons is released. This is what we normally think of as a laser, although it is more properly called a "diffraction limited laser." These diffraction limited lasers are used as weapons in **Traveller**, and are referred to here simply as "lasers."

However, a population of atoms or molecules will not all be at the proper energy state at the same time. Instead, they will naturally be at thermodynamic equilibrium, which means that the number of atoms or molecules at a given energy state varies inversely with the amount of energy in that energy state, with the result that each energy state is outnumbered by the lower energy state immediately beneath it (i.e., the energy state which will immediately absorb photons released by the upper energy states). What this means is that this population would rather absorb the photons coming by than be stimulated to emit any. The stimulated emission chain reaction is dead before it begins.

In order to get stimulated emission to work, there must be a *population inversion*. A population inversion means that the target energy state (that which produces the photon wavelength desired) is more common than the energy states beneath it. This allows the target energy state population to stimulate each other's emission without these photons being absorbed by the remainder of the population. This inversion cannot be created simply by heating the population, as this would merely create thermodynamic equilibrium at a higher set of energy states, which would be just as detrimental to the chain reaction. Three ways to selectively populate an upper energy level are via electrical current, intense light, or chemical reaction.



Security Clearance



28-IX-1201

Date

Reformation Coalition Equipment Guide

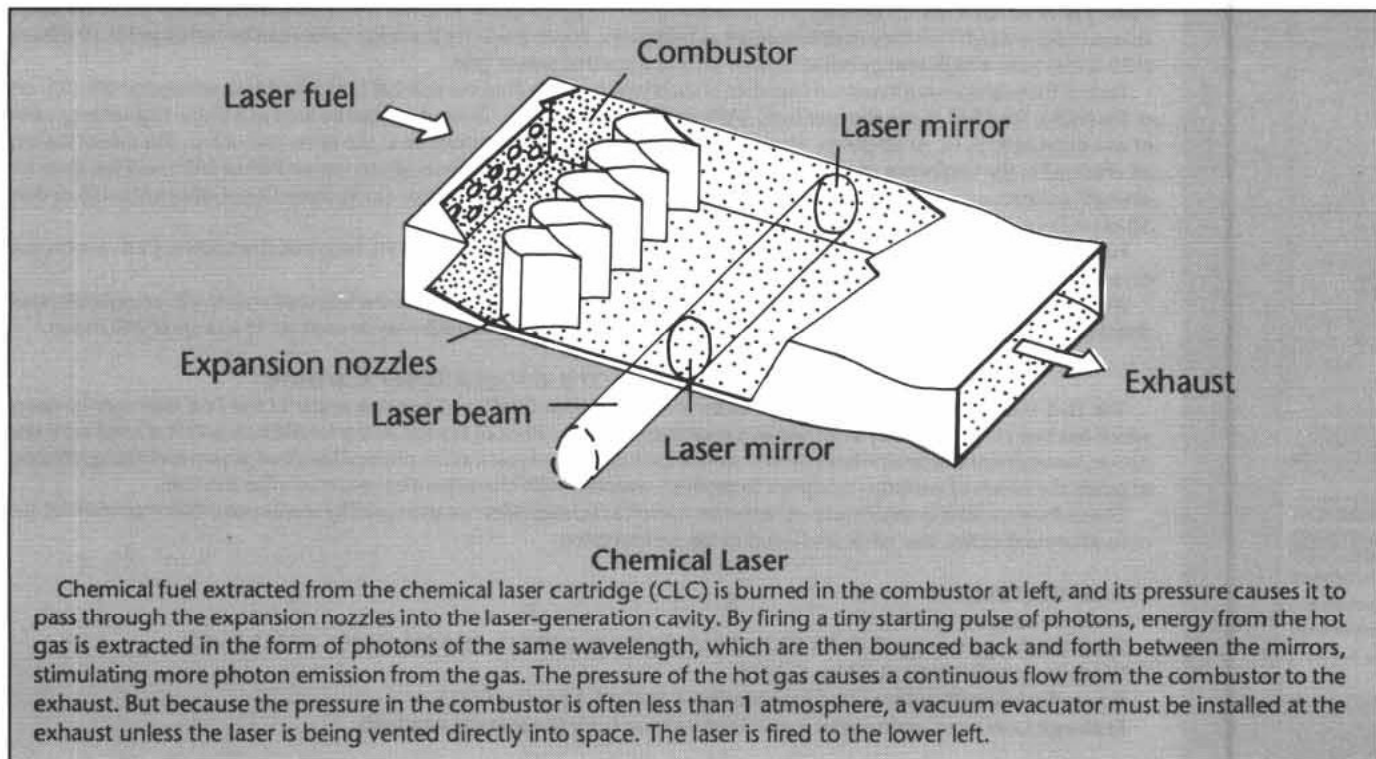


These give rise to the types of lasers used in *Traveller* and presented on the following pages.

First is what we will call a static laser. A static laser uses a single population of atoms or molecules which are energized by electrical or light input, emit their photons and fall to a lower energy state, and are then re-energized to emit again, over and over and over. They are called static because they use the same population time after time. They are distinguished by the need for significant electrical input in order to function, and also by the fact that they are not tunable (i.e., they cannot be manipulated to emit more than one wavelength of light, because the static population is typically limited to one useful wavelength by its very nature). Static lasers are represented in *Traveller* by non-tunable direct electrical input lasers, and examples of these are found on pages 90-91.

Second are chemical lasers. These lasers do not use the same population over and over, but continuously create a new energized population which emits its photons and is discarded. These atoms or molecules are not energized *per se*, but are created in an energized state as the products of an energetic chemical reaction. By keeping a continuous reaction going and venting away the spent material, a population inversion can be maintained without the need for outside power input, as the energy comes purely from combusting chemicals (which come from a chemical laser cartridge, or CLC). These lasers can be described as tunable because the laser wavelength they emit is based on the chemicals they are burning. By designing a laser to combust a variety of different chemicals, each of which produces a different wavelength, that laser can be used to produce a number of different wavelengths merely by changing the chemicals used. Examples of this type of laser are found on pages 92-95.

There is also a third type of laser, the free-electron lasers, or FELs. These are true tunable lasers, but the only FELs presented here are starship-mounted turret lasers; no small arms FELs are presented in this book.

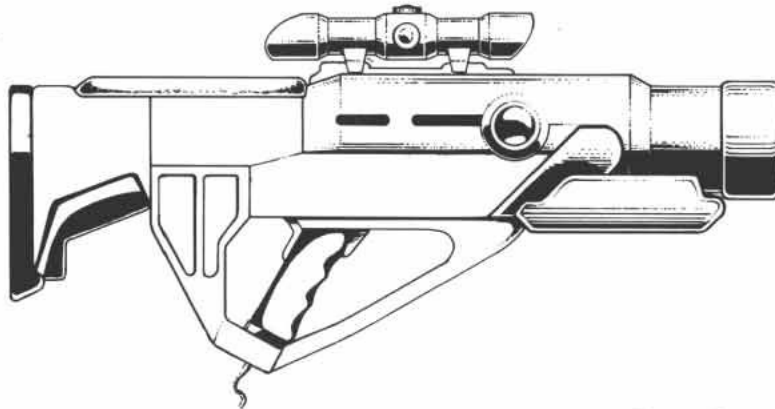


Laser Atmospheric Adjustments

Lasers have widely differing performance in different atmosphere types. The combat performance charts on the following six pages show performance in a standard atmosphere (codes 6, 7). For performance in other atmosphere types, look at the Atmospheric Adjustment tables and use the following procedure. Use the listed short range from the SR column to resolve hits, and then find damage at that range by consulting the column for the correct atmosphere type, Vacuum (code 0), Trace (code 1), Very Thin (codes 2 and 3), Thin (codes 4 and 5), Dense (codes 8 and 9), and Exotic (codes A-C). All of these columns provide four entries, for short-medium-long-extreme ranges. The entry will usually be a letter code, showing which damage entry to use on the combat performance table. If the entry reads "0," the laser does no damage at that range.

For dense and exotic atmospheres, there is an additional parenthetical listing. This shows the weapon's short range in meters in this atmosphere to achieve the same S-M-L-E damage performance it has in a standard atmosphere as listed on the combat performance table. This allows players to use their weapons at shortened ranges in thick atmospheres to regain damage performance. If the entry reads "NA," there is no shorter range that may be used.

DEI Lasers



DIRECT ELECTRICAL INPUT LASERS

All direct electrical input (DEI) lasers require a direct electrical power supply which feeds directly into the laser's capacitor or homopolar generator. For vehicle- or starship-mounted weapons, this is a power plant. For small arms, this is almost always a battery pack which is combined with the capacitor to form a power pack. At lower tech levels, these power packs are almost always bulky enough that they must be carried as backpacks. Power packs for the lasers below can be recharged in 10 minutes (120 turns) from a high-energy power source such as a starship power grid.

Each of these lasers has a maximum number of shots which can be fired per combat turn, listed as its semiautomatic (SA) rate of fire (ROF). Thus SA1 is one shot per turn, SA2 two shots per turn, etc. These shots can be fired as a single high-energy pulse, or as a burst of 3, 5, 10, or 50 pulses. However, all shots fired in one turn must be at the same rate of fire. This rate of fire may be changed at the beginning of each combat turn at no action cost. Thus a laser which has an ROF of SA3 could fire three full-strength pulses in a turn (SA3), three three-pulse bursts (3x3), three five-pulse bursts (3x5), three 10-pulse bursts (3x10), or three 50-pulse bursts (3x50) in a combat turn.

For weapons (such as the pistol and rifle below) which have different SA rates of fire based on their power pack, the number of multi-pulse bursts allowed is based on the SA rate.

All DEI lasers are equipped with integral laser sights (TNE, page 275) which simply use the laser itself on a very low (negligible power drain) power level. The laser sights for all three DEI lasers in this book (pages 90-92) may be used out to a range of 240 meters.

TL-8 10cm Direct Electrical Input Laser Carbine

The TL-8 10cm laser carbine manufactured by the Reformation Coalition is but one avatar of the TL-8 laser carbine design which has been independently designed and engineered on thousands of worlds. As the lowest tech practical small arms laser design, variations of this carbine have been in service for thousands of years, as the physical laws that govern such things continue to guide the hands of weapons designers to produce weapons with characteristics very much like this one.

This carbine remains in service even at higher tech levels as a designation weapon used by scouts and artillery spotters because of its all-around utility, low price, and good range performance.

Focal Array Diameter: 10 cm

Weapon Length: 72.15 cm

Pulse Discharge Energy: 0.01 Mj (SA1), 0.0033 Mj (1x3), 0.002 (1x5), 0.001 (1x10), 0.0005 (1x50)

Weapon Specifications: 4.33 kg, Cr2310

Power Pack Specifications: 19.5 kg, capacity of 50x0.01 Mj shots, Cr215

Features: Laser sight, optic sight, ruggedized weapon body (to grenade standard)

Combat Performance (in Atmosphere types 6, 7)

Weapon	ROF	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Magazine	Short Range
10cm DEI Carbine-8	SA1	5-3-1-1	0-0-0-0	Nil	4	50 PP	200
	1x3	3-1-1-0	0-0-0-0	Nil	4	50 PP	200
	1x5	2-1-1-0	0-0-0-0	Nil	4	50 PP	200
	1x10	2-1-0-0	0-0-0-0	Nil	4	50 PP	200
	1x50	1-0-0-0	0-0-0-0	Nil	4	50 PP	200

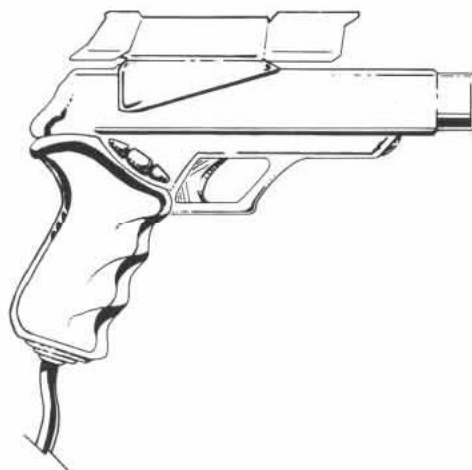
Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
10cm DEI Carbine-8	290	S-S-S-M	S-S-S-M	S-S-M-L	S-M-L-E	M-L-E-0	L-E-0-0 (100)	0-0-0-0 (20)

Note that the laser carbine uses a reduced short range on the combat performance table in order to maximize its damage performance. The values under Standard atmosphere above allow players to use the carbine's best range performance, at a penalty in damage performance at range.

9x3 9x6 9x9
8x3 8x6 8x9
7x3 7x6 7x9
6x3 6x6 6x9
5x3 5x6 5x9
4x3 4x6 4x9
3x3 3x6 3x9
2x3 2x6 2x9
1x3 1x6 1x9
0x3 0x6 0x9
« »

Security Clearance
Yes No
28 IX 1201
Date



TL-9 5cm Direct Electrical Input Laser Pistol

This weapon is a much lighter alternative to the laser rifle manufactured at the same tech level (see next page), although it is so heavy that it hardly fills the classic sidearm role. The lightweight power pack (below) allows the pistol's use by specialist troops, such as heavy weapons crews, radio operators, etc.

This pistol may be fitted with any one of three standard power packs. One power pack provides power for 50 shots at the 0.01 Mj level, or 25 shots at the 0.02 Mj level, or a combination of the two. The second power pack provides 100 shots at 0.01 Mj or 50 shots at 0.02 Mj, or a combination. The third "lightweight" power pack provides 50 shots at 0.01 Mj and sacrifices the ability to fire at the 0.02 Mj level, but is appreciably lighter than the other two packs. All three power packs are backpack configuration, and use the same power hook-up cable.

While the pistol is built to handle a rate of fire of four 0.01 Mj shots or two 0.02 Mj shots (SA4 and SA2, respectively), only the second, largest power pack allows fire at this rate. The smaller power packs limit the pistol to SA2 at 0.01 Mj and SA1 at 0.02 Mj (or not shots at all in the case of the lightweight power pack) because of their battery discharge rates.

An adaptor assembly may be installed in a vehicle to allow the pistol to be fed directly from the vehicle's power plant. This assembly masses 13.6 kg (0.0136 tonnes), displaces 6.8 liters (0.0068 cubic meters), costs Cr295, and requires 0.02667 MW power from the power plant if the pistol is to fire at its full performance (equivalent to power pack 2), or only 0.0133 MW to allow performance equivalent to that with power pack 1.

Focal Array Diameter: 5 cm

Weapon Length: 42 cm

Pulse Discharge Energy: 0.02 Mj (at SA1 or SA2, see above), 0.01 Mj (at SA2 or SA4, see above), 0.0033 Mj (three-pulse bursts), 0.002 (five-pulse bursts), 0.001 (10-pulse bursts), 0.0005 (50-pulse bursts)

Weapon Specifications: 1.67 kg, Cr1250

Power Pack Specifications: Power Pack 1: 19.6 kg, capacity 50x0.01-Mj or 25x0.02-Mj shots, Cr320, or

Power Pack 2: 23.5 kg, capacity 100x0.01-Mj or 50x0.02-Mj shots, Cr330, or

Power Pack 3: 11.9 kg, capacity 50x0.01-Mj shots, Cr280

Features: Laser sight, optic sight, ruggedized weapon body (to grenade standard)

Combat Performance (in Atmosphere types 6, 7)

Weapon	Mj	ROF(1/2/3)	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Mag (1/2/3)	Short Range
5cm DEI Pistol-9	0.02	SA1/SA2/—	7-4-2-1	1-0-0-0	Nil	2	25/50/—*	90
	0.01	SA2/SA4/SA2	5-3-1-1	0-0-0-0	Nil	2	50/100/50	90
	0.01	2x3/4x3/2x3	3-2-1-0	0-0-0-0	Nil	2	50/100/50	90
	0.01	2x5/4x5/2x5	2-1-1-0	0-0-0-0	Nil	2	50/100/50	90
	0.01	2x10/4x10/2x10	2-1-0-0	0-0-0-0	Nil	2	50/100/50	90
	0.01	2x50/4x50/2x50	1-0-0-0	0-0-0-0	Nil	2	50/100/50	90

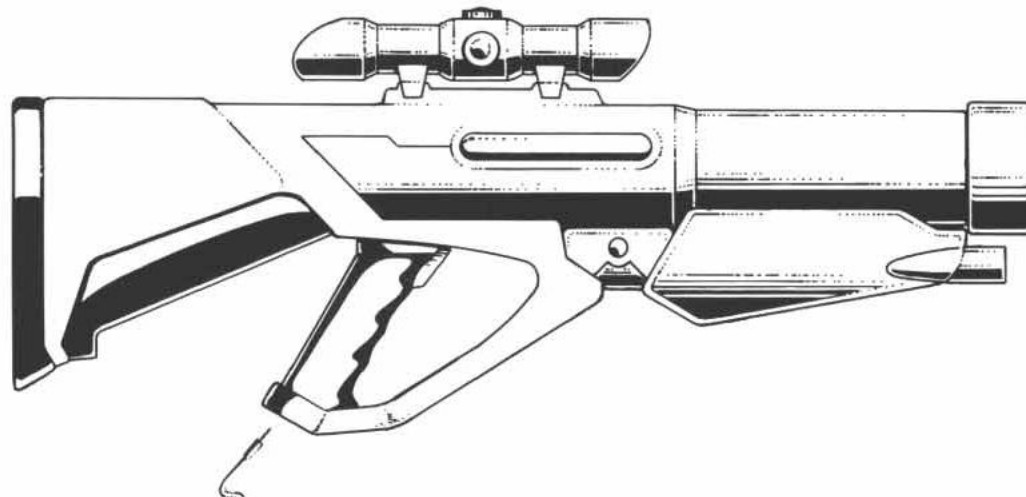
Mj column shows the discharge energy of the shot (either single pulse or total energy of all pulses in a burst) in megajoules. Notations 1/2/3 above in the ROF and Mag columns are for power packs 1, 2, and 3, respectively. Each multi-pulse burst consumes the same amount of energy as a 0.01-Mj single-pulse shot.

*Note that each 0.02-Mj shot consumes the equivalent energy of two 0.01 Mj shots for purposes of keeping track of power expenditure.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
5cm DEI Pistol-9	90	S-S-S-S	S-S-S-S	S-S-S-M	S-S-M-M	S-M-L-E	M-L-E-W (50)	W-0-0-0 (10)

DEI and CLC Lasers



TL-9 8cm Direct Electrical Input Laser Rifle

Like the DEI pistol manufactured at the same tech level (page 91), the combat performance of this rifle varies with the power pack it is fitted with. While the rifle is constructed to be able to fire 0.04 Mj pulses at a rate of fire of two per combat turn (SA2) or 0.02 Mj pulses at a rate of four per turn (SA4), this full performance is only permitted by the heavier of the two power packs available.

With the first, lighter power pack, the battery's discharge rate limits the rifle to a ROF of SA2 at 0.02 Mj or SA1 at 0.04 Mj. The second, heavier power pack allows the full rate of fire described above.

While the rifle itself is relatively light and handy, the power required by the weapon results in very heavy power packs. Even the less capable power pack constitutes a burdening load for most persons, and the heavier high-performance pack is almost guaranteed to be a burdening load (see TNE, pages 35 and 265).

Nonetheless, the 8cm rifle is a formidable antipersonnel small arm.

An adaptor assembly may be installed in a vehicle to allow the rifle to be fed directly from the vehicle's power plant. This assembly masses 27.2 kg (0.0272 tonnes), displaces 13.6 liters (0.0136 cubic meters), costs Cr590, and requires 0.05332 MW power from the power plant if the rifle is to fire at its full performance, or only 0.02667 MW to allow performance equivalent to that with the lighter power pack.

The rifle is not fitted with a bayonet lug as its structure is not ruggedized to hand-to-hand combat standards.

Focal Array Diameter: 8 cm

Weapon Length: 71.62 cm

Pulse Discharge Energy: 0.04 Mj (at SA1 or SA2 see above), 0.02 Mj (at SA2 or SA4, see above), 0.00667 Mj (three-pulse bursts), 0.004 (five-pulse bursts), 0.002 (10-pulse bursts), 0.0004 (50-pulse bursts)

Weapon Specifications: 4.21 kg, Cr2855

Power Pack Specifications: Power pack 1: 44.3 kg, capacity of 100x0.02 Mj or 50x0.04-Mj shots, Cr656, or
Power Pack 2: 57.3 kg, capacity of 200x0.02-Mj or 100x0.04-Mj shots, Cr684

Features: Laser sight, optic sight, ruggedized weapon body (to grenade standard), RAM rifle grenade adapter

Combat Performance (in Atmosphere types 6, 7)

Weapon	Mj	ROF (1/2)	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Mag (1/2)	Short Range
8cm DEI Rifle-9	0.04	SA1/SA2	10-5-3-1	1-0-0-0	Nil	4	50/100*	160
	0.02	SA2/SA4	7-4-2-1	0-0-0-0	Nil	4	100/200	160
	0.02	2x3/4x3	4-2-1-1	0-0-0-0	Nil	4	100/200	160
	0.02	2x5/4x5	3-2-1-0	0-0-0-0	Nil	4	100/200	160
	0.02	2x10/4x10	2-1-1-0	0-0-0-0	Nil	4	100/200	160
	0.02	2x50/4x50	1-1-0-0	0-0-0-0	Nil	4	100/200	160

Mj column shows the discharge energy of the shot (either single pulse or total energy of all pulses in a burst) in megajoules. Notations 1/2 above in the ROF and Mag columns are for power packs 1 and 2. Each multi-pulse burst consumes the same amount of energy as a 0.01 Mj single-pulse shot.

*Note that each 0.04-Mj shot consumes the equivalent energy of two 0.02-Mj shots for purposes of keeping track of power expenditure.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
8cm DEI Rifle-9	300	S-S-S-S	S-S-S-S	S-S-M-L	S-M-L-E	M-L-E-W	L-E-W-0 (80)	0-0-0-0 (20)

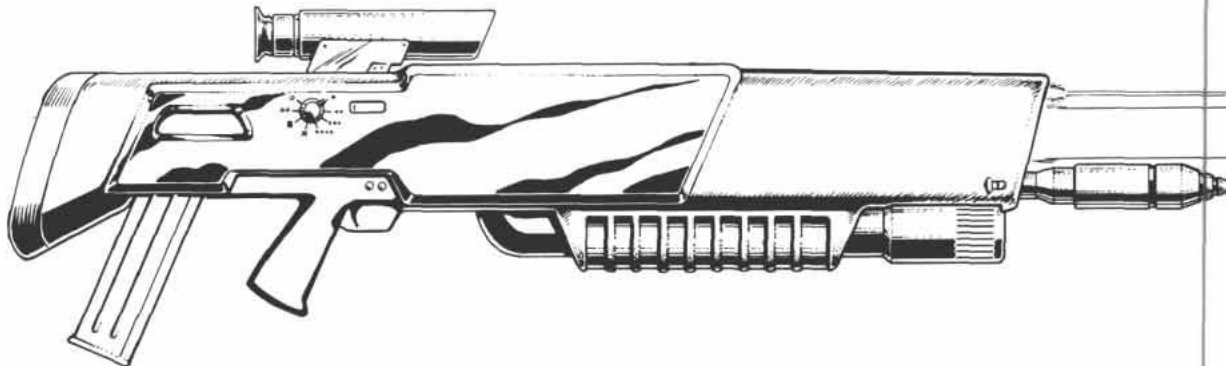


Security Clearance



28 IX 1201

Date



CHEMICAL LASERS

The basic functioning of chemical lasers has already been described on page 89.

Chemical lasers have a base rate of CLCs which they may fire each combat turn, which is shown as the SA rate of fire. Each CLC expended is called a "shot." SA3 means three CLCs or shots may be fired per turn, SA5 is five per turn, etc. The energy in these shots may be expended at different rates of fire (ROF): as a single powerful pulse (SAN, where N is the number of shots that can be fired per turn), a three-pulse burst (N×3), a five-pulse burst (N×5), a 10-pulse burst (N×10), or a 50-pulse burst (N×50). All shots fired during the same combat turn must be at the same ROF. The ROF may be changed at the beginning of each combat turn at no action cost.

Most of the CLC lasers in this book are fitted with integral laser sights (see TNE, page 275) which are powered by batteries, and thus do not require the expenditure of a laser cartridge. The range of all of these laser sights is 240 meters.

TL-13 4cm Chemical Cartridge Laser Rifle

The 4cm laser rifle is the standard laser weapon used by Coalition troops. Like all laser weapons, it has penetration shortcomings, so its use is based on tactical requirements. When expecting to encounter large numbers of unarmored or partially armored troops, lasers are unsurpassed for their high automatic rates of fire and antipersonnel damage capabilities. On the other hand, in a situation where armored troops are expected, lasers are usually traded for ACRs, gauss weapons, or in extreme cases, plasma or fusion weapons.

Focal Array Diameter: 4 cm

Weapon Length: 78.47 cm

Pulse Discharge Energy: 0.04 Mj (SA3), 0.0133 Mj (3×3), 0.008 Mj (3×5), 0.004 Mj (3×10), 0.0008 Mj (3×50)

Weapon Specifications: 8.87 kg empty, 10.71 kg with full 10-round magazine, 11.51 kg with full 15-round magazine, Cr8800 weapon only

Cartridge Specifications: "16×48 CLC," actual dimensions 16.2×48.6mm Chemical Laser (0.2 Mj), 0.1 kg, Cr6 each

Magazine Specifications: 10-round box magazine: 0.84 kg empty, 1.84 kg with 10 rounds 16×48 CLC, Cr9 empty, Cr69 fully loaded with 10 rounds 16×48 CLC

15-round box magazine: 1.14 kg empty, 2.64 kg with 10 rounds 16×48 CLC, Cr12 empty, Cr102 fully loaded with 15 rounds 16×48 CLC

Features: Laser sight, Optic sight, ruggedized weapon body (to grenade standards), RAM rifle grenade adapter

Combat Performance (in Atmosphere types 6, 7)

Weapon	ROF	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Magazine	Short Range
4cm CLC Rifle-13	SA3	10-10-7-3	2-1-0-0	Nil	5	10/15*	300 (260)
	3×3	6-6-4-2	1-1-0-0	Nil	5	10/15*	300 (260)
	3×5	5-5-3-2	1-0-0-0	Nil	5	10/15*	300 (260)
	3×10	3-3-2-1	1-0-0-0	Nil	5	10/15*	300 (260)
	3×50	1-1-1-1	0-0-0-0	Nil	5	10/15*	300 (260)

*One CLC cartridge is used per SA shot or per burst, not one cartridge per pulse in the burst.

Parentetical figure in Short Range column is the unrounded iron sight short range.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
4cm CLC Rifle-13	300	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-M	S-M-L-E	S-L-E-W (150)	W-X-0-0 (30)

CLC Lasers

TL-13 3cm Chemical Cartridge Laser Carbine

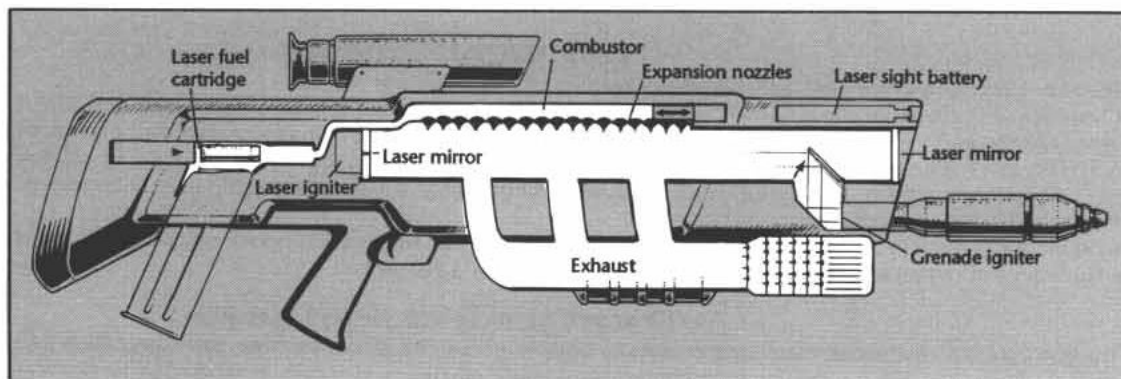
The CLC laser carbine is a lighter, cheaper, lower performance version of the laser rifle on page 94. While it is intended for use by support troops who do not have the need for the punch of the full-size rifle, it is most often used as a combat rifle by armed forces intent on economizing.

It may fire three shots per combat turn.

This carbine is built in the Reformation Coalition using TL-13 parts imported from the Hivers, including the focal array and laser cartridges.

Like all CLC lasers, laser carbines have a chemical purge system (illustrated below). The purpose of this purge system is twofold: to eliminate the thermal and sound signatures of an open evacuator, and to neutralize the highly toxic chemical byproducts of the chemical laser process. During the evacuation cycle, which is continuous throughout the pulse generation period, the spent chemical gases are drawn from the combustion chamber into a receiving cannister. On some CLC laser designs, this cannister is called a purge can, and is disposable. Once it is filled with spent chemicals, the cannister is discarded and replaced with another. Some of these purge cannisters contain catalysts to detoxify the chemicals, while some purge cans merely hold the poisonous material until it eventually corrodes its way out, years or decades later.

More advanced designs, including all of those manufactured by the Coalition, use a safer and more convenient method. The spent chemical gas is pumped into a multi-stage catalyst cannister. Here, the evacuation cycle of each succeeding shot pushes the spent gas farther forward through one-way valves into successive cells of the cannister where catalysts render it non-toxic and it is cooled to the background temperature. The harmless gas is eventually vented out of the end of the cannister, at the front of the rifle, once it has cooled to the point that it no longer presents a thermal signature. The catalysts in the cannister need to be replenished periodically, and this is done as part of the normal field stripping/servicing procedure.



Focal Array Diameter: 3cm

Weapon Length: 64.32 cm

Pulse Discharge Energy: 0.02 Mj (SA3), 0.00667 Mj (3x3), 0.004 Mj (3x5), 0.002 Mj (3x10), 0.0004 Mj (3x50)

Weapon Specifications: 4.78 kg empty, 5.7 kg with full 10-round magazine, 6.1 kg with full 15-round magazine, Cr4650 weapon only

Cartridge Specifications: "13x39 CLC," actual dimensions 12.86x38.6 mm Chemical Laser (0.1 Mj), 0.05 kg, Cr3 each

Magazine Specifications: 10-round box magazine: 0.42 kg empty, 0.92 kg with 10 rounds 13x39 CLC, Cr5 empty, Cr35 fully loaded with 10 rounds 13x39 CLC

15-round box magazine: 0.57 kg empty, 1.32 kg with 15 rounds 13x39 CLC, Cr6 empty, Cr51 fully loaded with 15 rounds 13x39 CLC

Features: Laser sight, optic sight, ruggedized weapon body (to grenade standard), RAM rifle grenade adapter

Combat Performance (in Atmosphere types 6, 7)

Weapon	ROF	Dam Dice		Pen Rtg	Bulk	Magazine	Short Range
		(S-M-L-E)	(W-X-Y-Z)				
3cm CLC Carbine-13	SA3	7-5-3-1	1-0-0-0	Nil	4	10/15*	300 (260)
	3x3	4-3-2-1	0-0-0-0	Nil	4	10/15*	300 (260)
	3x5	3-2-1-1	0-0-0-0	Nil	4	10/15*	300 (260)
	3x10	2-2-1-0	0-0-0-0	Nil	4	10/15*	300 (260)
	3x50	1-1-0-0	0-0-0-0	Nil	4	10/15*	300 (260)

*One CLC cartridge is used per SA shot or per burst, not one cartridge per pulse in the burst.

Parenthetical figure in Short Range column is the iron sight short range.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
3cm CLC Carbine-13	300	S-S-S-S	S-S-S-S	S-S-S-M	S-S-M-L	S-M-L-E	M-L-E-W (150)	W-0-0-0 (30)

Security Clearance

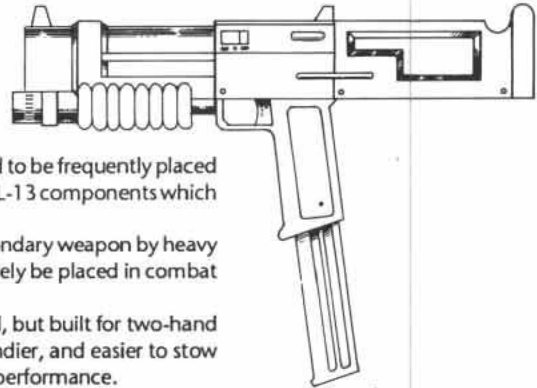


28-IX-1201

Date



TL-13 2cm Chemical Cartridge Laser Pistol and 2cm Personal Defense Laser (PDL)



The 2cm laser pistol is a standard laser sidearm used by personnel who are not intended to be frequently placed in combat. Like the other TL-13 laser weapons produced by the Coalition, it requires key TL-13 components which are imported from the Hivers, such as its focal array and ammunition cartridges.

The PDL is a standard lightweight laser used by officers and vehicle crews, and as a secondary weapon by heavy weapons crews or equipment operators. These are personnel who are expected to routinely be placed in combat situations where the 2cm laser pistol's range is insufficient.

The PDL is a redesigned 2cm CLC laser pistol, using the same laser "guts" as the pistol, but built for two-hand firing, ruggedized for harder use, and with a greater magazine capacity. It is lighter, handier, and easier to stow than the TL-13 CLC laser carbine, although it naturally has significantly lower combat performance.

Because it is essentially the laser version of a submachinegun, it is not intended for aimed long-range fire, but for use at short ranges, primarily "spraying" at high pulsed rates of fire.

Unlike the pistol, the PDL has no optic sights, and its short range is actually "de-rated" from 260 to 200 meters in order to take full advantage of its effective range.

The PDL is ruggedized to melee standards not in order to have a bayonet lug (it doesn't), but because the weapon is expected to take a good deal of abuse by being tossed into vehicles, banged by ammo boxes and tripods, etc.

TL-13 2cm Chemical Cartridge Laser Pistol

Focal Array Diameter: 2cm

Total Weapon Length: 42.43 cm

Pulse Discharge Energy: 0.01 Mj (SA3), 0.0033 Mj (3x3), 0.002 Mj (3x5), 0.001 Mj (3x10), 0.0002 Mj (3x50)

Weapon Specifications: 2.64 kg empty, 3.26 kg with full 14-round grip magazine, Cr2535 weapon only

Cartridge Specifications: "10x30 CLC," actual dimensions 10.2 x 30.6 mm Chemical Laser (0.05 Mj), 0.025 kg, Cr1.5 each

Magazine Specifications: 14-round grip type, 0.27 kg empty, 0.62 kg with 14 rounds 10x30 CLC, Cr3 empty, Cr24 fully loaded with 14 rounds 10x30 CLC

Features: Laser sight, Optic sight, ruggedized weapon body (to grenade standards)

TL-13 2cm Chemical Cartridge Personal Defense Laser (PDL)

Focal Array Diameter: 2cm

Total Weapon Length: 49.4 cm

Pulse Discharge Energy: 0.01 Mj (SA3), 0.0033 Mj (3x3), 0.002 Mj (3x5), 0.001 Mj (3x10), 0.0002 Mj (3x50)

Weapon Specifications: 2.82 kg empty, 3.88 kg with full 25-round magazine, Cr2398 weapon only

Cartridge Specifications: "10x30 CLC," actual dimensions 10.2 x 30.6 mm Chemical Laser (0.05 Mj), 0.025 kg, Cr1.5 each

Magazine Specifications: 25-round extended grip type, 0.435 kg empty, 1.06 kg with 25 rounds 10x30 CLC, Cr5 empty, Cr42.5 fully loaded with 25 rounds 10x30 CLC

Features: Laser sight, double-ruggedized weapon body (to melee standards)

Combat Performance (in Atmosphere type 6, 7)

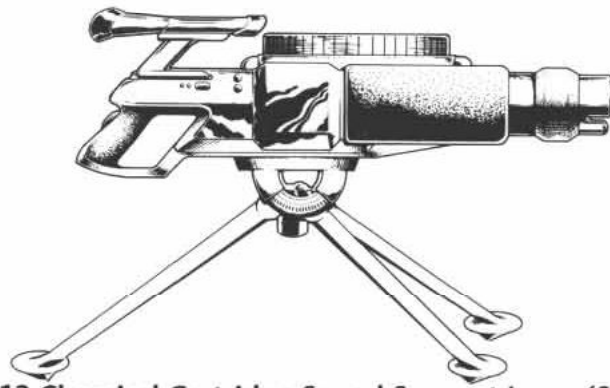
Weapon	ROF	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Magazine	Short Range
2cm CLC Pistol-13	SA3	5-5-3-1	1-0-0-0	Nil	2	14*	90
	3x3	3-3-2-1	0-0-0-0	Nil	2	14*	90
	3x5	2-2-1-1	0-0-0-0	Nil	2	14*	90
	3x10	2-2-1-0	0-0-0-0	Nil	2	14*	90
	3x50	1-1-0-0	0-0-0-0	Nil	2	14*	90
2cm CLC PDL-13	SA3	5-3-1-1	1-0-0-0	Nil	3	25*	200
	3x3	3-1-1-0	0-0-0-0	Nil	3	25*	200
	3x5	2-1-1-0	0-0-0-0	Nil	3	25*	200
	3x10	2-1-0-0	0-0-0-0	Nil	3	25*	200
	3x50	1-0-0-0	0-0-0-0	Nil	3	25*	200

*One CLC cartridge is used per SA shot or per burst, not one cartridge per pulse in the burst.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
2cm CLC Pistol-13	90	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-M	S-M-L-E	S-L-E-W (50)	W-0-0-0 (10)
2cm CLC PDL-13	200	S-S-S-S	S-S-S-S	S-S-S-M	S-S-M-L	S-M-L-E	M-L-E-0 (100)	W-0-0-0 (20)

Laser Heavy Weapons



TL-13 Chemical Cartridge Squad Support Laser (SSL)

The TL-13 Squad Support Laser (SSL) is a powerful heavy infantry weapon used by RC ground forces. Because it uses technologies above the current manufacturing capabilities of RC worlds, it is manufactured using crucial internal components purchased from the Hivers, such as its focal array and the chemical cartridges themselves.

The SSL is heavy, and, when not vehicle mounted, requires a crew of three due to the weight of its components. One crewmember carries the laser (59 kg), one carries the ammunition box (73 kg), and one carries the tripod (66 kg). Once the laser is set up, one crew serves as the gunner, another as the spotter, and another as security/ammunition runner.

There is also a special version of the SSL used in an integral mount on the right shoulder of the Schalli battle dress (page 23). The SBD version of the SSL is used with a 50-round magazine as shown below.

The SSL also comes in a vehicle-mounted version without the pistol grip, laser and optical sights, and built for use with cassette-fed ammo for Cr57,360. This weapon is fitted in a standard remote turret with TL-12 fire control, and ballistic computers, a 2000-round cassette, and advanced stabilization with firing characteristics identical to those below (plus the 4 Diff Mod ballistic computer bonus). This installation, including the fire control components at the gunner's remote station masses 1.18877 tonnes, has a volume of 4.1277 cubic meters, and costs Cr244,895 exclusive of ammo (full load of 2000 rounds costs Cr54,000). See page 138 for a starship installation.

Focal Array Diameter: 6cm

Weapon Length: 132.13 cm

Pulse Discharge Energy: 0.18 Mj (SA5), 0.06 Mj (5x3), 0.036 Mj (5x5), 0.018 Mj (5x10), 0.0036 Mj (5x50)

Weapon Specifications: 59.39 kg empty, 132.47 kg with full 100-round box magazine, 198.72 kg mounted on tripod, 96.47 in Schalli battle dress configuration with full 50-round box magazine, Cr57,835 weapon only

Cartridge Specifications: "27x80 CLC," actual dimensions 26.7x80.2mm Chemical Laser (0.9 Mj), 0.45 kg, Cr27 each

Magazine Specifications: 100-round box magazine: 28.08 kg empty, 73.08 kg with 100 rounds 27x80 CLC, Cr280 empty, Cr2981 fully loaded with 100 rounds 27x80 CLC

50-round box magazine (used with integral SSL mounted on Schalli battle dress only): 14.58 kg empty, 37.08 kg with 50 rounds 27x80 CLC, Cr146 empty, Cr1496 fully loaded with 50 rounds 27x80 CLC

Tripod Specifications: 66.25 kg, Cr763

Features: Laser sight, Optic sight, ruggedized weapon body

Combat Performance (In Atmosphere types 6, 7)

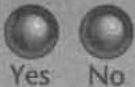
Weapon	ROF	Dam Dice (S-M-L-E)	Dam Dice (W-X-Y-Z)	Pen Rtg	Bulk	Magazine	Short Range
6cm CLC SSL-13	SA5	21-21-21-16	8-4-2-1	Nil	8	100*	300
	5x3	12-12-12-9	5-2-1-1	Nil	8	100*	300
	5x5	10-10-10-7	4-2-1-1	Nil	8	100*	300
	5x10	7-7-7-5	3-1-1-0	Nil	8	100*	300
	5x50	3-3-3-2	1-1-0-0	Nil	8	100*	300

*One CLC cartridge is used per SA shot or per burst, not one cartridge per pulse in the burst.

Atmospheric Adjustments (see page 89 for instructions)

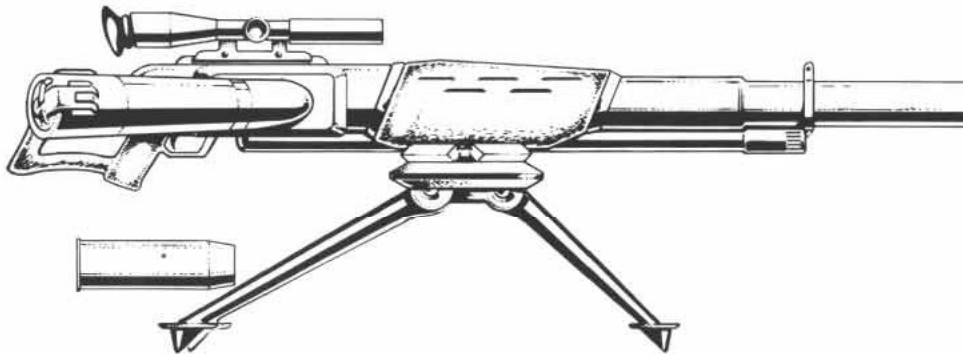
Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
6cm CLC SSL-13	300	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-S	S-M-L-E	S-S-E-W (150)	W-X-Y-Z (30)

Security Clearance



28-IX-1201

Date



TL-13 Chemical Cartridge Laser Sniper Weapon (LSW)

More commonly called the "laser can opener," the LSW is a specialized heavy infantry weapon used for taking out lightly armored targets at long ranges. Although it is capable of penetrating light battle dress at reasonable ranges, its intended use is the destruction of enemy sensors, communications antennae, etc., at long ranges.

The LSW's feed mechanism is a single-shot, manually operated breech, and is a modified version of a vehicle-mounted autoloading action. The weapon's listed ROF of 1/4 means one shot every four turns, whether at full strength or a 3-, 5-, 10-, or 50-pulse burst. Four reloading actions are required to prepare for the next shot (usually two each performed by the gunner and loader), assuming that ammunition is stored close at hand.

When ground mounted, the LSW has a crew of three; gunner, loader, and ammunition carrier. When the laser is being moved, the gunner and loader carry the weapon itself, and the ammo carrier carries five or more rounds. Because of the difficulty in man-packing enough ammunition for long engagements, the weapon is usually vehicle mounted. In RC service, the loader and ammunition carrier are each secondarily armed with a personal defense laser (page 95).

The LSW's body is not ruggedized, and hence cannot stand up to careless or abusive treatment.

Focal Array Diameter: 6 cm

Weapon Length: 152.59 cm

Pulse Discharge Energy: 3.6 Mj (1/4), 1.2 Mj (1/4x3), 0.72 Mj (1/4x5), 0.36 Mj (1/4x10), 0.072 Mj (1/4x50)

Weapon Specifications: 90.69 kg empty, 99.69 kg with a loaded cartridge, 140.69 kg empty mounted on tripod, 149.69 kg with a loaded cartridge mounted on a tripod, Cr54,815 weapon only

Cartridge Specifications: "7.2 cm CLC," actual dimensions 72x221mm Chemical Laser (0.9 Mj), 9 kg, Cr540 each

Magazine Specifications: No magazine, each round loaded individually

Tripod Specifications: 50 kg, Cr600

Features: Electronic sight

Combat Performance (in Atmosphere types 6, 7)

Weapon	ROF	Dam Val (S-M-L-E)	Dam Val (W-X-Y-Z)	Pen Rtg (S-M-L-E)	Pen Rtg (W-X-Y-Z)	Damage Dice* (S-M-L-E-W-X-Y-Z)	Bulk	Mag	Range
6 cm CLC LSW-13	1/4	5-5-5-4	2-Nil-Nil-Nil	1/2-1/2-1/2-1	1-Nil-Nil-Nil	95-95-95-71-36-18-9-4	10	SS**	300
	1/4x3	3-3-3-2	Nil	1-1-1-1	Nil	55-55-55-41-21-10-5-3	10	SS**	300
	1/4x5	2-2-2-2	Nil	1-1-1-1	Nil	42-42-42-32-16-8-4-2	10	SS**	300
	1/4x10	Nil	Nil	Nil	Nil	30-30-30-23-14-6-3-1	10	SS**	300
	1/4x50	Nil	Nil	Nil	Nil	13-13-13-10-5-3-1-1	10	SS**	300

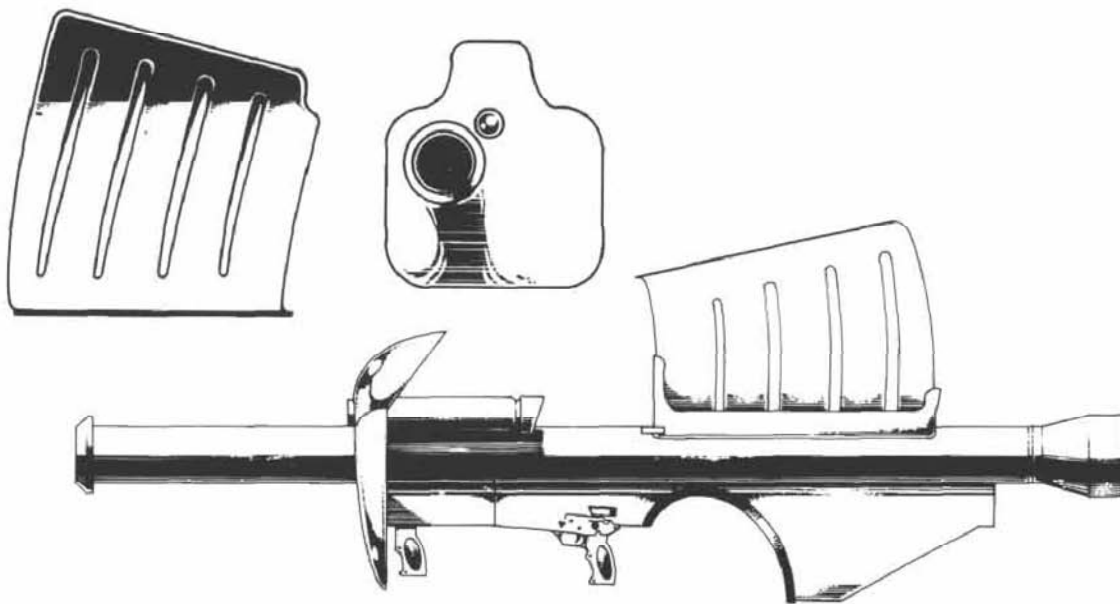
*Listed Damage Dice are for direct hits on personnel or animal targets without first penetrating armor. When penetrating armor, lasers spend points of *damage value* to achieve penetration. After determining the amount of damage value expended in penetrating the armor, multiply the remaining damage value by 25. This is the number of *damage dice* applied against the target.

**One CLC cartridge is used per SA shot or per burst, not one cartridge per pulse in the burst.

Atmospheric Adjustments (see page 89 for instructions)

Weapon	SR	Vacuum	Trace	VThin	Thin	Standard	Dense	Exotic
6 cm CLC LSW-13	300	S-S-S-S	S-S-S-S	S-S-S-S	S-S-S-S	S-M-L-E	S-S-E-W (150)	W-X-Y-Z (30)

Rocket and Grenade Launchers



TL-10 6cm Assault Rocket Launcher

The assault rocket launcher (ARL) is a shoulder-fired infantry support weapon that fires a variety of 6cm direct fire rockets. Like the plasma bazooka from the same tech level (page 85), the ARL is manufactured primarily for use by RC-supported "Bootstrap" forces.

As the ARL is merely a rocket-launching tube with a box magazine-fed autoloader on top of it, it generates no recoil. However, the backblast from the rocket motor generates a distinctive and easily observed visual and thermal signature, and makes it impractical for firing from enclosed structures.

The weapon comes with simple optical sights, and the range listed is its maximum achievable range, as free-flight unguided rockets are only so accurate. Laser or electronic sights (to enable night vision) can be fitted at additional cost.

By mounting multiple ARLs in the back of a small vehicle, such as a range truck or air raft, field-expedient rocket artillery launchers may be created.

Weapon Caliber: 6cm

Weapon Length: 190 cm

Weapon Specifications: 6 kg empty, 18.32 kg with full 4-round magazine, 22.8 kg with full 6-round magazine, Cr210 weapon only

Round Specifications: 6cm high-velocity rocket, 1.4 kg, 49.5 cm long; Price varies by type: HE = Cr12.4; HEAP = Cr18.4; WP = Cr24.4; Flechette = Cr60.4

Magazine Specifications: 4-round box magazine: 6.72 kg empty, 12.32 kg loaded with 4 rockets, Cr68 empty, loaded price varies with ammunition type

6-round box magazine: 8.4 kg empty, 16.8 kg loaded with 6 rockets, Cr84 empty, loaded price varies with ammunition type

Features: Optic sight

The table below shows the combat values for the types of rockets that may be fired by the 6cm ARL-10. *Con-Brst* is the warhead's concussion and burst values, *Pen Val* is the warhead's penetration value, *Dngr Spc* is the width x length of the flechette primary danger space in meters, *Dam Val* is the damage value of flechettes in the primary/secondary danger space, and *Pen Rtg* is the penetration rating of flechettes in the primary/secondary danger space.

SR is direct fire short range in meters, *IFR* is maximum indirect fire range in kilometers.

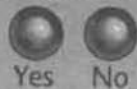
Weapon	ROF	Con-Brst	Pen Val	Dngr Spc	Dam Val	Pen Rtg	Bulk	Mag	SR	IFR
6cm HE	1*	9-35	2C	—	—	—	12	4	200	23
6cm HEAP	1*	6-25	65C	—	—	—	12	4	200	23
6cm WP	1*	2-15	Nil	—	—	**	12	4	200	23
6cm Flechette	1*	—	Nil	10x50	2D6/1D6	1/Nil	12	4	200	23

*One shot per combat turn, not per fire action.

**See burns, TNE page 286.

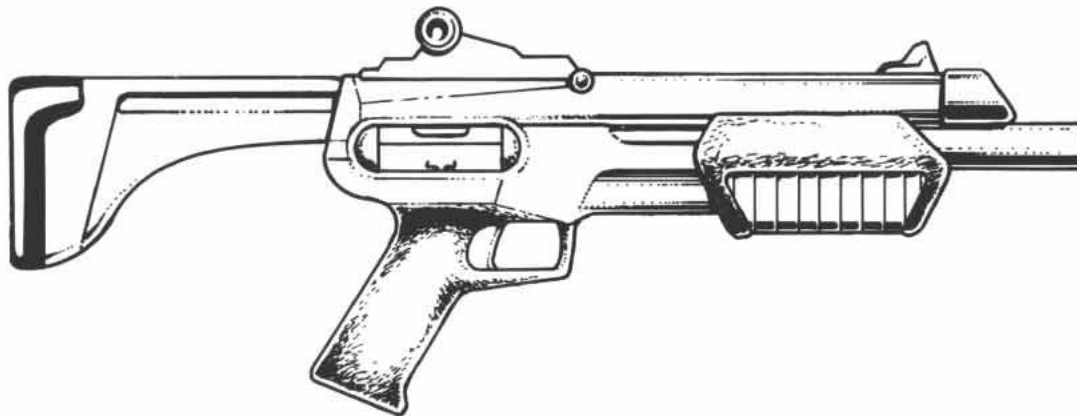


Security Clearance



28-IX-1201

Date



2.5cm Low-Velocity Grenade Launcher

This weapon was designed first and foremost as an integral part of the 5.5mm assault rifle (discussed on pages 52-53), using a pre-Collapse round. It was a simple design step, however, to add a folding stock and issue the weapon separately.

At present, only two types of rounds are manufactured, HE and HEAP, as these are the two most useful in such a small grenade. When attaching this weapon to another rifle, the shoulder stock is removed. Data for this variant is provided separately.

Shoulder-Fired 2.5cm Low-Velocity Grenade Launcher

TL: 10

Ammo: 2.5 cm low-velocity propelled grenades

Average Muzzle Energy: 253 joules

Weapon Length: 42.5/62.5 cm

Weapon Weight: 3.45 kg (loaded), 3 kg (empty)

Weapon Price: Cr550

Magazine: 5-round internal tubular magazine

Grenade Price: Cr0.9 (HE), Cr1.35 (HEAP)

Grenade Weight: 90 grams each

Features: Folding stock

Attached 2.5cm Low-Velocity Grenade Launcher

Where the data duplicates the shoulder-fired version, it is omitted

Weapon Length: 37.5 cm

Weapon Weight: 2.95 kg (loaded), 2.5 kg (empty)

Weapon Price: Cr500

Features: None

2.5cm Low-Velocity GL

Type	Range	IFR	Damage	Pen Val	Bulk	Magazine	Recoil*
2.5cm HE	100	400	C: 2, B: 15	Nil	2/4	5i	1
2.5cm HEAP	100	400	C: 1, B: 5	23C	2/4	5i	1

*Recoil when fired separately or when attached to any rifle.

Effects on Recoil of Other Weapons

The 2.5cm grenade launcher may be attached to any weapon with a barrel 37.5cm or longer. The following weapons have the recoils noted below when the 2.5cm GL is attached:

4mm Gauss Rifle: Ball, DS, HE, & HEAP: SS:1 Burst 4/7; Tranq: SS: 1 Burst 3/6

5mm Assault Rifle: Ball, DS, HE, & HEAP: SS:2, Burst 1; Tranq: SS: 2, Burst: 4

7mm ACR: Ball, DS, HE, & HEAP: SS:1, Burst, 2; Tranq: SS: 1, Burst 2

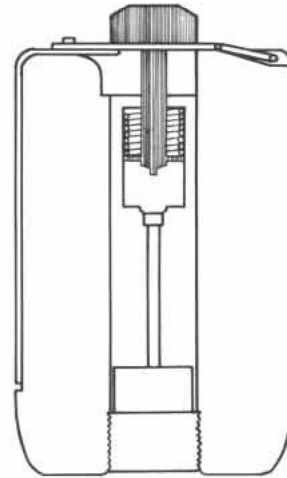
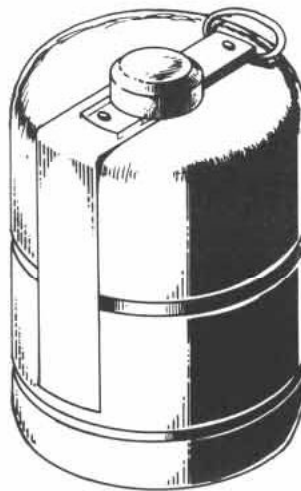
7mm Assault Rifle: Ball, DS, HE, & HEAP: SS: 2, Burst: 5; Tranq: SS: 2, Burst: 4

7mm Auto Rifle: Ball, DS, HE, & HEAP: SS:3, Burst 7; Tranq: SS: 3, Burst 6

7mm TL-5 Rifle Mil & Civ: Ball, DS, HE, & HEAP: SS: 3, Burst —; Tranq: SS: 3, Burst —

9mm TL-7 Rifle: Ball, DS, HE, & HEAP: SS:3 Burst: —; Tranq: SS: 3, Burst —

Grenades and Pyrotechnic Signals



GRENADES AND PYROTECHNIC SIGNALS

Hand Grenades

Hand grenades are small portable explosive or pyrotechnic devices primarily designed to be thrown. Hand grenades are present on all worlds with tech levels sufficient to manufacture them. Range and deviation of thrown weapons are discussed on TNE, page 282.

HE/Frag: These grenades are the most common, and are designed to inflict damage by throwing fragments in all directions.

HEAP: HEAP hand grenades are designed to penetrate armor by means of a shaped charge, and usually have fins, a streamer, or some other form of stabilization to ensure that the warhead lands in the proper orientation with relation to the target.

Chem: These grenades do damage by dispersal of a chemical agent rather than by explosive power. The effects of various chemicals used in them are discussed in the chemical warfare rule (TNE, page 306).

WP/IS: These grenades are filled with compounds which release clouds of smoke when ignited. IS comes in various colors (red, green, yellow, purple, and white), WP comes only in white. All of these grenades are a source of ignition, and WP grenades throw burning fragments (see Burns, TNE, pages 286-287).

ILLUM: ILLUM grenades produce a very bright light, but unlike propelled ILLUM rounds, they are not launched into the air, but remain where they land. They light up a smaller area than airburst pyrotechnics.

Concussion: Concussion grenades are specialized versions of HE grenades designed to have a more powerful explosion but no lethal fragmentation.

Thermite: These are extremely hot incendiary grenades designed for destruction of equipment such as artillery tubes or vehicle engines. Thermite grenades generate enough heat to melt most metals after a few seconds of contact and actually produce small streams of molten iron as their filler burns. They are a source of ignition, and throw burning fragments like WP grenades (see Burns, TNE, pages 286-287).

Mass: 0.35 kg (all types)

Price: HE/Frag: Cr3.5
HEAP: Cr5.25
Chem: Cr3.5
WP/IS: Cr7
ILLUM: Cr3.5
Concussion: Cr3.5
Thermite: Cr3.5

Hand Grenades

Type	Range	Dam	Pen Val.
HE/Frag, Tls 4-5	*	C: 2, B: 5	Nil
HE/Frag, Tls 6-7	*	C: 3, B: 15	Nil
HE/Frag, Tls 8-9	*	C: 4, B: 15	Nil
HE/Frag, TL 10+	*	C: 5, B: 15	Nil
HEAP, TL 5	*	C: 2, B: 5	11C
HEAP, TL 6	*	C: 2, B: 5	20C
HEAP, TL 7	*	C: 2, B: 5	29C
HEAP, TL 8	*	C: 3, B: 5	38C
HEAP, Tls 9+	*	C: 3, B: 5	47C
Chem Tls 4+	*	C: 2, B: 3	Nil
WP/IS	*	C: 2, B: 5	Nil
ILLUM, Tls 4-5	*	C: 0, B: 65	Nil
ILLUM, Tls 6-7	*	C: 0, B: 95	Nil
ILLUM, Tls 8-9	*	C: 0, B: 125	Nil
ILLUM, Tls 10+	*	C: 0, B: 165	Nil
Concussion, Tls 4-5	*	C: 3, B: 0	Nil
Concussion, Tls 8-9	*	C: 6, B: 0	Nil
Concussion, Tls 10+	*	C: 8, B: 0	Nil
Thermite, Tls 4+	*	C: 2, B: 5	Nil

* See Thrown Weapons (TNE, page 282) for range and deviation.

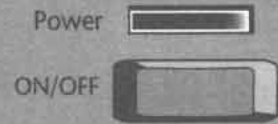
Security Clearance

Yes No

28-IX-1201

Date

Reformation Coalition Equipment Guide

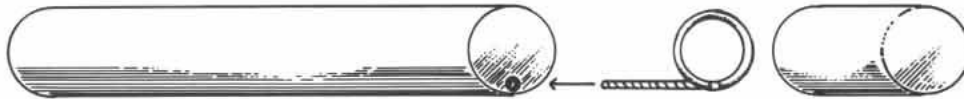


Pyrotechnic Signals

Flare: These devices are ignited to produce an intense, extremely bright light and are used for signaling and illumination. The user removes a safety cap, pulls the ignition pin, and the flare ignites a few seconds later. Flares manufactured before TL-8 are a source of ignition and burn for 30 seconds (6 turns), during the last half of which they inflict damage on the person holding them (in the relevant arm). These flares inflict burn damage as if they were a single WP fragment. At TL-8 and after, flares are manufactured based on cold-light technology, and are no longer sources of burn damage or ignition, but are otherwise identical to earlier flares.

Flares illuminate an area depending upon their tech level, as noted by the following table.

TL	Diameter of Area Illuminated
4-5	15 m
6-7	15 m
8-9	25 m
10+	35 m



Starburst: Sometimes called parachute flares, these signals contain a small rocket charge to launch the signal skyward, where it deploys a small parachute before it ignites. The signal then drifts to the ground over a period of 30 seconds (6 turns), at which point it is extinguished. Otherwise, starbursts are identical to flares (they become cold-light at TL-8, etc.), except that the diameter of the area they illuminate is increased, as noted on the following table. Starbursts are normally launched from the hand by pulling a firing lanyard (directing the business end upwards).

TL	Diameter of Area Illuminated
4-5	25 m
6-7	35 m
8-9	50 m
10+	65 m

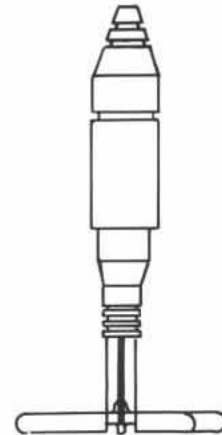
4cm RAM Grenades

These are described in the basic rules, page 357. RAM and rifle grenades below were used almost universally in the Imperium, and are widely distributed in the new era, used in the Wilds and by the Coalition.

Mass: 0.48

Price: HE: Cr48, HEAP: Cr72, APERS: Cr240, CHEM: Cr48, WP/IS: Cr96, ILLUM: Cr48.

Type	Range	IFR	Damage	Pen Val
4cm RAM HE-8	30	500	C: 3, B: 15	Nil
4cm RAM HEAP-8	30	500	C: 2, B: 5	33C
4cm RAM APERS (Flechette)-8	30	500	C: *, B: 6	Nil
4cm RAM CHEM-8	30	500	C: 2, B: 3	Nil
4cm RAM WP/IS-8	30	500	C: 2, B: 5	Nil
4cm RAM ILLUM-8†	30	500	C: 0, B: 195	Nil
4cm RAM HE-9	40	550	C: 3, B: 15	Nil
4cm RAM HEAP-9	40	550	C: 2, B: 5	41C
4cm RAM APERS (Flechette)-9	40	550	C: *, B: 8	Nil
4cm RAM CHEM-9	40	550	C: 2, B: 3	Nil
4cm RAM WP/IS-9	40	550	C: 2, B: 5	Nil
4cm RAM ILLUM-9†	40	550	C: 0, B: 195	Nil



* 2D6 in primary radius, 1D6 in secondary radius. Flechette penetration is for the whole round; should it strike an armored surface, penetration for the flechettes is as for normal fragments.

†RAM ILLUM rounds are parachute rounds with a duration of 30 seconds (6 combat turns).

Rifle Grenades (6cm), TL-5

The use of rifle grenades is explained on pages 280-282 of the basic game.

Mass: 1.5 kg

Price: HE: Cr15, HEAP: Cr22.5, Chem: Cr15, WP/IS: Cr30, ILLUM: Cr15.

Type	IFR	Damage	Pen Val
6cm RG-5 HE	*	C: 4, B: 15	2C
6cm RG-5 HEAP	*	C: 3, B: 15	17C
6cm RG-5 Chem	*	C: 2, B: 5	Nil
6cm RG-5 WP/IS	*	C: 2, B: 15	Nil
6cm RG-5 ILLUM	*	C: 0, B: 225	Nil

* Range varies with the damage value of the rifle or carbine firing the grenade.

Rifle Grenade Range

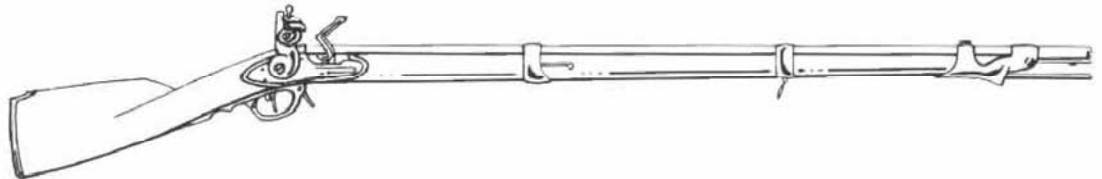
Dam Val	Indirect Fire Range
2	123 m
3	158 m
4	193 m
5	228 m

Low-Tech Weapons

LOW-TECH WEAPONS

The weapons on these two pages are representative of those in use on the deeply regressed worlds of the Wilds. These are the only pieces of equipment in this book that were not designed with the Fire, Fusion, & Steel design sequences. They were designed using the black-powder weapons and bow design sequences in the *World Tamer's Handbook*.

The "Reload" column in the combat performance tables shows the number of *actions* (not turns, i.e., high-Initiative characters can perform more than one action per combat turn) required to reload the weapon. The tech level "3M" listed below indicates a *mature* TL-3 society which has more innovations available to it than one which has just barely crossed the TL-3 threshold.



Smoothbore Flintlock Musket

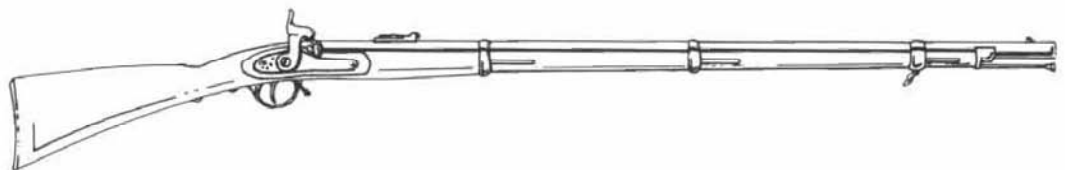
A flintlock uses a spring-loaded flint-and-steel striker to ignite the main powder charge in a gun barrel. The weapon illustrated is typical of numerous archaic designs in use on very low TL worlds, and in the hands of poorly equipped militias and insurgents on worlds with higher technology levels. Because of its short range and poor accuracy, smoothbore muskets are most effective when used by massed bodies of soldiers exchanging volley fire.

This weapon holds one individually loaded round inserted in the muzzle, and requires two actions to reload. If prepared paper cartridges are not available, the weapon may be loaded using loose powder and ball, but this takes one additional action.

TL: 3
Ammo: 18x52mm black powder and ball in paper cartridge
Muzzle Energy: 1446 joules
Weapon Length: 130 cm
Weapon Weight: 5.19 kg loaded, 5.15 kg empty

Weapon Price: Cr390
Magazine: None
Ammunition Price: Cr0.4 (Ball)
Ammunition Weight: 40 grams per round
Features: Bayonet lug.

Round	Reload	Dam Val	Pen Rtg	Bulk	Magazine	Recoil		Short Range
						SS	Burst	
18mm P&B	2	3	Nil	8	1i	1	—	30



Rifled Musket

Rifled muskets of the type illustrated are more advanced archaic firearms. Using a rifled barrel and a conical bullet, the rifle musket achieves greater range and damage than the smoothbore version, and the percussion cap ignition system results in fewer misfires. Soldiers using these weapons are able to make use of more modern tactics and need not resort to massed volleys (although the weapons are sometimes used in that fashion).

This weapon holds one individually loaded round inserted in the muzzle, and requires two actions to reload. If prepared paper cartridges are not available, the weapon may be loaded using loose powder and ball, but this takes one additional action.

TL: 3M
Ammo: 12x76mm black powder and ball in paper cartridge
Muzzle Energy: 2010 joules
Weapon Length: 110.8 cm
Weapon Weight: 4.41 kg loaded, 4.37 empty

Weapon Price: Cr560
Magazine: None
Ammunition Price: Cr0.43 (Ball)
Ammunition Weight: 43 grams per round
Features: Bayonet lug.

Round	Reload	Dam Val	Pen Rtg	Bulk	Magazine	Recoil		Short Range
						SS	Burst	
12mm P&B	2	3	1-Nil	7	1i	2	—	80



9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	.	>

▲

▼

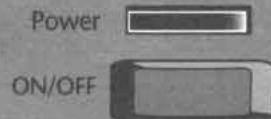
Security Clearance

Yes No

28 IX 1201

Date

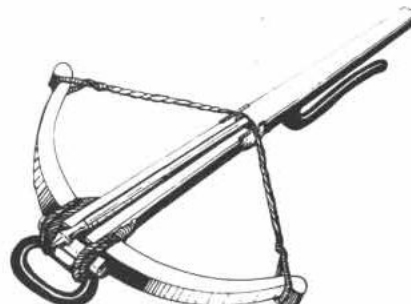
Reformation Coalition Equipment Guide



Light Crossbow

A crossbow is simply a bow fitted to a wooden stock (crosswise, hence the name), the string held in the cocked position by a simple latch and the projectile (called a bolt or quarrel) placed in a groove on the upper surface of the stock. The firer cocks the crossbow using a lever or handcrank, pulling the string back over the latch. A bolt can then be placed in the groove, and the bow held ready to fire for as long as desired. To fire, the archer simply takes aim and squeezes the firing lever or trigger.

Because of its design, the bow in a crossbow can be more powerful than an individual could otherwise use, and greater range can be achieved. Crossbows require more sophisticated construction techniques than simple bows.



TL: 2

Ammo: Bolt/quarrel
Weapon Length: 100 cm
Weapon Weight: 4 kg
Weapon Price: Cr275

Magazine: None.
Ammunition Price: Cr1
Ammunition Weight: 40 grams per bolt
Features: None.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
Bolt/quarrel	3	1	Nil	6	11	5	—	40



Short Bow

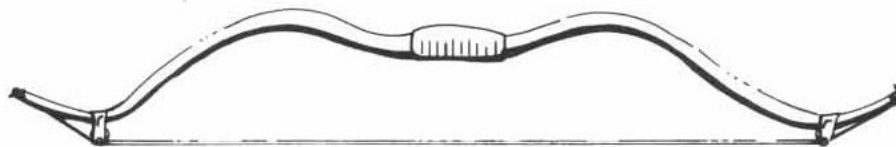
Archery is a common development on many primitive worlds, and this weapon is typical of the smaller, more compact weapons that can be encountered. The archer grasps the bow by the middle and nocks an arrow against the bowstring, where it can be held in place by finger-pressure until ready to fire. To fire, the archer draws the string back, takes aim and releases the arrow. Weapons of this type are handier when mounted on a riding animal, and are often used in such a fashion by warriors or hunters.

TL: 0

Ammo: Arrow
Weapon Length: 80 cm
Weapon Weight: 0.48 kg
Weapon Price: Cr80

Magazine: None.
Ammunition Price: Cr1
Ammunition Weight: 40 grams per arrow
Features: None.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
Arrow	1	-1	Nil	5	11	3	—	20



Long Composite Bow

Composite bows are made by carefully shaping and gluing alternating layers of different materials together. Such bows are stronger than if constructed of either material alone, but require more sophistication in their manufacture and are considerably more expensive. Such bows are often constructed to an archer's special size requirements, and are highly individualized.

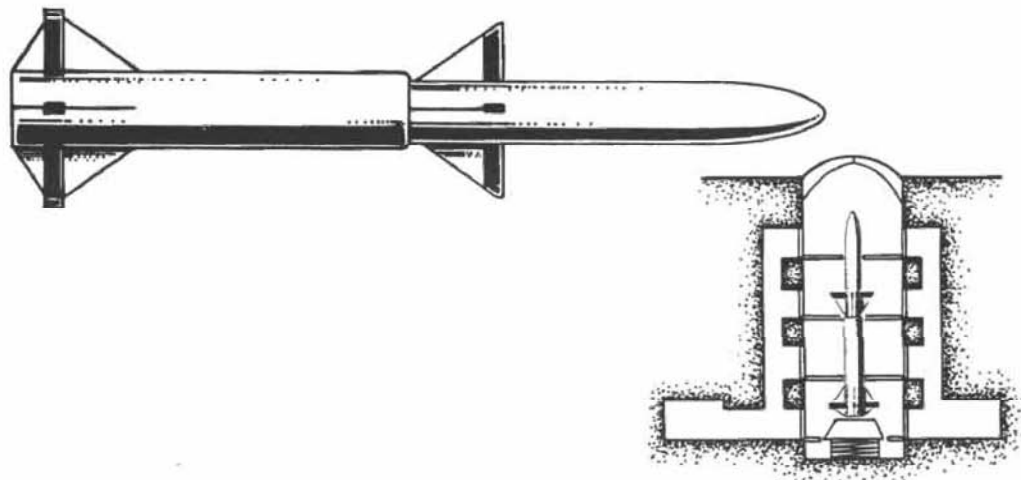
TL: 1

Ammo: Arrow
Weapon Length: 150 cm
Weapon Weight: 1.05 kg
Weapon Price: Cr300

Magazine: None.
Ammunition Price: Cr1
Ammunition Weight: 40 grams per arrow
Features: None.

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
Arrow	1	-1	Nil	10	11	7	—	30

Aerospace Defense Missiles



Planetary Defense Missiles

Aerospace or planetary defense missiles (PDMs) are one of the primary components of any world's planetary aerospace defense system (PADS). Although in Imperial times these missiles were often emplaced off-world, such as on its moons, specially built space stations, asteroids in the trojan points, etc., PDMs encountered in the Wilds are almost always launched from the surface of a world (although they may still use surviving passive or active fire control or early warning sensors deployed in orbital arrays or on moons). Most of these missiles are emplaced in hardened bunkers or silos, making them difficult to destroy from orbit without coming within the PDM's range.

For purposes of determining range to spacecraft in planetary orbit, take the world's size code (from its UPP) and multiply by 20. The result is the altitude in kilometers of a standard orbit above that world. A high orbit, typically used by ships conducting planetary bombardment, is the world's size code times 100. For all non-gas giant worlds, these orbits fit comfortably within a single starship combat range band or Brilliant Lances hex.

A selection of representative PDMs from six different tech levels are provided below, and are a cross-section of the sorts of missiles that can be encountered in the Wilds.

See the Rules Expansion section at the end of this book for a discussion of the guidance systems.

TL	Mass	Price	Guidance	Shrt Rng	Max Rng	Speed	Agility	AV	Comments
6	24.3	0.05	Radar Designated	—	221	1390	4	1	two stages
7	19.3	0.039	Radar Designated	—	297	2085	5	2	two stages
8	14.3	0.029	Radar/Laser Desig	—	403	2085	5	3	two stages
9	10.3	0.044	Dual mode Adv ARM	36	2036	6367	6	3	one stage
9	10.3	0.043	Dual mode Adv IR	20	2036	6367	6	3	one stage
10	16.3	0.068	Dual mode Adv ARM	36	3187	6230	7	3	one stage
10	16.3	0.067	Dual mode Adv IR	20	3187	6230	7	3	one stage
11	42.3	0.172	Dual mode Adv ARM	36	2140	15,429	9	3	two stages
11	42.3	0.172	Dual mode HOJ	36	2140	15,429	9	3	two stages
11	42.3	0.171	Dual mode Adv IR	20	2140	15,429	9	3	two stages

All missiles on this table have a warhead payload of 0.29 tonnes.

Mass: In tonnes; **Price:** in MCr, *not* including nuclear warhead; **Guidance:** Guidance mode of missile, Radar/Laser designated means it may use either mode, Adv ARM = advanced anti-radar missile, Adv IR = advanced infrared, HOJ = "home on jamming," a variant of ARM where guidance system homes on area jamming only (not deceptive jamming); **Shrt Rng:** Missile's short range in kilometers, where applicable to guidance type, see Rules Expansion for missiles listed with dual mode guidance and short range; **Max Rng:** Missile's maximum range in kilometers; **Speed:** In meters per 5-second combat turn; **Agility:** The missile's agility, see TNE, page 295; **AV:** Armor value of missile fuselage (any hit on the missile which penetrates this AV destroys the missile)

Security Clearance

Yes No

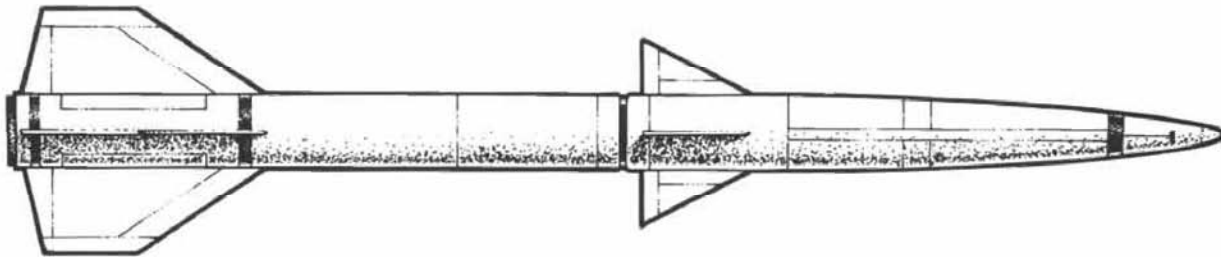
28 IX 1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 



All of these missiles are designed to be able to loft a 0.29-tonne TL-8 10-kiloton warhead into orbit. However, if higher technology relic warheads are available, these more compact and powerful warheads may be used instead. See the following table to find all of the warheads that may be fitted into that same 0.29-tonne payload. This table shows their performance in space combat, i.e., using their warheads as detonation-pumped X-ray laser generators. As these warheads may only function in this fashion in the vacuum of space, these warheads may also be used to destroy targets within the planetary atmosphere by the effects of their nuclear detonations alone. See the "Effect of Nuclear Warheads in Atmosphere" rule in the Rules Expansion section at the end of this book.

TL	Yield	Mass	MCR	Hits	Damage	Range
8	10	0.29	0.6	1D6	¹ / ₈ -25	0
9	10	0.195	0.6	1D6	¹ / ₈ -25	0
9	20	0.215	0.7	1D6	¹ / ₁₁ -35	0
9	50	0.235	0.8	1D6	¹ / ₁₄ -43	0
9	100	0.265	0.9	1D6	¹ / ₁₈ -56	0
11	10	0.16	0.6	1D6	¹ / ₈ -25	0
11	20	0.18	0.7	1D6	¹ / ₁₁ -35	0
11	50	0.2	0.8	1D6	¹ / ₁₄ -43	0
11	100	0.22	0.9	1D6	¹ / ₁₈ -56	0
11	200	0.28	1.1	1D6	¹ / ₂₁ -66	0
13	2x10	0.264	1.2	2D6	¹ / ₈ -25	0
13	20	0.148	0.7	1D6	¹ / ₁₁ -35	0
13	50	0.168	0.8	1D6	¹ / ₁₄ -43	0
13	100	0.188	0.9	1D6	¹ / ₁₈ -56	0
13	200	0.248	1.1	1D6	¹ / ₂₁ -66	0
15	2x10	0.206	1.2	2D6	¹ / ₈ -25	0
15	10	0.206	6.0	1D6	¹ / ₈ -25	1
15	2x20	0.226	1.4	2D6	¹ / ₁₁ -35	0
15	20	0.226	7.0	1D6	¹ / ₁₁ -35	1
15	2x50	0.254	1.6	2D6	¹ / ₁₄ -43	0
15	50	0.254	8.0	1D6	¹ / ₁₄ -43	1
15	100	0.147	0.9	1D6	¹ / ₁₈ -56	0
15	200	0.167	1.1	1D6	¹ / ₂₁ -66	0
15	500	0.247	1.2	1D6	¹ / ₂₅ -79	0



Yield: Warhead yield in kilotons; *Mass:* In tonnes; *MCR:* Price in millions of credits; *Hits:* Dice to roll for hits in space combat resolution; *Damage:* Penetration rating and damage value; *Range:* In starship combat range bands/Brilliant Lances hexes, 0 equals same range band/hex only.



Tac Missiles



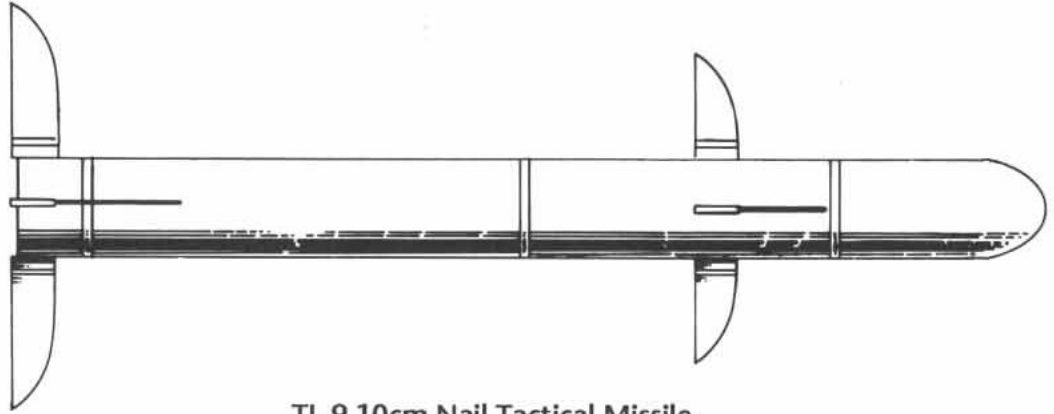
9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	.	>



Security Clearance

Yes No

28 IX-1201
Date



TL-9 10cm Nail Tactical Missile

Nail missiles are manufactured in large quantities on Oriflamme, and, with the Lyrebird remote missiles (themselves a variant of the Nail), are used as the standard infantry support tactical (tac) missiles by the RC armed forces.

The Nail is a high-speed line-of-sight (LOS) laser-designated missile, usually used in the antiarmor role. It is carried in disposable-package launchers, and was intended for use with battle dress-equipped troops then entering service among the worlds of the Dawn League. The integral 6-km laser designators installed in all RC battle dress were specifically intended for use with the Nail.

Nails may also be fired from vehicle-mounted launch rails or tube launchers. Nails are also used in four-round package launchers installed on the left shoulder of Schalli battle dress (page 23).

Nail Missile and Launcher Physical Characteristics

- Tech Level: 9
- Missile Diameter: 10cm
- Missile Guidance: Laser Designated
- Missile Mass: 14.4 kg (0.0144 tonnes) missile alone, exclusive of launcher
- Missile Volume: 14.4 liters (0.0144 cubic meters) missile alone, exclusive of launcher
- Launcher Specifications: Package launcher: 28.8 liters volume, 7.2 kg without missile, 21.6 kg with missile inside, Cr72 exclusive of missile
- Launch rail: Negligible volume, 14.4 kg rail alone, Cr720 exclusive of missile
- Launch tube: 57.6 liters volume, 57.6 kg, Cr 5760 exclusive of missile

Nail LOS Missiles Combat Performance

Type	Range	Damage	Pen Val	Price	Cbt Move	Agility
HE	6	C: 20, B: 45	8C	594	195	5
HEAP	6	C: 13, B: 35	113C	636	195	5
WP	6	C: 3, B: 35	Nil	678	195	5

Range is maximum range in kilometers; Damage is given in concussion (C) and burst radius (B) in meters; Pen Val is penetration value, Price is in Cr; Cbt Move is combat move in 10-meter grid squares per 5-second combat turn

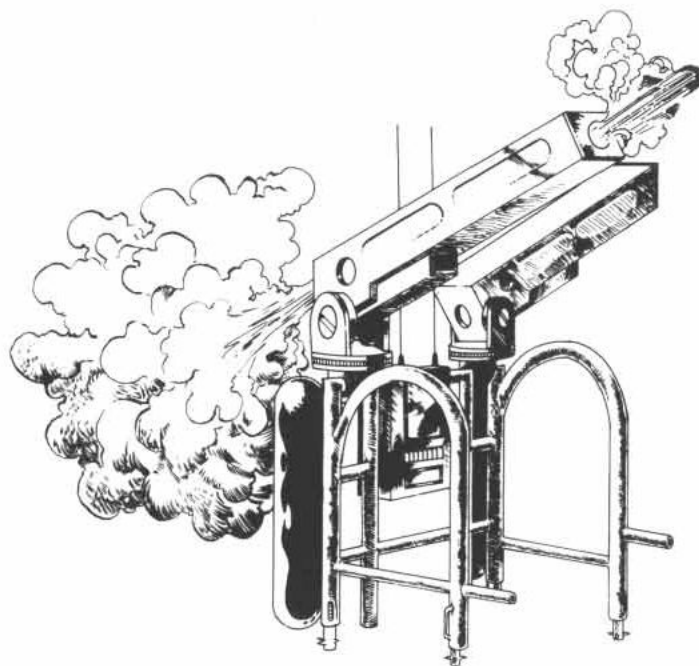
The Nail is also manufactured in two anti-aircraft homing versions, one with advanced IR (homing) guidance, and one with advanced ARM (anti-radiation homing) guidance. The IR version is used against normal aircraft and homes on their heat signature, while the ARM version homes on active emissions (usually radar, active EMS, or area jamming) coming from the aircraft. The Nail ARM will also home on ground emitters.

These missiles have the same launcher characteristics as the basic Nails above, but each Nail launch station requires a launch control unit which simply reports to the gunner that the missile's seeker has acquired the target and is ready for launch. This unit masses 0.5 kg and costs Cr500. With launch rails and tubes it is added to the crewstation of the gunner. On the package launcher it is added to the package itself, increasing the unloaded mass to 7.7 kg, loaded mass to 22.1 kg, and price to 572. The control unit may be detached from the discarded package launcher and clipped to the next one, so one controller need not be bought for each package launcher.

Nail Anti-aircraft Missiles

Type	Short Range	Damage	Pen Val	Price	Cbt Move	Agility
Nail SAM (IR) HE	750	C: 20, B: 45	8C	1594	195	5
Nail ARM HE	750	C: 20, B: 45	8C	3094	195	5

Short Range is short range in meters (homing missiles use short range for resolution rather than maximum range); other data is as on Nail LOS table above.



TL-9 10cm Lyrebird Remote Missiles

The Lyrebirds are a modified version of the Nail, and were developed to arm the remote missile launchers on the RC drop capsules (pages 14-15). For purposes of standardization, it was decided to retain the same components and dimensions of the Nail, and merely substitute a slower burning propellant to gain more range, assuming the missile is lofted onto a ballistic trajectory, which was consistent with the requirement for the drop capsule missile. This allows all Lyrebird and Nail launchers to use either missile.

Two Lyrebirds are mounted on the parachute harness of each drop capsule. When the trooper reaches the ground, he or she removes the harness, unfolds two legs, and sets it on the ground, ready to fire. The harness contains a TL-12 modified flight computer (with battery) which then takes over as the missile launch controller. The computer has a voice-recognition capability, and monitors the radio net for firing instructions from its trooper.

When the trooper is ready for a Lyrebird, he or she consults the battle dress' inertial navigator which gives the direction and distance from the touchdown point (the missile launcher location). The trooper calls the computer, gives a codeword authorizing launch, reports his range and direction from the launcher, and reports the codename of the trooper whose laser designator will be used (each battle dress suit has its laser designator tuned to pulse in a distinctive coded pattern which is recognizable by the missile's laser seeker, allowing each missile to home on the appropriate target). The computer then trains and elevates the Lyrebird package launcher to the correct angle and fires the missile, lofting it on a ballistic trajectory to arrive above the trooper's location. Once the missile arrives above the trooper, it searches for the correctly coded designated target, and dives on it from above. Because of their ballistic trajectory, all Lyrebirds are treated as overhead attack missiles (TNE, page 294). The trooper may also at any time transmit another code word that will cause the harness/launcher to self-destruct, preventing sensitive missile launch and control codes from falling into enemy hands.

Lyrebirds are notoriously slow missiles, taking about a minute to cover 6 kilometers. Thus troopers at the outer limit of the missile's range often find that they need to launch the missiles in anticipation of their fire support needs. This fact gives rise to the missile's nickname "Liarbird." (One trooper says, "I just called in a missile launch." The other looks at the sky, looks at his watch, looks at the sky again, and says, "Liar.")

Note that Lyrebirds have a theoretical maximum ballistic range of 120 km. However, because of the range limitations of battle dress radios and the length of time it would take the missile to arrive at this range, the direct fire range listed below is its practical maximum range.

The physical characteristics of the Lyrebird missiles and their launchers are the same as those of the Nail missiles on the facing page.

Lyrebird Remote Missiles Combat Performance

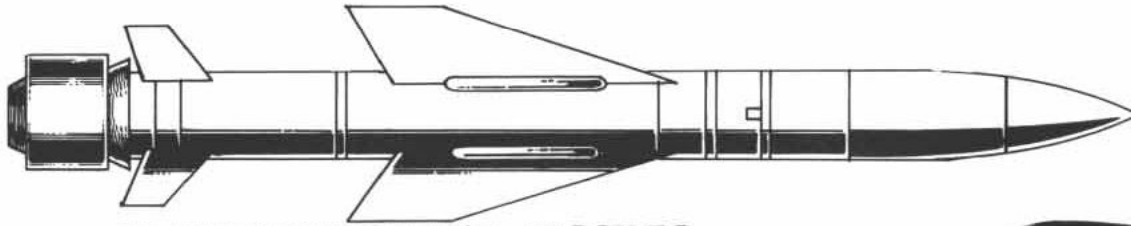
Type	Range	Damage	Pen Val	Price	Cbt Move	Agility
HE	24	C: 20, B: 45	8C	594	49	3
HEAP	24	C: 13, B: 35	113C	636	49	3
SEFOP	24	C: 10, B: 35	113C	678	49	3
Chemical	24	C: 3, B: 15	Nil	594	49	3
WP	24	C: 3, B: 35	Nil	678	49	3
Illumination	24	C: 0, B: 1225	Nil	594	49	3
Lt Submunition	24	B: 25	(TNE, page 285)	1014	49	3
Homing Lt Submn	24	B: 15	(TNE, page 285)	1350	49	3

Range is maximum range in kilometers; Damage is given in concussion (C) and burst radius (B) in meters; Pen Val is penetration value, Price is in Cr; Cbt Move is combat move in 10-meter grid squares per 5-second combat turn

Reformation Coalition Equipment Guide

Power

ON/OFF



PLANETARY STRIKE MISSILES

The Reformation Coalition manufactures a family of 30cm TL-11 missiles used for planetary strike missions. While these are primarily used for planetary bombardment and precision strike from orbit (or in the case of the Mjolnir, from drop capsules which were fired from orbit), they are also able to be fired from ground launchers in the surface-to-surface mode.

Spruce, Fir, and Pine Planetary Strike Missiles

These missiles are fired from starships in support of ground operations, usually in preparation for an orbital assault. Targets are usually command and control centers, aerospace defense sites (guidance centers and missile sites), and key military formations.

These missiles are fitted with a variety of guidance systems to allow the greatest possible mission flexibility with a limited missile loadout. The missiles of the Spruce family may use Advanced Anti-Radiation (homing) guidance, Active EMS/laser designation (usually by ground assets, but this also allows the beam-riding mode, see below), IR Target Seeker guidance, or Visual Target Seeker guidance. The missiles of the Fir family may use all of the guidance modes listed for the Spruce family, but also have Imaging Radar Target Seeker guidance. The missiles of the Pine family have only the laser designation guidance mode, and are the inexpensive orbital support version of the family. All three families contain a variety of warheads as shown on the table below.

While each Spruce or Fir missile has the capability to use any of its guidance modes before it is launched, only one of these modes is selected to guide the missile when it is launched, and it may not switch to any other mode after it has been launched. (The one exception is that these missiles may be launched in a laser beam-riding mode to guide them in close to their targets where their homing or target-seeking packages take over—see the Rules Expansion section at the end of this book.) However, each of these missiles does have a target memory back-up. If for any reason the missile loses its lock on its way down (for example, if a radar station that was being homed on by an advanced ARM mode missile went off the air, or if a laser designator was destroyed by enemy fire), the missile retains the last targeted position in its memory and will hit it. If the target was mobile, this might not help, but the missiles are fast enough that their burst radius will usually ensure a kill on even a moving target in target memory mode.

These missiles were designed with very long ranges to allow starships to hit planets from safe stand-off distances. These ranges are sufficient to allow bombardment from high orbit around any non-gas giant planet.



Warhead	Damage	Pen Val	Price (Cr: Spruce/Fir/Pine)
HE	C: 225, B: 155	38C	28,868/38,868/17,668
HEAP	C: 149, B: 125	353C	29,868/39,868/18,668
SEFOP	C: 113, B: 105	353C	30,868/40,868/19,668
Chemical	C: 3, B: 115	Nil	28,868/38,868/17,668
Heavy Submunition	C: 0, B: 225	(TNE, page 285)	38,868/48,868/27,668
Hvy Homing Subrmn	C: 0, B: 115	(TNE, page 285)	46,868/56,868/35,668
Remote Del Mines	C: 0, B: 455	(TNE, pages 304-5)	46,868/56,868/35,668
Chaff	C: 0, B: 14,400	*	30,868/—/—

*All enemy attempts to use radar or active EMS through the chaff cloud are made at +1 difficulty level, plus one additional difficulty level for each tech level by which the chaff cloud exceeds the radar. Chaff detonated at high altitude remains effective for 1D6 minutes.

Common Characteristics

Tech Level: 11
Available Guidance Modes: Advanced Anti-Radiation (Homing), AEMS/Laser Designation (and beam-riding), IR Target Seeker (Smart), Visual Target Seeker (Smart), Imaging Radar Target Seeker (Smart, Fir Only), Target Memory available in all modes
Missile Mass: 4 tonnes, 4000 kg
Missile Volume: 4 cubic meters, 4000 liters
Average Speed: 9000 kph, 12,500 meters per combat turn (1250 grid squares)
Maximum Range: 1483 km
Short Range: Adv ARM: 36 km; IR Target Seeker: 40 km (atmosphere codes 0-3) or 20 km (atmosphere codes 4+); Visual and Imaging Radar Target Seeker: 40 km
Agility: 8

Mjolnir Advanced ARM

The Mjolnir is a specialized variant of the Spruce family designed for use with the Coalition Mk IIb Drop Capsule (see pages 14-15). The Mjolnir is carried within a drop capsule among a wave of troop-carrying capsules to perform the SPAD (Suppression of Planetary Aerospace Defenses) mission. The drop capsule opens up once it is within the planetary atmosphere, dropping out the Mjolnir, which deploys a parachute. While the troop-carrying capsules streak toward their targets, the Mjolnir slowly descends, hanging beneath its parachute, with its ARM seeker scanning for enemy active fire control sensors. Upon detecting enemy radar or active EMS sites, the Mjolnir ignites, blowing off its parachute. Like the Spruce and Fir missiles above, the Mjolnir possesses the target memory feature, allowing it to kill enemy radar sites even if they shut down.

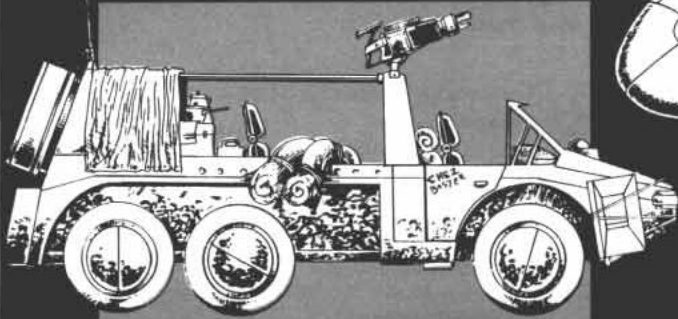
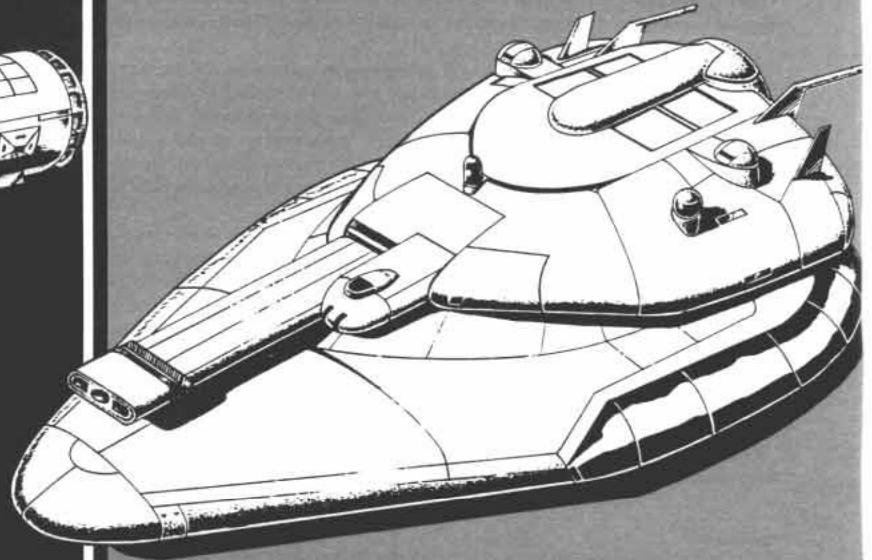
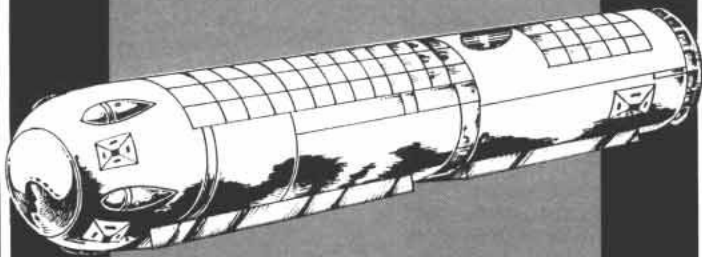
As a final backup mode, the Mjolnir also has a laser-designation mode. Because the Mjolnirs deploy their chutes early to overwatch the troops, the troops will be on the ground while the Mjolnirs are still floating far above. Any Mjolnirs still aloft when the assault wave hits the ground switch over (by radio broadcast or pre-set timer, depending upon the mission—they cannot switch back once switched to laser mode) to laser-designation mode, allowing the ground troops to call them in as artillery support by using their laser designators.

Warhead	Damage	Pen Val	Price (Cr)
HE	C: 225, B: 155	38C	15,092
Heavy Submunition	C: 0, B: 225	(TNE, page 285)	25,092
Hvy Homing Subrmn	C: 0, B: 115	(TNE, page 285)	33,092

Tech Level: 11
Available Guidance Modes: Advanced Anti-Radiation (Homing), Laser Designation (and beam riding), Target Memory available in ARM mode
Missile Mass: 2.5 tonnes, 2500 kg
Missile Volume: 2.5 cubic meters, 2500 liters
Average Speed: 10,000 kph, 13,900 meters per combat turn (1390 grid squares)
Short Range (for Homing mode): 6.44 km
Maximum Range: 51.5 km
Agility: 8



VEHICLES



VEHICLES

There are effectively an infinite number of vehicles to be encountered in the universe. Not only does each mission require a different design, but different tech levels require different technological solutions to these missions, and each different world or nation will have a different set of mission and design concepts that further multiply the number of potential vehicles. For these reasons, the vehicles on the following pages are only the lightest possible sampling of some of the vehicles that can be encountered (and designed with the *Fire, Fusion, & Steel* technical architecture sourcebook).

This selection of vehicles is intended to show the diversity of designs available, as well as to be useful to the referee who needs to produce vehicles to assist or hinder his or her players. While the mighty Intrepid grav tank (known as the Trepida during the Imperial era) represents the best that money can buy, vehicles like the "Pathie" and Charina show the best that people can come up with, under the circumstances.

The "ragtop" air raft and the "Buster" weapons carrier are also a set, showing two different Coalition solutions to a multipurpose utility vehicle, one using the best technology available, and the other using cheap, age-old technology that can be kept running almost anywhere. The Thunderchicken attack helicopter and the Mongoose and Ferret attack speeders are another example of vehicles designed to carry out exactly the same mission, but viewed through two completely different sets of technological capabilities.

Even the relatively small sample of vehicles shown here can be used in a wide variety of ways. Virtually any of these vehicles can be a relic in use in the Wilds, or the target of a hot or cold recovery mission. An RC "lift" force could consist of convertible air rafts, attack speeders, Pyrrhus sleds, or Intrepid tanks, or a non-lift force could hit the ground with Thunderchickens and Busters. These forces could find themselves opposed by local opponents with a capable, balanced force of Prairie Fires, Pandinas, and Charinas, or maybe just a sad little "Pathie."

Note that, in keeping with the principle that there are an infinite variety of vehicles and variations of those vehicles, that the vehicles on the following pages may be modified. Most of the designs have excess power, as indicated under the power entry, and most of them have excess space in the form of cargo. Additional equipment, particularly sensors, commo gear, etc., may be installed within these limits. Each kilogram of listed cargo (as opposed to ammunition capacity) is usually equivalent to four times that amount in liters. Note, however, that no electronic equipment may be installed from a tech level higher than that of the vehicle's installed control system. This additional equipment can be taken from elsewhere in this book, or from *Fire, Fusion, & Steel*. This may require the recalculation of some figures, such as vehicle speed, but this will be familiar ground to owners of *Fire, Fusion, & Steel*.

Vehicle characteristics are in the following format. **Tech Level** is the tech level the vehicle was constructed at, and not necessarily the level at which it is used. **Price** is in constant credits or megacredits, which can be adjusted for local exchange rates (see TNE, pages 230-231). **Size** is shown in cubic meters, displacement tons (each of 14 cubic meters), and includes the vehicle's target size code in parentheses. **Mass** is in metric tonnes (written simply as "tonnes"), of 1000 kg each. **Power** is in megawatts of output, and also describes thrust agencies, if any. **Maint** is maintenance points, i.e., the number of hours per week that the

vehicle requires in routine preventive maintenance. **Controls** describe the controls used to operate the vehicle, plus any avionics and navigation systems. **Commo** is communications equipment, each listed with its *short* range, used when resolving communications tasks. **Sensors** lists the sensors equipment, also listed with the short range used to resolve sensor tasks. **Life Support** describes the facilities available to the crew and passengers; basic life support provides a sealed environment with air and water, and extended life support adds recycling, food, and sanitary facilities for extended periods in the vehicle. **Cargo** is in tonnes; multiply tonnes by 4 to find the volume of this cargo area. **Crew** is the number of persons necessary to operate the vehicle. **Passengers** are persons who may be carried above the required crew. Passenger space may sometimes be converted to cargo space according to notes with the vehicle itself. **Fire Control** shows the equipment used to control the vehicle's armament. Some of these systems are listed with Diff Mods which can be ignored; these counteract difficulty modifiers to due target movement, size, etc., but may not be used to change the basic task difficulty. Fire control also includes the equipment necessary to launch specific types of missiles. A vehicle may not fire missiles for which it has no control units, unless the missile is being controlled from another location. **Armament** names the weapons carried, although specifics of their combat performance, fire control, ammunition, etc., are detailed under other headings. **Stabilization** shows equipment which allows weapons to be fired from a moving vehicle. **Ammo** lists the amount and cost of ammunition that is carried.

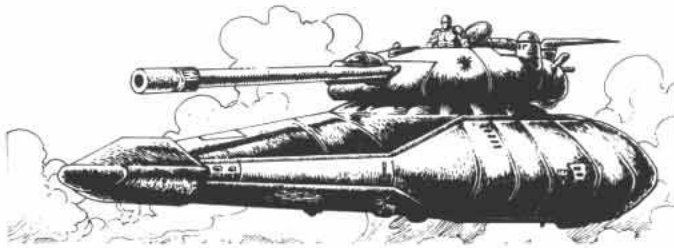
Raw figures for **Speed** in kilometers per hour are often given simply for information purposes, as the game itself uses speed defined in the following terms. **Travel Move** is in kilometers per four-hour period. For ground vehicles, this is given in road speed/cross country speed, and sometimes water speed. For aircraft, including grav vehicles, this is given in high mode and NOE mode. **Combat Move** is the distance moved in each five-second combat turn. For ground vehicles this amount is in meters, and is given in road speed/cross country speed, and sometimes water speed. For aircraft and grav vehicles, this is given in the number of 10-meter grid squares moved per combat turn, and is given in high mode and NOE mode. Note that high mode speeds are absolute speeds and NOE speeds are safe speeds which can be exceeded by up to three times by overdriving (see "Mishaps," TNE, page 292). Some vehicles have their "Agility" or target movement difficulty modifiers listed with them for quick reference, but these can be easily calculated from current speed or combat move by using the table on TNE, page 294 (note, however, that aircraft or grav vehicles flying in nape-of-the-earth (NOE) mode have these Diff Mod numbers *doubled*). **Fuel Capacity** shows type of fuel and amount in liters, while **Fuel Consumption** defines how rapidly this fuel is used, and therefore how long it will last.

Combat Statistics show the configuration of the vehicle used when resolving hits (see TNE, page 298) and its armor. TF, TS, TR, HF, HS, HR, Deck, and Belly show the armor value of the turret front, turret side, turret rear, hull front, hull side, hull rear, deck (top of hull), and belly respectively. **Susp** shows the vehicle's suspension damage value (TNE, page 299).

Where weapon performance is listed separately, it is described in the same terms used in normal weapons listings, and discussed on page 39.



Intrepid Grav Tank



TL-14 Intrepid Grav Tank

This tank was the pre-eminent symbol of irresistible armored firepower before the Collapse, and was the standard heavy grav tank of the pre-Collapse armed forces of the Last Imperium. As such it was heavily used, and its numbers heavily depleted, during the Final War. Wrecked Intrepid hulls are fairly common sights throughout the Wilds, but salvageable Intrepids are somewhat rarer.

The Intrepid fully deserves every bit of its unparalleled reputation; it is a fearsome weapon indeed, able to penetrate the equivalent of 1.28 meters of steel out to a range of 12.5 kilometers, but armored to withstand that same firepower across its frontal arc. Although the tank is expensive, it is more than a match for most starships (provided they get within its range). Curiously, Reformation Coalition researchers report that its Last Imperium name, Trepida, is associated with scurrying about with alarm or confusion, trembling, and timidity, as in "trepidation." While this name would clearly describe those who come into contact with this powerful tank, the name seems inapt to this surely fearless vehicle, so those few which have found their way into Coalition service have been renamed "Intrepid."

It is interesting to note that almost the entire price of the tank (81 million credits) is attributable to its fusion gun, valued at almost 79 million credits. These high-performance weapons are clearly difficult to maintain at the Coalition's tech level, with the result that many of the Intrepids in RC service have been re-armed with other weapons, such as hyper-velocity CPR guns. Although their offensive power is thus somewhat reduced, there is still very little in the Wilds that can hurt even an under-armed Intrepid.

Tech Level: 14

Price: MCr81.34

Size: 140 cubic meters = 10 displacement tons (VS)

Mass: 213.59 tonnes empty, 255.61 loaded

Power: TL-14 5.37 MW fusion power plant supplying 1 MW to high-efficiency contra-grav lifters, with HEPlAR thruster generating 58.65 tonnes of thrust (0.0123 MW excess power)

Maint: 43

Controls: Holographic linked, TL-10+ flight avionics, TL-14 terrain-following avionics, 3xTL-14 Model Flt flight computers, TL-10+ IGS navigation system

Commo: TL-14 3000-km radio, 2xTL-14 3-km masers

Sensors: 30-km passive EMS sensor, 3000-km passive EMS sensor, 3-km active EMS sensor, 2xWSV goggles

ECM: Electromagnetic masking package, 4 decoy dispensers each with space for 20 of any combination of anti-laser, anti-active sensor, or anti-active sensor decoys (see facing page, bottom)

Life Support: Heat, light, sealed and pressurized environment with extended life support, artificial gravity/G-compensators, and one air lock

Cargo: 324 kg of crew equipment (1.295 m³)

Crew: 2 (driver/gunner, commander)

Passengers: None

Fire Control: EMS rangefinder and TL-14 point defense ballistic computer (ignore 5 Diff Mods, and multiply Diff Mods of ballistic target by 0.5, dropping fractions)

Armament: TL-14 rapid-fire 125-Mj fusion gun

Stabilization: Advanced (fire at any speed)

Ammo: 200 rounds of 126-Mj 12x37cm PFC cartridges (Cr1000 each, MCr0.2 for full load of 200)

Speed: 717 kph maximum, 538 kph cruising (1950 kph maximum in vacuum)

Travel Move: 2152/1080 (7800/1080 in vacuum)

Combat Move: 100 (high mode absolute speed)/25 (NOE safe speed) in 10-meter grid squares (271/25 in vacuum)

Diff Mods vs. Fire: +6 at maximum speed (high mode combat move), +5 at cruising speed (high mode travel move), +8 at safe NOE speed, +10 at 2x and 3x safe NOE speed

Fuel Capacity: 2052.75 liters reaction mass plus 44.75 liters for fusion reactor

Fuel Consumption/Endurance: 733.125 liters/hour (endurance of 28 hours), plus reactor fuel is sufficient for one month constant power

Combat Statistics

Config: Turret

TF: 258

HF: 258

Susp: Grav

TS: 129

HS: 129

TR: 129

HR: 129

Deck: 129

Belly: 129

9*3	9*6	9*9
8*3	8*6	8*9
7*3	7*6	7*9
6*3	6*6	6*9
5*3	5*6	5*9
4*3	4*6	4*9
3*3	3*6	3*9
2*3	2*6	2*9
1*3	1*6	1*9
0*3	0*6	0*9
<	.	>



Security Clearance



Yes No

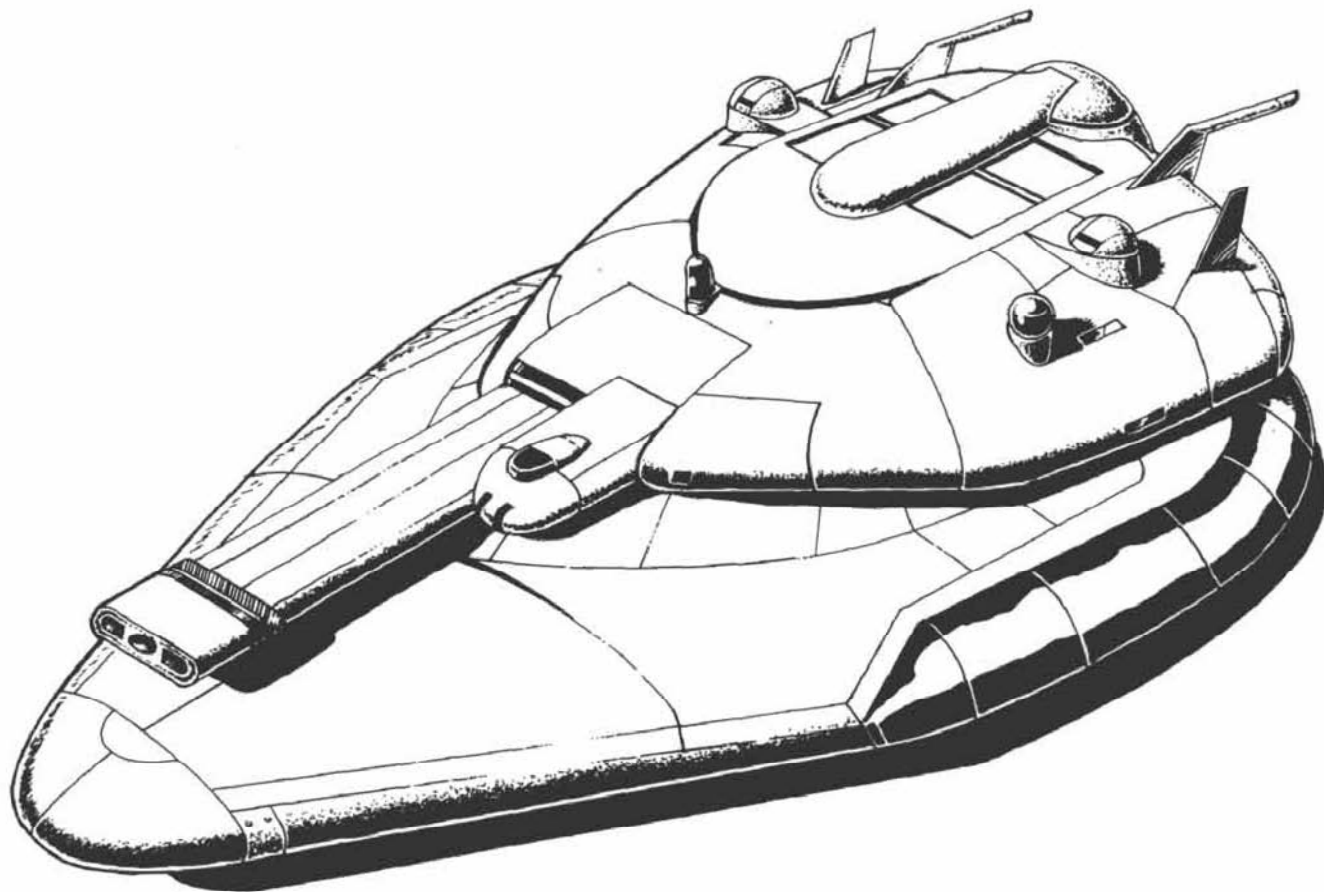
28-IX-1201

Date

Reformation Coalition Equipment Guide

Power

ON/OFF



Combat Performance

TL	Weapon	ROF	Dam Val	Pen Rtg	Pen Val	Conc-Burst	Short Range
14	125-Mj RF Fusion Gun	SA2	129	1/2-1/2-1/2-1	258-258-258-129	17-15	3000 m*

*Short range is limited by fire control maximums, and listed penetration rating and penetration values are calculated based on that 3000-meter short range. Actual weapon's performance short range is 6250 meters, with penetration rating 1/2-1/2-1-4 and penetration values 258-258-129-32.

Decoys

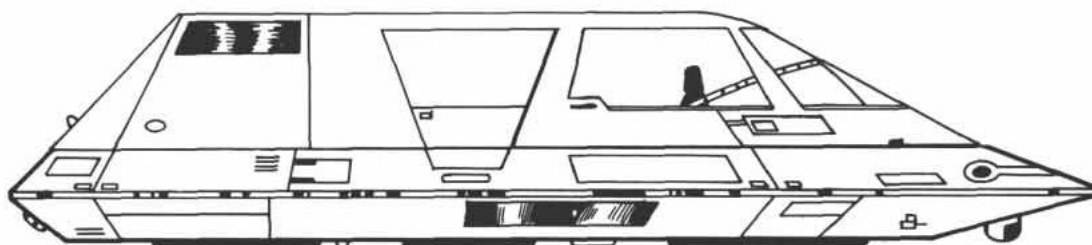
Decoys are of three types: anti-laser (which affect attempts to detect a target with ladar or to designate it with a laser designator), anti-active sensor (which affect attempts to detect a target or designate it with radar or active EMS), and anti-passive sensor (which affect attempts to detect a target with HRT or passive sensors, including infrared goggles and sights). Each decoy only works against its specified sensor, and increases the difficulty of a detection or designation task by 1 level vs. TL-14+ systems, or by 2 levels vs. TL-13- sensors. Each decoy lasts one combat turn (five seconds), and affects all appropriate sensor attempts against the owning vehicle, regardless of direction. Decoy dispensers may launch one decoy per second.

Decoys for Intrepid grav tanks cost Cr20,000 each regardless of type, or MCr1.6 for a full load of 80.

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Add-On Options

The following are some additional options that may be fitted to the air raft. Volume is subtracted from the cargo volume of 7.45 m³, and MW is subtracted from the excess power. The MW rating assumes that these items will be powered directly from the vehicle itself (obviously if battery-powered gear is installed, this will not be an issue). The listing for the 300-km passive EMS sensor assumes that the 30-km sensor will be removed, so the figures show the additional requirements beyond that of the 30-km sensor already installed.

The firing information for the weapons listed below appears on their individual page entries. These page references are listed parenthetically after each weapon. The laser rifle adapter shown allows the rifle to be fired at its 0.02-Mj power level. The laser rifle adapter is shown in order to allow its removal to free up enough power for installation and full-time functioning of the 3000-km laser uplink. (Note, however, that shutting down the standard 300-km radio and 30-km laser communicator free up an additional 0.02 MW, which would allow the 3000-km laser uplink to be installed and operated while the other two communicators were off.)

The weapons shown below can be easily mounted on either or both of the roll bars when the air raft is in its open configuration. A weapon mount is shown on the forward roll bar; the rear roll bar slopes to the rear of the vehicle from the rear edge of the door like a mirror image of the forward bar, and is concealed beneath the canvas cover. The canvas cover is shown only partially extended in this view.

Options	Volume (m ³)	Mass (tonnes)	MW	Cr
Laser rifle adapter (page 92)	0.0136	0.0272	0.02667	590
3000-km laser uplink	0.01	0.02	0.04	21,000
300-km passive EMS (replace)	+0.04	+0.08	+0.004	+80,000
PEMS antenna (replace)	+0.004	+0.004	—	+4000
Squad Support Laser (page 96)	0.0594	0.0594	—	57,835
10x100-round magazines	0.15	0.7308	—	29,810
Laser Sniping Weapon (page 97)	0.0907	0.0907	—	54,815
80xrounds	0.15	0.72	—	43,200
Assault Rocket Launcher (page 98)	0.006	0.006	—	210
9x6-round magazines	0.15	0.15	—	1425.6-4017.6
9cm Plasma Bazooka (page 85)	0.027	0.027	—	67,500
37xrounds	0.15	0.6	—	14,800
Intake filter	—	—	—	150
Intake compressor	0.3	0.3	—	3000
Dual LH ₂ /LO _x fuel tankage	—	—	—	175

Attack Speeders

Reformation Coalition TL-12 Attack Speeders

The attack speeders detailed here illustrate the difficulties of building contra-grav vehicles at TL-12. While fusion reactors are still not quite small enough to efficiently power vehicles of this size, their long endurance and lack of oxygen requirements make them very attractive to vehicle designers. Because the Coalition has only a very limited TL-12 production capacity (existing entirely on Aubaine), TL-12 production must be carefully husbanded and not wasted on large numbers of one-off designs.

CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) is currently overseeing a program to design a family of standard TL-12 high-speed grav vehicles, popularly known as speeders. Some of these designs are powered by MHD turbines with dual LHyd/LOx fuel tankage to allow operations in hostile or thin atmospheres, while other designs are centered around oxygen-independent fusion plants, either new-production TL-12 plants or TL-13 plants scavenged from Pyrrhus support sleds (page 126). The speeders illustrated here, the "Mongoose" and "Ferret" types, are examples of TL-12 fusion reactor entrants. Both of these designs have been produced only in very limited numbers as developmental prototypes, but as part of the evaluation program, both types will be available to RCES and free-lance expeditions for field testing (accompanied of course, by 3-6 tech reps and observers).

The Mongoose/Ferret speeders are unusual designs. In order to take advantage of the tremendous power offered by the oxygen-independent fusion plant, they were given the capability to perform at 3Gs, albeit only in airless environments. In this mode, their high-efficiency plasma recombustion (HEPlar) engines draw 7.5 megawatts, while they only draw 0.635 in atmospheres where their airframes limit their top speeds. They are also equipped with artificial gravity G-compensators for crew comfort, as missions exceeding 40 hours are theoretically possible.

The Mongoose is the basic version, with a fully stabilized, fixed forward-firing plasma gun, and retractable missile launch bays. The Ferret trades some missile space for a much larger plasma gun. Facing page shows some of the missiles available for these designs (see also pages 106-109).

Both variants are listed in parallel below. Where only one value is listed, it applies to both Mongoose and Ferret variants.

Tech Level: 12

Price: *Mongoose:* MCr6.35

Ferret: MCr6.62

Size: 70 cubic meters = 5 displacement tons (Mc)

Mass: *Mongoose:* 69.2 tonnes empty, 77.4 tonnes loaded

Ferret: 68.33 tonnes empty, 81.2 tonnes loaded

Power: TL-12 20 MW fusion power plant supplying 0.5 MW to high-efficiency contra-grav lifters, with HEPlar thruster generating 12.7-150 tonnes of thrust (5.0173-11.8823 MW excess power)

Maint: 16

Controls: Dynamic linked, TL-10+ flight avionics, TL-12 terrain-following avionics, 2xTL-12 Model Fit flight computers, TL-10+ IGS navigation system

Commo: 2x3000-km radios, 300-km maser

Sensors: 300-km active EMS sensor, 300-km ladar, 300-km passive EMS sensor

ECM: Electromagnetic masking package, 3-km EMS deceptive (self-defense) jammer, 50-km area jammer, decoy dispenser with space for 10 of any combination of anti-laser, anti-active sensor, or anti-active sensor decoys (see facing page, bottom)

Life Support: Heat, light, sealed and pressurized environment with basic life support and artificial gravity/G-compensators

Cargo: 87.5 kg of crew equipment (0.35 m³)

Crew: 2 (Pilot, weapons system officer)

Passengers: None

Fire Control: EMS rangefinder and TL-12 ballistic computer (ignore 4 Diff Mods) for plasma gun, 600-km laser designator, target seeker and target memory missile control units

Armament: *Mongoose:* 4.75-Mj plasma cradle gun, up to 4000 kg of tac missiles

Ferret: 14-Mj plasma cradle gun, up to 2000 kg of tac missiles

Stabilization: Advanced (fire at any speed)

Ammo: *Mongoose:* 300 rounds of 4.75-Mj 8.5x25cm PPC cartridges for plasma gun (Cr119 each, MCr0.036 for full load of 300), up to 4000 kg of tac missiles (see facing page and pages 106-109)

Ferret: 300 rounds of 14-Mj 12x37cm PPC cartridges for plasma gun (Cr350 each, MCr0.105 for full load of 300), up to 2000 kg of tac missiles (see facing page and pages 106-109)

Speed, Atmospheric: 800 kph maximum, 600 kph cruising

Speed, Vacuum: 4770 kph maximum, 3578 kph cruising

Travel Move (Atmospheric): 2400/960

Combat Move (Atmospheric): 111 (high mode absolute speed)/22 (NOE safe speed) in 10-meter grid squares

Fuel Capacity: *Mongoose:* 6788.75 liters liquid hydrogen (LHyd)

Ferret: 6909.8 liters LHyd

Fuel Consumption/Endurance: *Mongoose:* 158.75 liters per hour in atmosphere (1875 liters/hour in vacuum), tankage is sufficient for one month duration of fusion reactor, plus 42.76 hours of reaction mass in atmosphere (3.62 hours in vacuum)

Ferret: 158.75 liters per hour in atmosphere (1875 liters/hour in vacuum), sufficient for one month duration of fusion reactor, plus 43.53 hours of reaction mass in atmosphere (3.68 hours in vacuum)

Combat Statistics

Config: Standard

HF: 21

Susp: Grav

HS: 16

Deck: 11

HR: 11

Belly: 11



Security Clearance




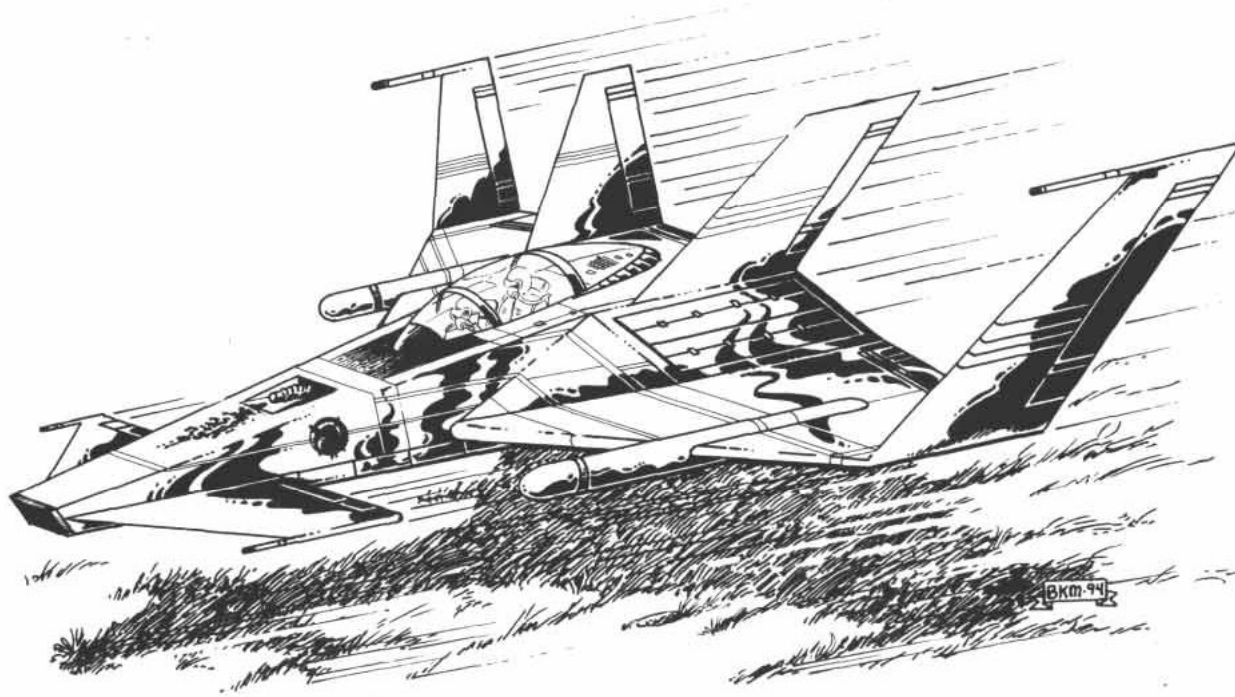
28 IX-1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Tac Missiles

TL	Name	Guidance	Mass	Price	Conc-Burst	Pen Val	Dngr Spc	M Rng	S Rng	M/turn	Agility
12	Skybird	T, H, S	568	16,140	C: 121, B: 115	26C	—	382	20/40	31,882	10
12	Firebird	T, S	190	12,530	C: 24, B: 45	137C	—	32	—/40	7784	8
12	Thunderbird	T, H, S	365	15,340	C: 95, B: 95	281C	—	36	20/40	7784	8
12	Songbird	T, S	1317	17,640	C: 121, B: 115	26C	—	440	—/40	31,692	10
12	Jailbird	T, H, S	404	16,300	C: 225, B: 155	38C	—	62	20/40	32,546	10
12	Butcherbird	T, H	288	7200	—	Nil	60x280	23	20/40	7784	8

Guidance: Each missile may be launched under any of the listed guidance modes, for greater tactical flexibility—T = Target Designated (laser/radar/AEMS), H = Homing (Advanced IR), S = Target Seeker (Imaging Radar); **Mass:** In kg; **Price:** in credits; **Dngr Spc:** Dimensions of primary Danger Space of flechette warhead, in meters, see TNE, pages 279-280; **M Rng:** Maximum Range in km, used with target designated mode; **S Rng:** Short Range used with homing/target seeker mode; **M/turn:** Meters travelled per 5-second combat turn.

Weapon Combat Performance

Weapon	Vehicle	ROF	Dam Val	Pen Rtg	Pen Val	Conc-Burst	Short Range
4.75-Mj Plasma cradle gun	Mongoose	SA1	25	1-2-10	25-25-13-3	C: 1, B: 5	140 m
14-Mj Plasma cradle gun	Ferret	1/2	43	1-2-10	43-43-22-4	C: 2, B: 5	420 m

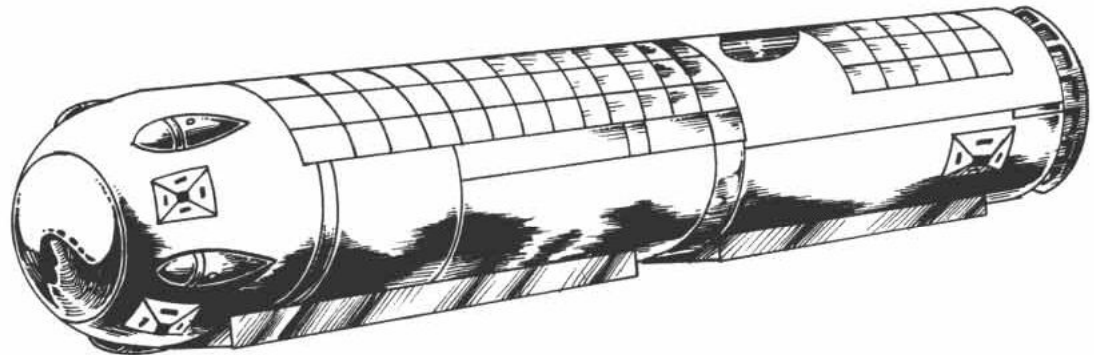
ROF: Rate of fire, in shots per combat turn—ROF of 1/2 equals one shot every second turn

Decoys

Decoys are of three types: anti-laser (which affect attempts to detect a target with laser or to designate it with a laser designator), anti-active sensor (which affect attempts to detect a target or designate it with radar or active EMS), and anti-passive sensor (which affect attempts to detect a target with HRT or passive sensors, including infrared goggles and sights). Each decoy only works against its specified sensor, and increases the difficulty of a detection or designation task by 1 level vs. TL-12+ systems, or by 2 levels vs. TL-11- sensors. Each decoy lasts one combat turn (five seconds), and affects all appropriate sensor attempts against the owning vehicle, regardless of direction. Decoy dispensers may launch one decoy per second.

Decoys for Mongoose/Ferret speeders cost Cr15,000 each regardless of type, or MCr0.15 for a full load of 10.

Sensor Drone & Thunderchicken Attack Helicopter



Reformation Coalition TL-12 Planetary Sensor Drone

This is the standard RC orbital sensor drone, allowing a starship to conduct fairly detailed examinations of the planetary surface without having to risk any personnel on the ground. It is fully recoverable and reusable, although it is naturally expendable as well.

The drone has a displacement of 0.5 tons, identical to that of standard space combat missiles or drop capsules, so may be launched from any standard missile or drop capsule launch tube. The drone may be controlled (using RCV skill) from any missile-capable MFD which has a direct line-of-sight to the missile via laser link, or, if not in direct line-of-sight, by any MFD that can tie into a 3000-km radio elsewhere aboard the ship. It may also be controlled from an RCV workstation equipped with a 3000-km radio or laser communicator, or one which can tie into one.

Because of the range of the communicators on the RCV, the controlling workstation or MFD should be within 3000 km of the drone, and *must* be within 24,000 km of it.

The short range of the drone's sensors make it useless in space combat, although the drone does have 1G performance and fuel sufficient for 9 G-turns.

The drone is propelled by a 1G HEPIaR thruster, and high-efficiency contra-grav lifters. It can enter and exit atmospheres under its own power, and fly around under grav power in any type of atmosphere. It has sufficient fuel to power it for 5 hours, although its reaction mass runs out after 4.5 hours. This allows the drone to broadcast its position and await pick-up for half an hour.

The sensor has space, weight, and power reserved for relic neural activity sensors (NAS) from tech levels 13, 14, or 15. These are quite rare, so any of these drones that are sent on a one-way mission will usually have its NAS removed. Its sensor suite has a short range in meters as follows:

Sensor	Short Range (meters)
Active EMS	3000
Passive EMS	3000
Wide-Spectrum Viewer	400
Neural Activity Sensor	5, 25, or 50 (TL-13, 14, 15)

The sensor makes quite a small target, but is additionally equipped with a full EMM suite to make it even harder to detect by enemy sensors.

Tech Level: 12 (plus relic NAS)

Price: Cr552,550

Size: 7 cubic meters = 0.5 displacement tons (SM)

Mass: 5.35 tonnes empty, 7.7 tonnes loaded

Power: 1.1646 MW MHD turbine with HEPIaR thruster generating 5 tonnes of thrust

Maint: 1

Controls: Dynamic linked RCV controls, TL-10+ flight avionics, TL-12 terrain-following avionics, 2xTL-12 Model Fit flight computers

Commo: 3000-km radio, 3000-km laser

Sensors: 0.4-km wide-spectrum visual video camera, 3-km active EMS, 3-km passive EMS, space reserved for TL-13, 14, or 15 neural activity sensor

Life Support: None

Cargo: None

Crew: None

Passengers: None

Speed: 1100 kph maximum, 825 kph cruising, 160-480 kph NOE

Travel Move: 3300 (High mode), 960 (NOE)

Combat Move (in 10-meter grid squares): 153 (high mode absolute speed), 22 (NOE safe speed)

Fuel Capacity: 2329.2 liters dual LHyd/LOx power plant fuel, 281.25 liters reaction mass

Fuel Consumption: 465.84 liters dual LHyd/LOx per hour (5 hours duration), 62.5 liters LHyd reaction mass per hour (4.5 hours duration)

Combat Statistics

Config: Standard

Susp: G

Armor, all faces: 10

Security Clearance



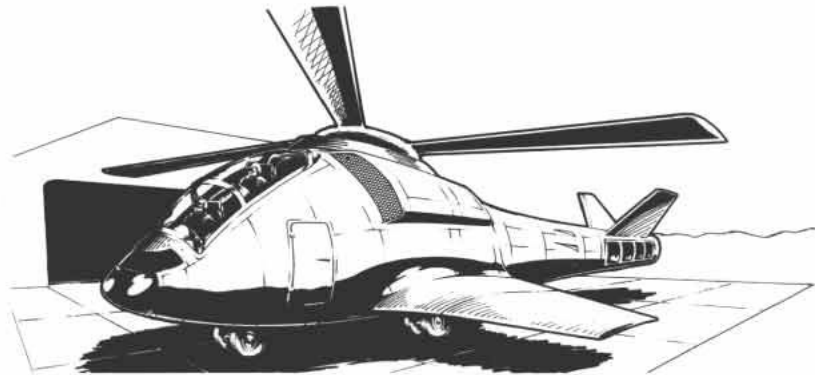
28-IX-1201

Date

Reformation Coalition Equipment Guide

Power 

ON/OFF 



Reformation Coalition TL-9 "Thunderchicken" All-Weather Compound Attack Helicopter

This new design has only entered production recently, but is intended to be the standard attack helicopter and battlefield air superiority craft for all Oriflammen Marine and ground forces. The name, chosen by the Oriflamme Munitions Board, is a slap at the official CSAARC (Committee for the Standardization of Armament and Ammunition in the Reformation Coalition) naming conventions which call for the use of bird and animal themes for missiles and aircraft (e.g., Lyrebird) in place of the more straightforward imagery preferred by Oriflamme (Spike, Nail). Curiously, this aircraft whose name is already an informal nickname has an even more informal nickname used by its Oriflammen flight crews: "Thud-cluck."

Tech level 9 is the highest tech level at which helicopters are typically produced, as grav vehicles take over their roles beginning at this tech level. As such, the Thunderchicken X-wing compound helicopter is perhaps the ultimate expression of the helicopter concept. Able to hover and take off and land vertically like any helicopter, the X-wing design goes beyond compound helicopters which merely unload their rotors in flight to achieve higher speed: The X-wing locks down its strong, composite rotors and uses them as fixed wings, enabling the aircraft to achieve transonic speeds. (Note that the X-wing must transition from fixed-wing flight to helicopter mode before it can hover, land vertically, or fly in NOE mode, as the rotor blades are locked down at speeds greater than 320 kph.) Thus the Thunderchicken functions not only as a standard attack helicopter with air-to-ground munitions, it can also be loaded with air-to-air missiles to function as a limited air superiority aircraft to secure the local area over the battlefield.

Because of its stealth design, it has no turrets or external weapons carriage; its entire armament is carried in internal missile bays which can be loaded with any mix of tac missiles that will fit (see pages 106-108) and which can be launched by the Thunderchicken. Thud-cluck launch capabilities include all laser- and radar-designated missiles (out to a range of 60 km for laser- and 6 km for radar-designated), all homing missiles, and all target memory and target seeker missiles.

The Thunderchicken was designed from the outset to be used in multiple planetary environments, and has a beefed-up rotor assembly with gearing for thin (codes 4, 5), standard (codes 6, 7), and dense (codes 8, 9) atmospheres. All that is needed to prepare the Thunderchicken for these other environments is to change the rotor blades to a set designed for that atmosphere (blade sets are available for thin, standard, and dense atmospheres and can be purchased separately, see "Price" entry below and the rules expansion at the back of this book). The craft is already fitted with intake filters for use in tainted atmospheres.

Tech Level: 9

Price: Cr4,059,230 (price includes filters for tainted atmosphere), Cr50,000 for each additional set of rotor blades.

Size: 1440 cubic meters target size/storage volume = 103 tons (480 cubic meters = 34.3 tons with rotors removed; each rotor set displaces 20 cubic meters or 1.43 tons)

Mass: 21.0255 tonnes empty, 24 tonnes loaded; 1 ton per additional rotor set

Power: 4.95 MW gas turbine provides 4.8 MW to X-wing rotor assembly which provide 24 tonnes lift and 2.4 tonnes thrust. High-bypass turbofans producing 8.01 tonnes thrust and 0.1602 MW (0.3102 MW available for onboard electronics, 0.0037 MW excess power)

Maintenance Points: 6 (7 in tainted atmosphere)

Controls: Computer-linked controls, TL-8 all-weather flight avionics, TL-9 terrain-following avionics

Communications: 300-km radio, 30-km laser communicator/designator

Sensors: 3-km radar (designation capable), 30-km HRT sensor, 2ximage intensifier scopes (250 m)

Electronic Countermeasures: Stealth airframe (+1 Diff Mod vs. TL-9 radar and HRT, +2 Diff Mods vs. TL-8- radar and HRT), one dispenser with 12xanti-laser decoys (vs. ladar or laser designators), one dispenser with 12xanti-active sensor decoys (vs. radar or active EMS), one dispenser with 12xanti-passive sensor decoys (vs. HRT or passive EMS). Each decoy lasts one combat turn (5 seconds) and increases difficulty of all sensor tasks (of the indicated type which the decoy affects) vs. the Thunderchicken for that turn, from any direction, +1 Diff Mod for TL-9+ systems, +2 Diff Mods for TL-8- systems.

Life Support: Heat, lights, sealed, pressurized environment with basic life support for two crew

Cargo: None

Crew: 2 (pilot and weapons officer) with advanced cockpit armor (AV 4) and advanced ejection seats

Fire Control: Control/launch units for radar- and laser-designated missiles (may self-designate out to 60 km for laser and 6 km for radar), homing missiles, target memory, and target seeker missiles

Armament: Capacity for 400 kg of tac missiles in internal retractable missile bay

Ammo: Up to 400 kg of tac missiles, see pages 106-108

Maximum Speed: Helicopter mode: 320 kph; Fixed-wing mode: 1100 kph.

Cruising Speed: Helicopter mode: 240 kph; Fixed-wing mode: 825 kph

NOE Speed: 80-240 kph (helicopter mode only)

Travel Move: Assuming in-flight refueling, 960 (high mode)/480 (NOE) helicopter mode, 3300 (high mode) fixed-wing mode. Without in-flight refueling, use cruising speeds above and fuel endurance below to calculate figures.

Combat Move: 44 (high mode absolute speed)/11 (NOE safe speed) in helicopter mode, 153 (high mode absolute speed) in fixed-wing mode

Agility: Helicopter mode: +4 Diff Mod vs. maximum speed (combat move), +4 Diff Mod vs. cruising speed (travel move), +4 Diff Mod vs. NOE safe speed, +6 Diff Mod vs. 2xNOE safe speed, +8 Diff Mod vs. 3xNOE safe speed; Fixed-wing mode: +6 Diff Mod vs. maximum speed (combat move), +6 Diff Mod vs. cruising speed (travel move).

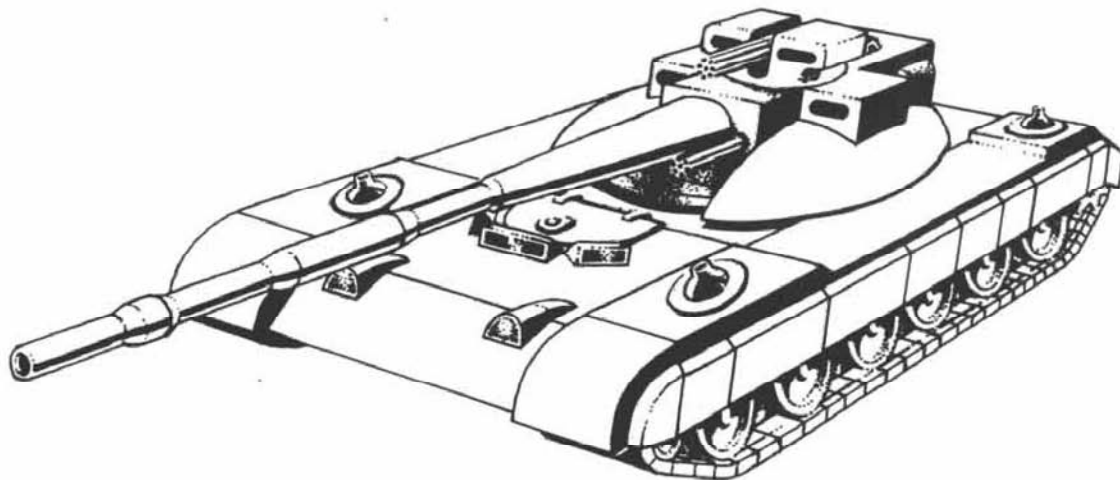
Fuel Consumption: 990 liters/hour in helicopter mode, 830 liters/hour in fixed-wing mode

Internal Fuel Capacity: 2284.5 liters hydrocarbon distillates, plus refueling probe. For ferry missions without in-flight refuelling, weapons bay can carry an additional 400 liters in place of weapons.

Endurance: 2.3 hours helicopter mode (138 minutes), 2.75 hours fixed-wing mode (165 minutes). For simplicity, choose a mode (helicopter or fixed wing) and track endurance in minutes in that mode only. Each minute in helo mode costs 1.2 minutes in fixed-wing mode; each minute in fixed-wing mode costs 0.8 minutes in helo mode.

Loading fuel in weapons bay for ferry missions adds 0.4 hours (24 minutes) endurance helo mode, or 0.48 hours (29 minutes) fixed-wing mode.

Prairie Fire Tank



Prairie Fire TL-8 Tank

The Prairie Fire is one of many standard pre-Collapse Imperial designs that can still be found on many worlds. It is not a main battle tank, as it is not armored quite well enough to stand up to TL-8 MBTs, but it is a high-speed heavy weapons platform that can perform many of the tasks of a tank, and is used as such on most worlds where it occurs.

Both the commander and gunner can control and fire the Prairie Fire's fully stabilized main armament and its coaxial multi-barrel autogun. In addition, the commander controls a remote stabilized turret with another multi-barrel autogun. The main armament, coaxial weapon, and remote turret are all equipped with ballistic fire control computers, allowing all weapons to disregard 2 Diff Mods.

Tech Level: 8

Price: Cr866,875 (plus ammunition costs, see below)

Size: 168 kiloliters displacement = 12 tons (VS)

Mass: 239.56 tonnes empty, 247.1 tonnes loaded

Power: 13.62 MW MHD turbine (0.099 MW excess power)

Maint: 67

Controls: Enhanced electronic controls, TL-8 satellite positioning nav aids

Commo: 2x30-km radios

Sensors: 3-km HRT

Life Support: Overpressure system

Cargo: None

Crew: 3 (driver, gunner, commander)

Passengers: None

Fire Control: -2 Diff Mods (main armament and remote turret)

Armament: Remote turret with stabilized 130mm L60 CPR gun and coaxial 7mm rotary MG, secondary remote turret with stabilized 5mm rotary MG

Stabilization: Advanced (fire at all speeds)

Ammunition: 100 rounds 130mm (price varies, see below), 2500 rounds 7mm (Cr1250 for full load), 5000 rounds 5mm (Cr1000 for full load)

Other Systems: Dispensers for anti-laser, anti-active sensor, and anti-passive sensor decoys, 20 each (Cr400,000 for each full load of 20)

Speed: 142 kph maximum road speed, 113 kph maximum cross-country speed

Travel Move: 280/215

Combat Move: 65/50

Fuel Capacity: 28,500 liters liquid hydrogen (Cr997.5)

Fuel Consumption: 2724 liters/hour (endurance of 10.46 hours)

Combat Statistics

Config: Turret

Susp: T 24

TF: 192

TS: 48

TR: 24

Deck: 36

HF: 192

HS: 48

HR: 24

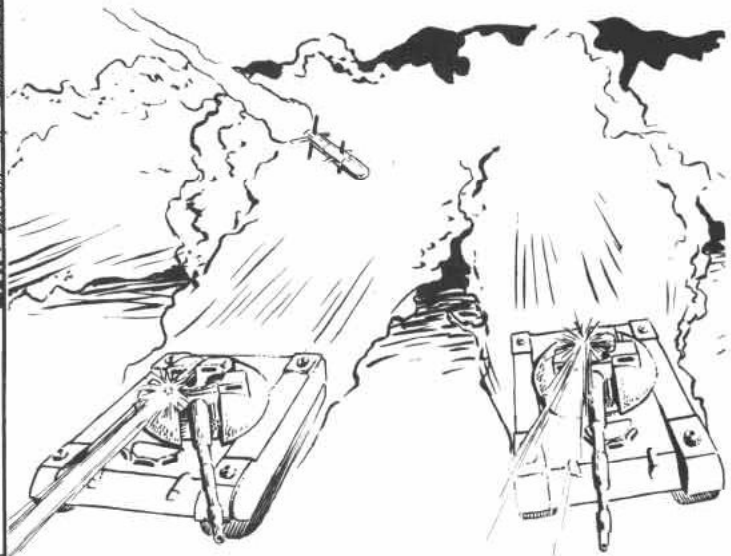
Belly: 24

Security Clearance

Yes No

28 IX 1201

Date



Prairie Fire tank firing anti-IR decoy from forward dispenser

Weapon Characteristics

TL-8 130mm/60-Caliber Hypervelocity Gun

Round	ROF	Conc- Burst	Dam Val	Pen Val	Danger Space	Short Range	—Ammo—	
							Price	Weight
APFSDSDU	1/5*	—	29D6	207/197/187/167	—	670	Cr1124	49.7
HEAP	1/5*	C: 20, B: 25	—	123C	—	510	Cr599	49.7
HE	1/5*	C: 30, B: 35	—	13C	—	510	Cr424	49.7
Flechette	1/5*	—	2D6/1D6**	1-Nil**	25x100	510	Cr1824	49.7

*One round every 5 combat turns.

**In primary/secondary burst area, see TNE, page 280.

Secondary Weapons

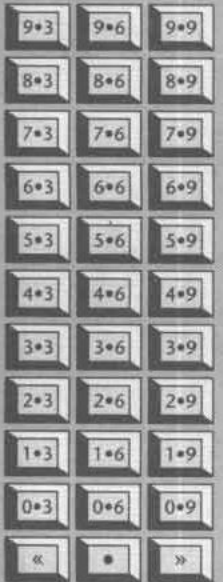
Round	ROF	Dam Value	Pen Rtg	Magazine	Short Range
TL-8 7mm rotary MG-ball	50	5	2-3-Nil	2500C	270
TL-8 5mm rotary MG-ball	5/50	3	1-Nil	5000C	150

Decoys

Decoys are of three types: anti-laser (which affect attempts to detect a target with ladar or to designate it with a laser designator), anti-active sensor (which affect attempts to detect a target or designate it with radar or active EMS), and anti-passive sensor (which affect attempts to detect a target with HRT or passive sensors, including infrared goggles and sights). Each decoy only works against its specified sensor, and increases the difficulty of a detection or designation task by 1 level if from the same tech level as the opponent, or by 2 levels if from a higher tech level. Each decoy lasts one combat turn, and affects all appropriate sensor attempts against the owning vehicle, regardless of direction. Decoy dispensers may launch one decoy per second.



LRV-51 Pandina

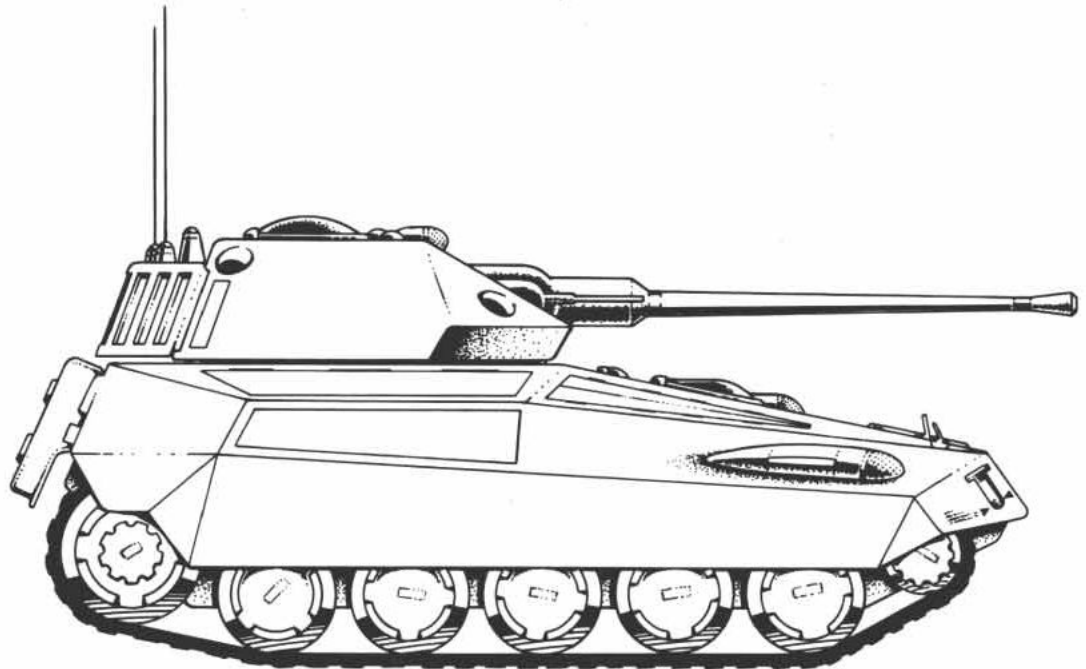


Security Clearance



28-IX-1201

Date



TL-6 LRV-51 Pandina
(Light Reconnaissance Vehicle, RCES Designation)

Tech Level: 6
Price: Cr66,648 (not including ammo)
Size: 56 kl (4 tons)
Mass: 33.78 tonnes empty, 35.08 tonnes loaded
Power: 0.75 MW improved internal combustion engine
Maint: 12
Controls: Basic mechanical controls
Commo: 30km radio
Life Support: Overpressure system
Cargo: None
Crew: 3
Passengers: None
Fire Control: Optic rangefinder at gunner's and commander's stations

Armament: 3cm/L70 turret-mounted autocannon and 7x57mm coaxial MG, pintle-mounted 7x57mm MG at commander's hatch
Stabilization: Basic (autocannon and coaxial MG)
Ammo: 140+6 3cm, 1000x7mm ball (prices below)
Travel Move: 130/85/20
Combat Move: 30/20/5
Fuel Capacity: 890 liters (0.89 kl) hydrocarbon distillates
Fuel Consumption: 0.19 kl/hr (4.68 hours)

Combat Statistics

Configuration: Turret	TF: 9	HF: 9
Susp: T 8	TS: 4	HS: 4
	TR: 3	HR: 3
	Deck: 3	Belly: 3

The origin of the LRV-51 is unknown, but the present Guild design is clearly taken from a pre-Collapse light guntrack intended for low-tech reconnaissance units. The Pandina (or "Panda") is used by a number of TEDs for sanctions against rebellious civilians, a purpose to which it proved admirably suited. The armor is enough to resist most small arms and fragments, the 3cm/L70 main gun outranges all small arms likely to be encountered in the hands of ill-equipped rural militias, and the AFV's two 7mm machineguns served to prevent attacks by small antiarmor attack teams.

The 3cm/L70 main gun is fed from a 140-round magazine, but most vehicles now carry 6 additional specialty rounds for hand loading. The gun's autofire sequence is interrupted by a manual override, the special round inserted by hand, and the gun fired.

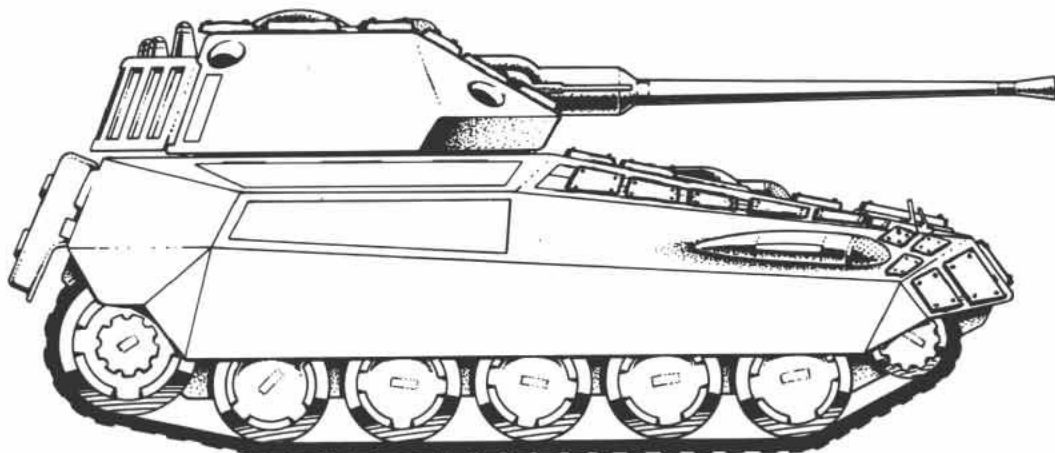
Tooling and blueprints for the manufacture this vehicle have been widely disseminated by Guild merchants, who also supply high-tech ammo (the specialty rounds mentioned above) for the gun.

Most TEDs are capable of manufacturing 3cm ammunition in a variety of types (HE, APDS, HEAP, CHEM, WP/IS, and Flechette). None of these rounds present a serious threat to RC troops, but the Guild is known to be offering additional, higher-tech rounds (APFSDSDU, APFSDSCI, and APFSDSSD) some of which are capable of penetrating RCES battle dress at ranges in excess of 3600 meters.

Reformation Coalition Equipment Guide

Power

ON/OFF



3cm/L70 Autocannon

Round	ROF	Conc- Burst	Dam Val	Pen Val	Danger Space	Short Range	—Ammo—	
							Price	Weight
HE	10	C: 1, B: 5	—	Nil	—	350	5	0.6
HEAP	10	C: 1, B: 5	—	11C	—	350	7	0.6
APDS	10	—	7D6	8/7/6/4	—	470	7	0.6
APFSDSDU-8	10	—	7D6	14/12/10/7	—	470	13	0.6
APFSDSCI-10	10	—	7D6	21/18/15/10	—	470	15	0.6
APFSDSSD-12	10	—	7D6	23/20/17/11	—	470	17	0.6
CHEM	10	C: 2, B: 3	—	Nil	—	350	5	0.6
Flechette	10	—	2D6/1D6*	1-Nil*	20x90	350	21	0.6

*as fragments, see TNE, page 280

7x57mm MG, Vehicle Mount

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	—Recoil—		Short Range	Price
						SS	Burst		
7x57mm ball	10	4	2-Nil	8	100B	—	—	150	Cr44 per 100 rounds

Reactive Armor Block Sets for the LRV Pandina

The Mercantile Guild manufactures and sells two sets of ERA (explosive reactive armor) blocks for their LRV "Pandina." These blocks provide additional armor protection for the top and front faces of the vehicle. The armor value is the additional armor protection provided by one layer of blocks for the relevant face. These blocks are machined to fit the Panda only, and cannot be used with other vehicles.

Panda ERA Set—Front Face

TL: 8
Volume: 2.6 kl
Mass: 520 kg
Price: Cr1820
AV: 16

Panda ERA Replacement Block—Front Face

TL: 8
Volume: 0.13 kl
Mass: 26 kg
Price: Cr91
AV: 16

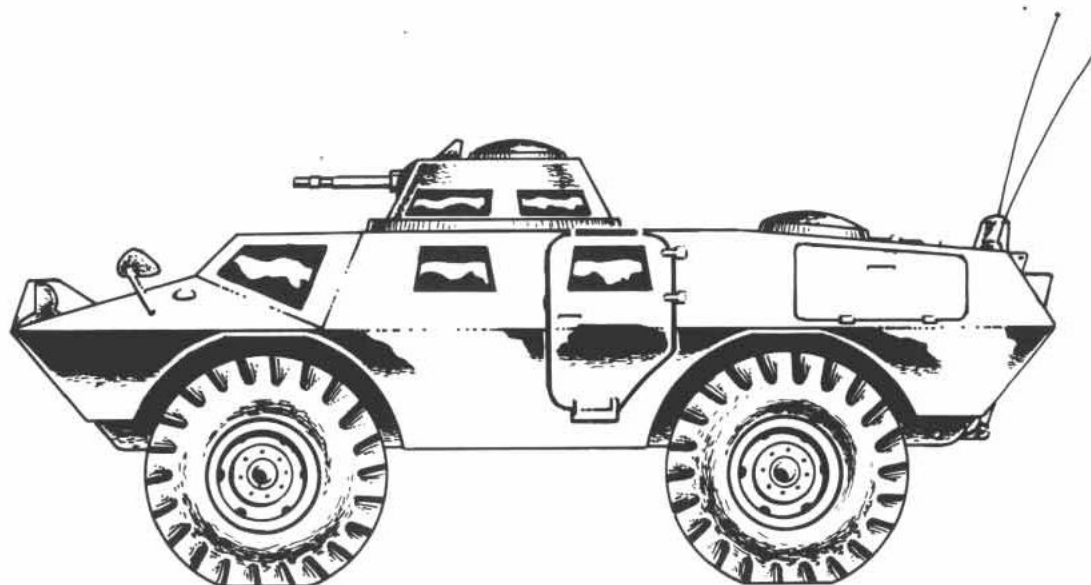
Panda ERA Set—Top Face

TL: 8
Volume: 6.5 kl
Mass: 1300 kg
Price: Cr4550
AV: 16

Panda ERA Replacement Block—Top Face

TL: 8
Volume: 0.325 kl
Mass: 65 kg
Price: Cr228
AV: 16

Charina APC & "Pathie" Armored Car



Charina APC TL-7

The Charina is very simple light-wheeled vehicle designed to act as an armored personnel carrier and reconnaissance vehicle. With a maximum road speed of 94 kph (38 kph cross country) and a 30-hour endurance, the Charina is used for a variety of purposes, including mechanized infantry transport, cavalry/recon, military police, convoy escort, and riot control. The Charina's cargo allowance is rather small (25 kg per person), so long-term missions require support vehicles (either transport trucks or other APCs) to carry equipment and supplies.

Tech Level: 7

Price: Cr15,095.5

Size: 42 kiloliters displacement = 3 tons (Mc)

Mass: 8.74 empty, 12.04 tonnes loaded

Power: 0.3 MW Improved Internal Combustion Engine

Maint: 4

Controls: Basic mechanical

Commo: 30-km Radio

Life Support: Heat, light

Cargo: 200 kg (0.8 m³)

Crew: 3 (driver, commander, and gunner)

Passengers: 5 in cramped seats

Fire Control: Optic RF

Armament: 7mm TL-5 MMG

Stabilization: None

Ammo: 2000 rounds 7x57mm, Cr880 for a full load

Speed: 94 kph maximum road speed, 38 kph maximum cross country speed, 9 kph maximum water speed

Travel Move: 195/85/20

Combat Move: 45/20/5

Fuel Capacity: 2250xliters hydrocarbon distillates

Fuel Consumption: 75 liters per hour, endurance of 30 hours

Combat Statistics

Configuration: Small Turret

Susp: W (4)

TF: 5

TS: 3

TR: 3

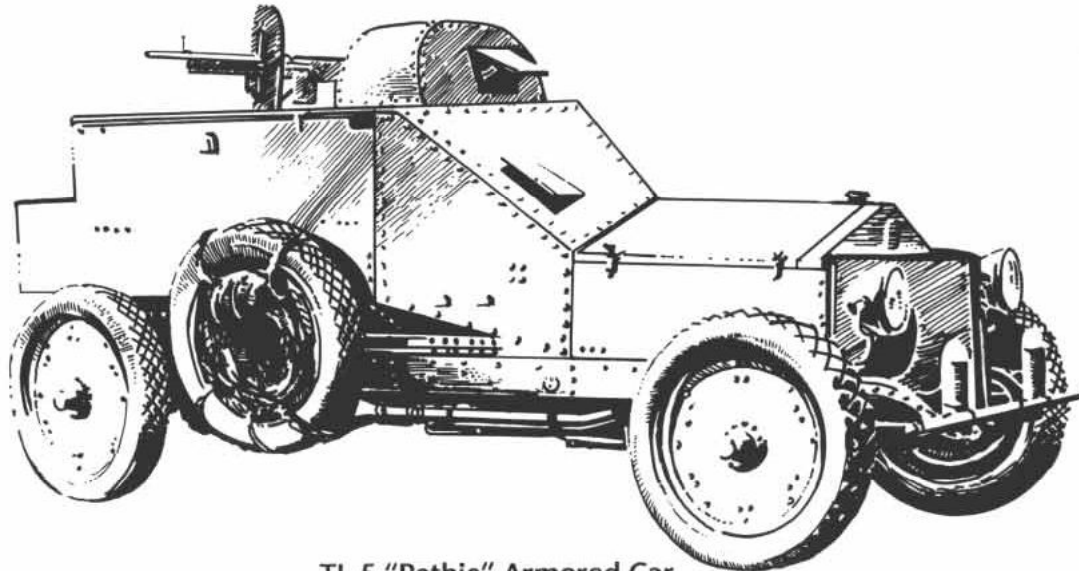
Deck: 3

HF: 5

HS: 3

HR: 3

Belly: 3



TL-5 "Pathie" Armored Car

We were holding this DZ waiting for the strike team to show up when we heard this chugging sound from back in the woods. We looked at each other and hunkered down, and a few minutes later this thing comes down the road out of the trees. I guess I should call it an armored car, but "armored" is too kind—hell, even "car" is probably too kind. So this thing comes at us, wheezing up this moderate slope, with the crew all buttoned up and cowering, and a couple little pea-shooter guns poking out the turret, waving around like little antennas. The thought crossed my mind at that point that maybe we should just surrender to the thing, because I almost didn't have the heart to shoot it...

The "Pathie" armored car is not so much a specific type of vehicle as it is a representative of a broad class of vehicles encountered in the Wilds. These vehicles are known to RC crews as "Pathies," short for "pathetic," and are taken to include any TL-4 to 6 vehicle that are armored versions of civilian cars or trucks, armed with small arms weapons, and used for reconnaissance, security, etc. Although the specific example on this page was known as the "Impaler" armored car on Lebherz (3236/Khulam/Diaspora), this design can be taken as representative of low-tech "Pathies" throughout the Wilds as a whole.

Tech Level: 5
Price: Cr18,092
Size: 42 cubic meters = 3 displacement tons (Mc)
Mass: 22.33 tonnes empty, 27.39 tonnes loaded
Power: 0.75 MW improved internal combustion engine (no excess power)
Maint: 14
Controls: Basic mechanical
Commo: 30-km radio
Sensor: 2x visible light headlights (30-meter short range)
Life Support: light, heat
Cargo: 0.2445 tonnes (0.978 m³)
Crew: 3 (driver, gunner, radio operator)
Passengers: None
Fire Control: None (iron sights integral to the machineguns)

Armament: 2x TL-5 7mm medium machineguns
Stabilization: None
Ammo: 1000 rounds 7mm (500 per gun) in 10x100-round belts, Cr440 for full load
Speed: 83 kph maximum road speed, 33 kph maximum cross-country speed
Travel Move: 175/65
Combat Move: 40/15
Fuel Capacity: 4500 liters hydrocarbon distillates
Fuel Consumption: 187.5 liters/hour (endurance of 24 hours)

Combat Statistics

Config:	Turret	TF: 6	HF: 6
Susp:	W (4)	TS: 4	HS: 4
		TR: 4	HR: 4
		Deck: 4	Belly: 4

Weapon Performance

Weapon-Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
TL-5 7mm MMG-ball	10	4	2-Nil	8	100B	—	—	70

Pyrrhus Support Sled & "Buster" Weapons Carrier

Pyrrhus TL-13 Support Sled

The Pyrrhus grav "tank" was fielded by the Solomani during the middle portion of the Final War as the war entered its "meat grinder" phase. It was designed as a battlefield system which could be produced in large numbers to feed the battles of attrition that were grinding on throughout the Solomani Rim and Diaspora sectors. By setting its tech level at 13, the Solomani could produce the design on a larger number of worlds, and by cutting corners, such as on its armor and main armament, it could be produced more cheaply than a first-line main battle tank.

However, by naming it a "grav tank" (presumably to raise the morale of the crews who were about to die in it), the Solomani leaders made a serious mistake, as this led to its improper use and subsequent miserable reputation. Originally named the "Chariot grav tank," grim crews quickly renamed it the "Pyrrhus," and began to describe the "tank" as "a grav sled with an identity crisis."

However, just as it is only a poor carpenter who blames his tools, it is a poor commander who blames his equipment. When used properly, with adequate cover and in conjunction with missile-armed infantry, the Pyrrhus could hold its own. But when it was called a "tank" and rushed into combat with incompletely trained replacement units, it was used as a tank and died in droves like the tin can it was.

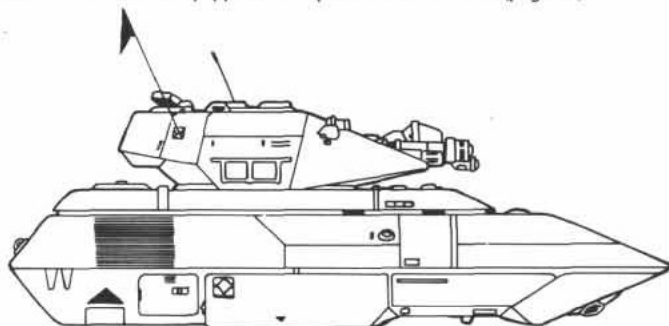
Because of its large numbers, the Pyrrhus has survived into the new era in relatively large numbers (for relic machinery), and sees use with the RC armed forces. Although the RC has retained the name "Pyrrhus," it is careful to designate the vehicle as a support sled, and instruct its crews in its proper use. Fortunately for the RC, their battlefields are a bit less demanding than the high-tech killing grounds of the Final War, and the Pyrrhus' weak points are less pronounced when dealing with the palace guards of a TED and his peasant yeomanry.

Nonetheless, as replacements are found, the Pyrrhuses are being removed from service to allow their light, compact TL-13 fusion plants to be used elsewhere.

The provision of a passenger seat allows platoon and company commanders to be carried without requiring them to pay attention to operating the tank. Instead, their full attention is devoted to commanding their units. When commanders are not carried, unit mechanics are sometimes carried, to allow rapid field repairs, and carry their tools and crucial spare parts in the spaces allocated for cargo.

The Pyrrhus may operate on worlds without breathable atmospheres as its power plant and propulsion system are not dependent upon oxygen, and it is equipped with basic life support for its crew.

In Coalition service, each crewmember is equipped with a personal defense laser (page 95).



Tech Level: 13
Price: Cr1,945,420
Size: 98 cubic meters = 7 displacement tons (Mc)
Mass: 26 tonnes empty, 42.2 tonnes loaded
Power: 3.3 MW fusion plant (1 year endurance) with HEPlaR thruster generating 16 tonnes of thrust (0.0572 MW excess power)
Maint: 7
Controls: Holographic linked, TL-10+ flight avionics, TL-13 terrain-following avionics, 2xTL-13 FLT computers
Commo: 300-km radio, 30km laser communicator
Sensors: 30-km passive EMS, 3-km active EMS, 3-km EMS jammer
Life Support: Heat, light, pressurized, basic life support
Cargo: 4 tonnes
Crew: 3 (commander, gunner, driver)
Passengers: 1
Fire Control: TL-13 ballistic computer allows up to 4 +Diff Mods to be disregarded

Armament: 12-Mj plasma cradle gun, coaxial 7.5mm machine-gun, coaxial target-painting laser
Stabilization: Advanced (for all three weapons), may fire at any speed
Ammo: 400 pulse plasma cartridges (Cr300 each), 3000 rounds 7.5mm. Full load of plasma cartridges costs Cr120,000, full load of machinegun ammunition costs Cr1320.
Speed: 720 kph high mode, 540 kph cruising, 170 kph safe NOE speed
Travel Move: 2160 (high mode), 1020 (NOE)
Combat Move (In 10-meter grid squares): 100 (high mode absolute speed), 24 (NOE safe speed)
Fuel Capacity: 4000 liters LHyd
Fuel Consumption: 200 liters/hour (endurance of 20 hours)

Combat Statistics

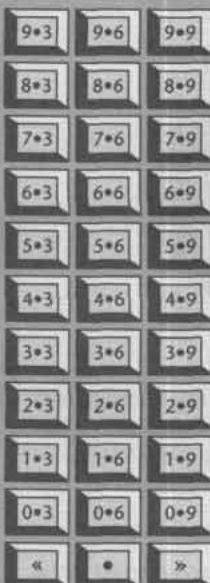
Config: Turret	TF: 60	HF: 60
Susp: G	TS: 8	HS: 8
	TR: 4	HR: 4
	Deck: 8	Belly: 4

Weapon Values

Type	ROF	Short Range	Dam Val	Pen Rtg	Pen Val	Con-Burst
12-Mj plasma cradle gun	SA1	360*	40	1-2-10	40-40-20-4	C: 2, B: 5
7.5mm MG	5	300	7	2-3-4	—	—
8cm laser rifle	SA3	300	—†	—†	—	—

*The plasma gun's accuracy does not go down (i.e., the gunner's task difficulty level does not increase) with range. Range bands change the weapon's performance only by reducing penetration and defining the weapon's maximum range (2880 meters).

†The laser is powered directly from the vehicle's power plant, but only at target designation intensities.



Security Clearance



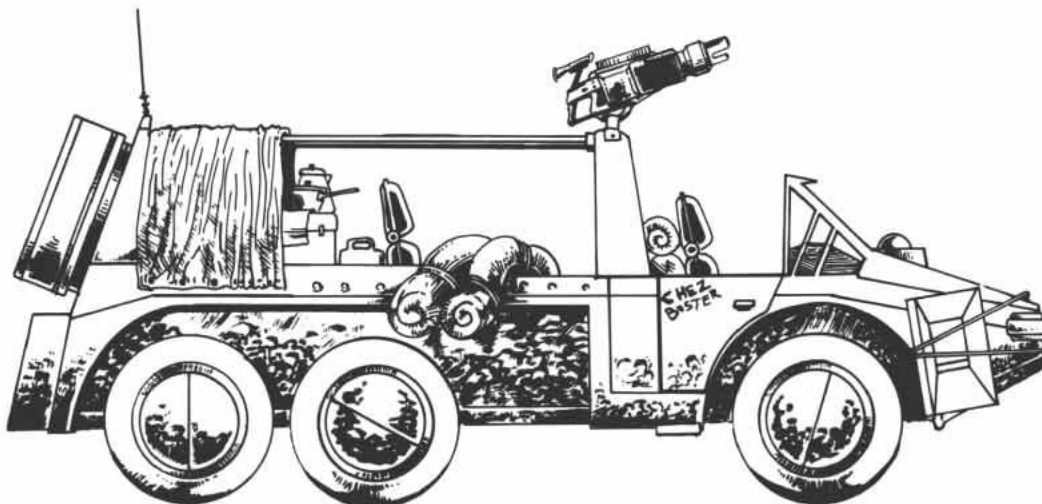
28-IX-1201

Date

Reformation Coalition Equipment Guide

Power

ON/OFF



"Buster" TL-8 Weapons Carrier

The "Buster" weapons carrier is based quite naturally on the TL-8 range truck, manufactured throughout the Last Imperium and available in relic form, and now manufactured on Lucifer, Oriflamme, and Nike Nimbus in the Reformation Coalition.

In this weapons carrier version, it has been enhanced by the addition of a TL-8 satellite-positioning ground navigation system, a 30-km radio, and a power adapter to allow an 8cm TL-9 laser rifle to be fired off of the vehicle's power supply, rather than requiring a backpack. The TL-9 adapter is the only item on the vehicle itself (exclusive of the installed weapons, below) that is not constructed at TL-8. The adapter allows the rifle to fire at the 0.02-Mj power level (see page 92).

The weapons carrier has a pintle mount installed on its forward roll bar, and is designed to carry any one of a large variety of Coalition heavy weapons, usually a squad support laser, laser sniping weapon, assault rocket launcher, or plasma bazooka. (Firing data for these weapons is presented on their individual entries; page references for these are listed under "Armament," below.) By mounting these weapons directly on a vehicle rather than having them carried by ground troops, the crew is able to rapidly "shoot and scoot" to avoid enemy counterfire. This makes the weapons carrier valuable for defensive operations, as it is difficult for an SSL or LSW crew to provide defensive covering fire and then pack up these heavy weapons and escape. The weapons carrier's high cross-country mobility has led to its nickname, "Buster." It can travel so rapidly across rough terrain that the crew seated inside complain that "it'll bust yer butt."

Note that of the weapons carrier's price of Cr24,888, Cr20,000 comes from its satnav system, meaning that this system is often left off to save money. Note also that the power shortfall below means that the laser rifle adapter and the satnav system may not be operated at the same time. However, since the satnav system only needs to operate periodically to update the vehicle's new location, this is not a problem.

Coalition range trucks and "Busters" have had their power plants converted to burn liquid hydrogen (LHyd), as this will always be available from starship fuel tankage, while many low-tech worlds will have no petroleum refining facilities to provide hydrocarbon distillate fuels.

Busters function without difficulty in atmosphere codes 4-9, but do require intake filters in tainted atmospheres (codes 4, 7, and 9). These cost Cr10 per vehicle and have negligible mass and volume. In order to function in very thin atmospheres (codes 2-3), the Buster requires an intake compressor. Compressors cost Cr200 and reduce the vehicle's cargo capacity by 0.1 cubic meters and 0.1 tonnes.

Buster crews are equipped with two image converter or PRIS binoculars (pages 28-29), one 8cm DEI laser rifle (page 92), and two personal defense lasers (page 95), in addition to whatever additional personal equipment and supplies they might wish to carry.

Tech Level: 8

Price: Cr24,888 (exclusive of weapons)

Size: 14 cubic meters = 1 displacement ton (Mc)

Mass: 1.95 tonnes empty, 3.8 tonnes loaded

Power: 0.2 MW improved internal combustion engine (0.00817 MW power shortfall)

Maint: 1

Controls: Enhanced electronic, TL-8 navigation aids

Commo: 30km radio

Sensors: Image converter or PRIS binoculars carried by crew (pages 28-29)

Life Support: Light, heat

Cargo: 0.25 tonnes for crew supplies and equipment, plus up to 1.25 tonnes of heavy weapons and ammunition (see below)

Crew: 3

Passengers: None

Fire Control: None

Armament: 1xSquad Support Laser (page 96), or 1xLaser Sniping

Weapon (page 97), or 1xAssault Rocket Launcher (page 98), or 1xPlasma Bazooka (page 99), plus one DEI laser rifle (page 92)

Stabilization: None

Ammo: Varies by carried weapon: 16xSSL magazines (100 rounds each), or 128xLSW rounds, or 74xARL clips (6 rounds each), or 75xPlasma Bazooka rounds

Maximum Speed: 145 kph on roads, 58 kph cross country

Travel Move: 280/110

Combat Move: 65/25

Fuel Capacity: 550 liters LHyd

Fuel Consumption: 50 liters/hour (endurance of 11 hours)

Combat Statistics

Config: Open vehicle

Susp: W (2)

Deck: Open

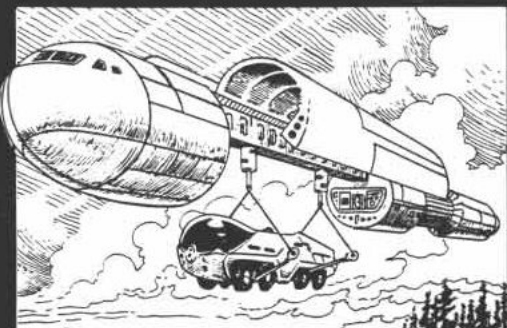
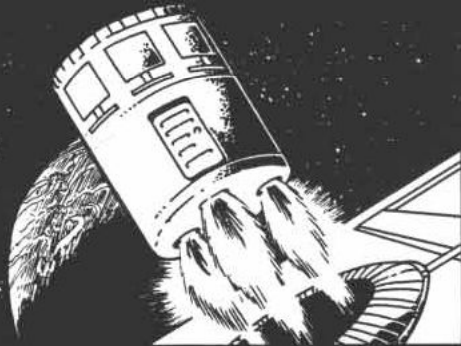
HF: [1]

HS: [1]

HR: [1]

Belly: 1

S



TARSHIPS



SPACECRAFT

The following pages contain a sampling of starships and spacecraft commonly used by the Reformation Coalition and its member worlds, as well as three Hiver ships that are often encountered in Coalition Space. Note that the individual member worlds of the Coalition maintain fleets of mostly relic craft: large Last Imperium starships mostly used as system defense boats, and a profusion of smaller ships. These ships are not portrayed here, but are found in the TNE basic rules (pages 366-379) and in *Brilliant Lances*. Note that these sources show ships that have been rebuilt, redesigned, or modified over the years to TL-12 standards, even though these classes were usually considered TL-15 vessels in former times.

How to Read the Starship Data Profiles

The starship data profiles on the following pages are presented in the *Brilliant Lances* format. However, they are also fully usable with the space combat rules presented in the TNE basic rules. Where the range of any system is defined in hexes, this is the same as range bands in the basic TNE space combat rules.

The following abbreviations are used on the following pages.

AEMS: Active Electromagnetic Sensor; **AG:** Artificial Gravity (environmental and G-compensating); **AL:** Air Lock; **Ant:** Antenna; **Brb:** Barbette; **BS:** Barbette Socket; **CG:** Contra-Gravity Lifters; **CH:** Cargo Hatch; **Elec:** Electronics; **ELS:** Emergency Life Support; **EMM:** Electromagnetic Masking; **EMMR:** Electromagnetic Masking Radiators; **Eng:** Engineering; **FPP:** Fuel Processing Plant; **JD:** Jump Drive; **Las:** Laser; **LB:** Laser Barbette; **LBth:** Low Berth; **LP:** Launch Port; **LS:** Life Support; **LSR:** Large stateroom; **LT:** Laser Turret; **MB:** Missile Barbette; **MD:** Maneuver Drive (ignition chamber); **MFD:** Master Fire Director; **MG:** Meson Gun; **MS:** Meson Screen; **MT:** Missile Turret; **ND:** Nuclear Damper; **NDB:** Nuclear Damper Barbette; **NDT:** Nuclear Damper Turret; **PA:** Particle Accelerator; **PEMS:** Passive Electromagnetic Sensor; **PEMS Ant:** Passive Electromagnetic Sensor Antenna; **PP:** Power Plant; **Qtrs:** Quarters; **RC Ant:** Radio Communicator Antenna; **Sand:** Sandcaster Turret; **SSR:** Small Stateroom; **Trt:** Turret; **TS:** Turret Socket, i.e., an empty socket where a turret could be installed. All empty sockets take 1 minor hit (1h). If a turret or barbette is in the socket, it takes damage normally.

Note: Prices for ships do not include carried small craft, cutter modules, vehicles, etc., which must be purchased separately.

Small Craft

In the Last Imperium, small craft were classified by a bewildering array of specific terms which specified size, performance, and often hull configuration. With the Imperium's large high-tech manufacturing base, these standard designs could be produced in huge numbers at consistent levels of technology, and these fine distinctions of type were useful. However, with the low technology levels prevailing in the Reformation Coalition in the new era, these descriptions are no longer useful, as reigning tech levels will often not permit their construction, nor even their repair. For example, the 50-ton modular cutter, which in Last Imperium times maneuvered at 4Gs, cannot be built to perform at better than 2 at TL-12. These difficulties of building spacecraft with external similarities to Last Imperium craft but which did not fit many of the criteria of their Imperial descriptions led to a breakdown of small craft terminology in the RC.

Because of the large numbers of relic small craft, of widely varying characteristics and performance, that have been pressed into Coalition service, the RCES and RCN have been forced to adopt a new standardized system for classifying these craft. Because it is based categories of actual performance, it is more rational than the arbitrary Imperial system which allocated a unique type name to each separate design. However, because the imperial usage persists, confusion may sometimes result. Ironically, one of the most persistent of the anachronistic uses is the modular cutter, which strictly speaking should be called a modular shuttle under the new system. Although it does not fit either the Imperial nor the RC requirement of 4G performance, the fact that its design concept is identical to the old Imperial modular cutters means that the name is still used. Note that *cutter* used alone means a 50-99-ton craft with 4G+ performance; the term *modular cutter* must be used to describe the 50-ton craft with a 29-ton removable module.

Assault Lander: A heavily armored small craft, usually armed, designed to land combat-equipped troops under fire.

Barge: Any small craft assigned for the personal transport of an admiral or other high-ranking officer.

Boat: Generic term for any small craft. Term is also used for spacecraft in general, for example the starship-sized system defense "boats."

Cutter: Small craft between 50 and 99 tons and performance of 4Gs or greater, especially one with substantial cargo capacity.

Fighter: A high-performance, armed small craft intended only for space or atmospheric and space combat, with no utility role.

Gig: Small craft of 20 tons or less and performance of 4G or greater, and usually armed.

Launch: Small craft of 20-49 tons and performance of 3G or less.

Lifeboat: Powered small craft in the skiff or launch class fitted with emergency low berths or standard passenger couches, used for abandoning disabled or destroyed starships.

Liferaft: Unpowered small craft fitted with emergency low berths, used for abandoning disabled or destroyed starships.

Lighter: Nonstarship greater than 100 tons displacement, with performance of 3G or lower, designed to land cargo from orbit onto planetary surface.

Longboat: Any small craft between 20 and 99 tons with long-endurance accommodations for all crew and passengers.

Pinnace: Small craft of 21-49 tons with performance of 4G or greater.

Ship's Boat: See Boat. Because of Imperial practice, has also come to be associated with a 30-ton starship-carried general purpose utility craft, usually in the pinnace class.

Shuttle: Small craft between 50 and 99 tons and performance of 3Gs or less.

Skiff: Small craft of less than 20 tons and performance of 3G or less.

Small Craft: Non-jump-capable craft of less than 100 tons.

Spacecraft: Non-jump-capable space vessel of any size.

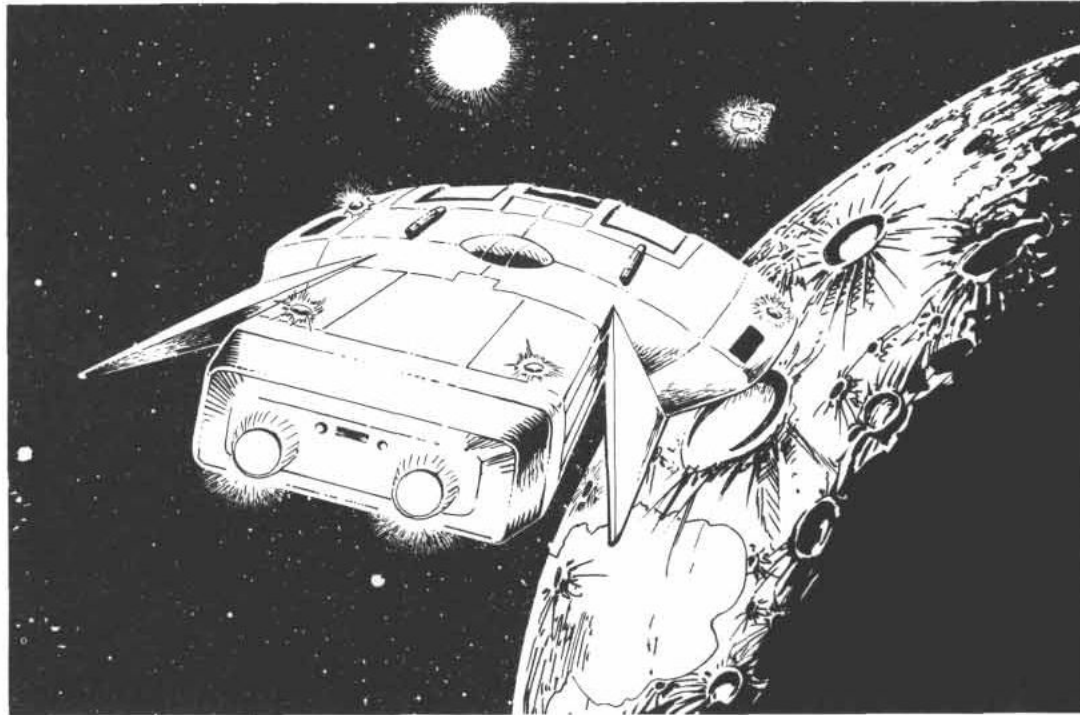
System Defense Boat: Non-jump-capable space vessel of 100+ tons displacement, intended purely for space combat, with no utility role.

Utility Small Craft/Spacecraft Classes

	Low	High
Size	Performance (1-3G)	Performance (4+ G)
1-19/20	Skiff	Gig
20-49	Launch	Pinnace
50-99	Shuttle	Cutter
100+	Lighter	



Reformation Coalition *Manta*-Class Fueler



General Data

Displacement: 400 tons
Length: 33 meters
Price: MCr119.62
Configuration: Dome/Disc SL
Mass (Loaded/Empty): 2789.07/2481.57
Hull Armor: 31
Volume: 5600 m³
Target Size: S
Tech Level: 12

Engineering Data

Power Plant: 700 MW Fusion Power Plant (50 MW/hit), 1 year duration (0.976 MW excess power)
G-Rating: 3G (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 40.8, 25 m³ of fuel each (using dedicated supply; + 140 G-turns if using clipper's fuel)
Maint: 110

Electronics

Computer: 3xTL-12 Mod St Computer (0.4 MW ea.)
Commo: 300,000km radio (10 hexes; 10 MW), 1000AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS fixed array 60,000km (2 hexes; 0.06 MW), Active EMS 60,000km (2 hexes; 12.5 MW)
ECM/ECCM: EM Masking Package (5.6 MW)
Controls: Bridge with 3xbridge workstation, plus 8 other workstations

Armament

None. No turret sockets fitted.

Accommodations

Life Support: Basic (0.56 MW), Gravitic Compensators (3G; 28 MW)
Crew: 12 (1xManeuver, 1xElectronics, 8xEngineering, 1xMaintenance, 1xCommand)
Crew Accommodations: None, other than basic seats at workstations. Fueler is not designed for long duration missions.
Cargo: 62.5 cubic meters/tonnes with one small cargo hatch, plus 3500 m³ for fuel
Air Locks: 4

Notes

Fuel scoops fitted, but no purification machinery.
 The *Manta* is the ultimate expression of the fuel skimmer concept. In the case of the *Manta*, the fuel skimmer no longer shuttles back and forth between the mothership and the fuel source, gradually filling the fuel tankage; instead, the *Manta* itself is the fuel tank. By carrying the fuel tank to the fuel source and filling it there in one trip, time is saved.
 Although the *Manta* was intended to be almost permanently attached to the clipper, detaching only to refuel, clipper crews cannot resist using this extra craft for scouting, sensor sweep, or liaison missions in low-threat environments. Due care is taken of course, because the clipper cannot refuel without it, and carries no fuel other than that carried in the *Manta* or one of the fuel modules.

The Mantas are not designed for long duration missions, and have only basic life support; no showers, eating, or sleeping facilities. On long-duration fuel missions, improvised sleeping arrangements are made by setting up

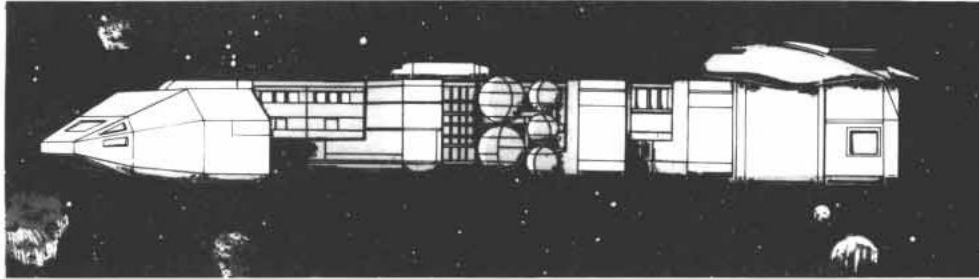
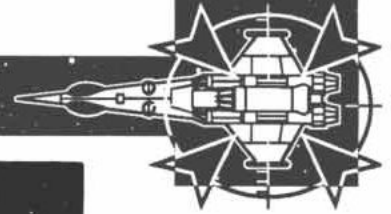
temporary bunks in the cargo hold. Crewmembers often bring along personal food supplies to supplement the preserved survival rations normally stocked.

DAMAGE TABLES

Area	Surface Hits	Internal Explosions	Systems
1	1-3: Ant, 4-6: CH	1-17 Elec, 18-20: Hold	LS-5H
2-5, 10-15		Hold	ELS-3H
6-7	1: AL	1-5: Qtrs, 6-20: Hold	EMM-1H
8-9	1-5: EMMR	Hold	EMMR-(5h)
16-17		1-4: Eng, 5-20: Hold	AG-1H
18-19		1-5: Eng, 6-20: Hold	PP-14H
20		Eng	MD-1H
			CG-1H
			ALL Others-(1h)



Reformation Coalition *Aurora-Class* Clipper



General Data

Displacement: 600/1080/2080 tons Hull Armor: 20
 Length: 144 meters Volume: 8400/14,000/28,000 m³
 Price: MCr749.86 Target Size: M (L)
 Configuration: Open Frame USL Tech Level: 12
 Mass (Loaded/Empty): 17,659.77/13,715.17

Engineering Data

Power Plant: 2280 MW Fusion Power Plant (50 MW/hit), 1 year duration
 Jump Performance: 2 at 1561-2080 tons, 3 at 1249-1560 tons, 4 at 1041-1248 tons (Group III only), 5 at 1040 or fewer tons (Group III only) (Fuel used per jump varies with displacement and jump distance, but is always 4368m³ for maximum jump at current displacement.)
 G-Rating: 2 at all displacements, limited by hull construction. Divide displacement (in 14 m³ tons) by 2 to get MW needed per G of performance. No contra-grav lifters.
 G-Turns: Assuming fuel from fuel skimmer (3500 m³) and 400-ton fuel module (4722 m³), 8222 m³ fuel is available, but fuel use varies with displacement. At 2080 tons, 130 m³ fuel per G-turn, 29.6 G-turns (63.2 using jump fuel). For other configurations, divide MW/G by 8 to get m³ of fuel per G-turn for current displacement.
 Maint: 617

Electronics

Computer: 1xTL-12 Mod Fb Computer (0.8 MW), 2xTL-12 Mod St Computer (0.4 MW)
 Commo: 300,000km radio (10 hexes; 10 MW), 1000 AU maser (∞; 0.6 MW)
 Avionics: TL-10+ Avionics
 Sensors: TL-12 Passive EMS fixed array 120,000km (4 hexes; 0.15 MW), TL-12 Active EMS 300,000km (10 hexes; 27.5 MW), TL-11 Ladar 180,000 km (6 hexes; 2.5 MW)
 ECM/ECCM: EM Masking (8.4 MW)
 Controls: Bridge with 18xBridge Workstation, plus 26 other workstations

Armament

Offensive: 8xTL-12 120-Mj Laser Turret (Loc: 4,5,5—Arcs: 1,2,3,4; Loc: 10—Arcs: All; Loc: 18,19,20,20—Arcs: 2,3,4,5; 3.3 MW ea.; 1 Crew ea.), TL-12 1000-Mj Meson Gun (Loc: Spinal; Arcs: 1; 27.8 MW; 5 Crew)
 Master Fire Directors: 3xTL-12 MFD (4 Diff Mods; No Msl, 10 hexes; 2.95 MW ea.; 1 Crew ea.)

	Short	Medium	Long	Extreme
120-Mj Laser Turret	4:1/4-27	8:1/4-27	16:1/4-20	32:1/4-10
1000-Mj Meson Gun	5:158	10:75	20:38	40:19

Accommodations

Life Support: Extended (1.68 MW), Gravitic Compensators (3G; 42 MW)
 Crew: 85: 26xEngineering, 2xElectronics, 2xManeuvering, 16xGunnery, 7xMaintenance, 18xFlight Crew, 11xCommand, 2xSteward, 1xMedical
 Crew Accommodations: 20xSmall Stateroom (double-occupancy; 0.0005 MW ea.). Additional accommodations for crew contained in 100-ton auxiliary quarters module.
 Passenger Accommodations: None, but additional quarters modules may be added.
 Cargo: 130.75 m³, plus cargo modules, one small cargo hatch
 Small Craft and Launch Facilities: External grapples (USL) for 50-ton Cutter, 30-ton craft, 1x400-ton fuel skimmer, and 4x100-ton, 1x200-ton, and 1x400-ton auxiliary modules.
 Air Locks: 6

Notes

Clipper carries no fuel of its own except for the year's supply (330 m³) for the power plant. All reaction mass and jump fuel carried in *Manta*-class fueler and fuel modules. Listed price does not include *Manta*, but *Manta's* loaded mass is included with the clipper's loaded mass, along with loaded mass of one modular cutter and one 30-ton boat (which account for the extra 80 tons of displacement). Price and mass does not include any modules, although clipper is typically fitted at least with one 100-ton auxiliary quarters module and a 400-ton fuel module. The fuel module carries 4722.4 m³ of fuel, plus fuel purification machinery (9.9 MW) sufficient to purify that amount in 17.17 hours.

The Group III clippers are later models with recovered higher technology jump drives.

Fully loaded clipper only has an actual target size of medium (M), but because its laser turrets are all mounted on turret extenders, it is treated as a large (L) target when being scanned by active sensors.

On the damage table, modules A, B, C, and D are 100-ton modules, module E is a 200-ton module, and module F is a 400-ton module, almost always a fuel module.

When clipper is empty, treat as Open Frame for purposes of hit location and fire arcs. When loaded with any modules, use Close Structure. When *Manta* is not docked, treat hits on areas 12, 13, 16, and 17 as a surface hit on its 400-ton grapple, then reroll for interior hit location on 1D10+10.

For hits on fuel module, use 1-18: Fuel, 19-20: Fuel Purification, with FP-13H. Hits

on a 100-ton quarters module are treated as SSR hits, there are 43 such rooms. Other locations should be handled abstractly as cargo.

DAMAGE TABLES

Area (1D10)	Surface Hits	Internal Explosion	Systems
1	1-6: Ant	1-4: MG, 5-11: Elec, 12-20: Hold	AEEMS-(2h)
2	30-ton Craft	1-5: MG, 6-10: Qtrs, 11-20: 100-ton Module B	MG-16H
3	30-ton Craft	1-5: MG, 6-10, Qtrs, 11-20: 100-ton Module A	JD-27H
4	1: AL, 2-3: Ant, 4-6: EMMR	1: LT, 2-4: Elec, 5-9: Grapple, 10: Qtrs, 11-20: 100-ton Module B	EMM-1H
5	1: CH, 2-3: Ant, 4-6: EMMR	1: LT, 2: LT, 3-4: Elec, 5-9: Grapple, 10: Qtrs, 11-20: 100-ton Module A	PP-46H
6, 8	1-10: Module C, 11-20: Module E	1-10: 100-ton Module C, 11-20: 200-ton Module E	AG-2H
7, 9	1-10: Module D, 11-20: Module E	1-10: 100-ton Module D, 11-20: 200-ton Module E	MFD-1H
10	50-ton Craft	1-9 Meson Gun, 10: LT, 11-18: Module Grapple, 19: 30-ton Grapple, 20: 50-ton Grapple	SSR-(2h)
11, 14-15	Module F	Module F	LS-7H
12-13, 16-17	<i>Manta</i> Surface	<i>Manta</i>	ELS-4H
18	1-10: Module F	1-10: Fuel Module, 11: LT, 12: 400-ton Grapple, 13-20: Eng	MD-2H
19	1-10: Module F	1-10: Fuel Module, 11: LT, 12-20: Eng	LT-1H
20		1: LT, 2: LT, 3-20: Eng	All Others-(1h)
			EMMR-(8h)
			30-ton Grapple-1H
			50-ton Grapple-1H
			100-ton Grapple-2H
			200-ton Grapple-2H
			400-ton Grapple-6H





Clipper Modules

CLIPPER MODULES

The vessels of the *Aurora* class were originally designed as mercantile/exploratory vessels, adaptable to various missions by means of their modular nature. Encounters during early voyages revealed certain inadequacies (primarily in armament and power plant), and the ships were redesigned and rebuilt. The additions to the vessel came at the expense of some fuel and quarters space, and as a result, all *Aurora*-class clippers must carry supplementary fuel tankage, fuel processing machinery, and crew quarters modules.

Aurora-class clippers are normally assigned small craft and modules as follows:

- 1xShip's boat, 1xCutter, and 1xManta in dorsal grapples plus:
- 1x400-ton module
- 1x200-ton module
- 4x100-ton modules (or the equivalent in 25- and 50-ton combinations, i.e., 4x25s, 2x25s and a 50, or two 50s)

A number of specialty modules called Colonizer/Uplift modules are designed to be dropped off on a planetary surface to serve as pre-fabricated colonies on boneyard worlds or to become the center for an uplift mission. Colonizer modules include quarters and administrative centers (which are occupied by the colonists on the trip out, and become their permanent home upon arrival), and other modules such as medical, manufacturing, or educational modules which become training centers for their respective specialties upon arrival. All modules can be used as pre-fabricated components in modular orbital or deep space stations, but usually require additional structural components for this purpose.

Allocating Damage: Assign each module a spot on the main clipper damage table by deciding which of the lettered spaces it represents. For example, take a clipper with a 400-ton fuel module attached to F, a 100-ton quarters module at A, and a 100-ton cargo module at B. If a clipper takes a hit in location 1S, module F has been hit, and the player should roll a D20 on the 400-ton fuel module's damage table below. A hit on location 5 would be slightly more complicated: a roll of 1-10 indicates that the clipper has been hit, a roll of 11-20 indicates that module A has been hit, and a further D20 roll on the relevant 100-ton module damage table is necessary. If a hit occurred on location 9, where no modules have been attached, the result must be rerolled.

When resolving excess damage (TNE, page 320 or *Brilliant Lances*, page 23), the roll may call for the damage to be carried to another hit location, which means a location on the ship's main damage table, not the module's specific subtable. If the new hit location is a different module from the one where the initial damage took place (or is part of the clipper whereas the initial damage took place in a module or vice versa), the excess damage is not immediately resolved in the new location. First, it must penetrate the hull of the current module on its way out, and then penetrate the hull of the module or clipper main hull at the new location. This may use up the remaining damage before it can be resolved as internal explosions in the new location. Note that no surface damage is conducted during this penetration to the neighboring hit location, as these adjoining hull surfaces have no surface fixtures on them. Note also that in some cases the result "same internal area" will also require this procedure of re-penetration into an adjoining hull section. The paragraph above describes a hit on location 5, where 1-10 indicates the clipper and 11-20 indicates module A. If the initial damage were resolved in module A, and then excess damage was rolled for "same internal area," a subsequent roll of 1-10 would call for the excess damage to be taken out of the module and into the clipper hull and require hull penetration to exit the module and again to enter the clipper (which might well use up that damage before getting to the clipper's interior).

MODULE DESCRIPTIONS

25-ton Lifeboat Module

This module is a lifeboat capable of carrying 40 personnel (in emergency low berths) to a planetary surface as necessary during an emergency. It is normally unoccupied, and contains no artificial gravity and only basic life support. Module has insufficient power to run radio while emergency landing thrusters are in use. When not in use as a lifeboat, the module's power plant can supply 19.625 MW of surplus power to the rest of the clipper.

- Volume: 350 m³
- Mass: 161.8 tonnes (loaded), 144.6 (empty)
- Price: MCr5.28
- Crew: Pilot necessary for landing, otherwise none
- Passengers: 40 in emergency low berths
- Features: 20 MW fusion power plant, 10xemergency low berths, 300,000-km radio, 30,000-km PEMS, 1xnormal workstation, 1.72 tonnes of rescue supplies and emergency equipment
- Maint: 5



DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	EMMR	Engineering	LS-1H
2		Electronics	ELS-1H
3-4		Hold	PP-1H
5	AL	Quarters	All Others-(1h)
6-20		Quarters	

25-ton Missile Module

This module provides clippers with additional armament. No quarters are provided for the crew of five, and no outside power is required (0.093 MW surplus power).

- Volume: 350 m³
- Mass: 370.12 tonnes (loaded), 266.12 (empty)
- Price: MCr39.13
- Crew: 3 (1xgunner, 1xelectronics, 1xMFD officer). Quarters not provided.
- Passengers: None.
- Features: 33.1 MW TL-12 fusion power plant, TL-12 300,000-km Missile-capable MFD (4 Diff Mods; Msl 10 hexes; 10 hexes; 3.1 MW; 1 Crew), TL-12 missile barrette, 300,000-km AEMS, TL-12 60,000-km PEMS, 2xnormal workstations.
- Maint: 15

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Quarters	AEMS-(2h)
2	EMMR	Power Plant	MFD-1H
3	Ant	Electronics	LS-1H
4-5	Ant	Electronics	ELS-1H
6	Ant	Hold	PP-1H
7-15	CH	Hold	MB-1H
16-20		Missile Barrette	All Others-(1h)

25-ton VIP/Special Quarters Module

This module provides quarters for important persons or those requiring special atmospheres, gravities, or other environments. No outside power is required (17.7975 MW surplus power). Internal arrangements vary.

- Volume: 350 m³
- Mass: 152.12 tonnes (loaded), 147.62 (empty)
- Price: MCr4.23
- Crew: None.
- Passengers: Three in three large staterooms (single occupancy), up to six more in three small staterooms (single or double occupancy)
- Features: 20 MW TL-12 fusion power plant, 3xlarge staterooms, 1xmeeting room, 3xsmall staterooms.
- Maint: 4

DAMAGE TABLES

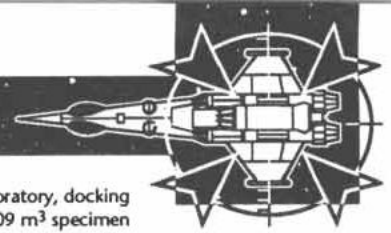
1D20	Surface Hits	Internal Explosions	Systems
1		Power Plant	SSR-(2h)
2		Hold	LSR-1H
3	EMMR	Electronics	LS-1H
4	AL	Quarters	ELS-1H
5-20		Quarters	PP-1H
			All Others-(1h)

50-ton General Cargo Module

This module is an unpowered cargo carrier (525.15m³), without life support or artificial gravity. The module requires 0.752 MW of outside power. A 5-ton liferaft is provided in a docking ring adjacent to spinal corridor entryway.

- Volume: 700 m³
- Mass: 771.99 tonnes (loaded), 246.84 (empty)
- Price: MCr3.37
- Crew: None.
- Passengers: None.
- Features: External grapple for 50-ton module, 2xlarge cargo hatches, 5-ton liferaft and docking ring, 525.15 m³ cargo space
- Maint: 34

Clipper Modules



DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Quarters	EMM-(1h)
2	EMMR	Electronics	EMMR-(1h)
3-9	CH	Hold	Grapple-1H
10-20		Hold	LS-1H ELS-1H All Others-(1h)

50-ton Service Module for 10-ton Small Craft

This module provides a docking port and service facilities for a 10-ton small craft (called "skiffs" in RC service), along with three small staterooms for the maintenance crew. No outside power is required (14.6065 MW surplus power).

Volume: 700 m³

Mass: 500.63 tonnes (loaded), 358.23 (empty)

Price: MCr7.7

Crew: 6xMaintenance

Passengers: None.

Features: 20 MW TL-12 fusion power plant, internal hangar (minimal) and launch port for 10-ton small craft, machine shop, 142.4 m³ storage and supplies, 3xsmall staterooms.

Maint: 20

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Quarters	Hangar-3H
2-3		Quarters	Mach. Shop-1H
4		Power Plant	SSR-(2h)
5	EMMR	Electronics	LS-1H
6-14	LP	Hold	ELS-1H
15-20		Hold	AG-(3h) PP-1H All Others-(1h)

50-ton Power/Fuel Module

This module was specially designed to provide *Maggart*-class "stretch" clippers with additional energy to boost the power of their spinal mount meson weapons. The module is extremely massive, and its use requires careful balancing of mass throughout the rest of the ship. It is usually carried with a 50-ton fuel module (163.46 tonnes loaded, 116.42 empty, MCr3.27, No crew, 672 m³ fuel [47 tons], 3 Maintenance points, requires 0.752 MW outside power) to "dilute" its mass. The module carries one year's fuel for the reactor, and 206.8m³ (14.5 tonnes) of reaction mass. The module meets its own power needs, and supplies 562.606 MW to the clipper, sufficient to power the 2250-Mj spinal mount to the -2 Diff Mod power level.

Volume: 700 m³

Mass: 1296.45 tonnes (Loaded), 1281.98 (Empty)

Price: MCr55.036

Crew: 6 (engineering)

Passengers: Provision for up to 6 in 3 small staterooms (double occupancy)

Features: 567 MW TL-12 fusion power plant, 3xsmall staterooms,

Maint: 60

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1-3	AL	Quarters	EMM-(1h)
4-11		Power Plant	EMMR-(1h)
12	EMMR	Electronics	SSR-(2h)
13-20		Fuel	LS-1H All Others-(1h)

50-ton Survey Module

This module contains a laboratory and sensors for conducting a planetary survey along with a 10-ton small craft housed in a docking ring. Six small staterooms are provided for the crew. No outside power is required (5.545 MW surplus power).

Volume: 700 m³

Mass: 515.22 tonnes (loaded), 322.23 (empty)

Price: MCr74.26

Crew: 8 (5xscientists/lab technicians, 1xelectronics, 2xskiff crew)

Passengers: None.

Features: 20 MW fusion power plant, laboratory, docking ring and launch port for 10-ton small craft, 109 m³ specimen supply storage, 180,000-km PEMS, 3000-km AEMS, densitometer, neutrino sensor, 4xnormal workstations, 6xsmall staterooms
Maint: 21

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	Ant	Power Plant	Neut Sens.-(2h)
2	Ant	Quarters	Lab-1H
3-9	Ant	Electronics	SSR-(2h)
10	EMMR	Electronics	LS-1H
11	Ant	Hold	ELS-1H
12-20	LP	Hold	AG-(3h) PP-1H All Others-(1h)

100-ton Fighter Module

This module provides maintenance facilities and combat support for up to four 16-ton fighters (three in docking rings, one in internal hangar). Fuel and quarters for the crew of eight are not provided. No outside power is required (9.016 MW surplus power).

Volume: 1400 m³

Mass: 1506.28 tonnes (loaded), 476.58 (empty)

Price: MCr12.11

Crew: 8 (4xpilots, 2xmaintenance, 1xelectronics, 1xcommand).

Passengers: None.

Features: 20 MW TL-12 fusion power plant, internal hangar (minimal) for 16-ton fighter, docking rings and launch ports for 3x16-ton fighters, 4x16-ton "Wildbat" fighters, 2x1000 AU maser communicators, 1xnormal workstation, machine shop, 41.7 m³ storage.

Maint: 18

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	EMMR	Quarters	EMM-(3h)
2	EMMR	Power Plant	Hangar-4H
3	Ant	Electronics	Mach. Shop-1H
4-5	Ant	Hold	LS-2H
6-20	LP	Hold	ELS-1H AG-1H PP-1H All Others-(1h)

100-ton General Cargo Module

This module is an unpowered cargo carrier (1353.1m³), without life support or artificial gravity. The module requires 1.502 MW of outside power.

Volume: 1400 m³

Mass: 1539.67 tonnes (loaded), 186.57 (empty)

Price: MCr6.56

Crew: None.

Passengers: None.

Features: 3xlarge cargo hatches, 1353.1 m³ of cargo.

Maint: 69

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Quarters	EMM-(3h)
2	EMMR	Electronics	LS-1H
3	EMMR	Cargo	ELS-1H
4-10	CH	Cargo	All Others-(1h)
11-20	CH	Cargo	





Clipper Modules

100-ton Quarters Mk Ia

This module contains 43 small staterooms, and is designed for maximum capacity, not crew comfort. No outside power is required (21.1965 MW power surplus).

This module is also equipped as a lifeboat: C-G Lifters, ignition chamber, reaction mass (4 G-turns), 1000 AU radio beacon, flight computer, and normal workstation provided for purposes of emergency planetfall only.

Volume: 1400 m³
Mass: 457.99 tonnes (loaded), 442.14 (empty)
Price: MCr15
Crew: None.
Passengers: Up to 86 in 43xsmall staterooms

Features: 30 MW TL-12 fusion power plant, artificial gravity/G compensators, extended life support, 14.1 m³ cargo/storage space, 43xsmall staterooms, 2xair locks. *For Emergency Landings:* 1000 AU radio beacon, 30 MW battery (2 hour duration), CG lifters, 1xnormal workstation, TL-12 flight computer, 1G ignition chamber for emergency planetfall, reaction mass (4 G-turns).

Maint: 15

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Engineering	EMM-(3h) ELS-1H
2	EMMR	Electronics	AG-1H
3	EMMR	Hold	Battery-1H PP-1H
4	AL	Quarters	SSR-(2h) CG-(4h)
5-20		Quarters	LS-2H All Others-(1h)

100-ton Quarters Module Mk Ib

This module contains 31 small staterooms, a sickbay, electronics shop, and machine shop. No outside power is required (18.8005 MW power surplus).

This module is also equipped as a lifeboat: CG Lifters, 1G ignition chamber for emergency planetfall, reaction mass (4 G-turns), 1000 AU radio beacon, flight computer, and workstation provided for purposes of emergency planetfall only.

Volume: 1400 m³
Mass: 637.79 tonnes (loaded), 630.29 (empty)
Price: MCr21.78
Crew: None.
Passengers: Up to 62 in 31 small staterooms.

Features: 30 MW TL-12 fusion power plant, 7.5 m³ cargo/storage space, 31xsmall staterooms, sickbay, electronics shop, machine shop. *For Emergency Landing:* 1000 AU Radio Beacon, 30 MW battery, CG lifters, workstation, TL-12 flight computer, reaction mass (4 G-turns).

Maint: 24

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1-7	Ant	Quarters	EMM-(3h) AG-1H
8	AL	Quarters	EMMR-(1h) Sickbay-1H
9-10	EMMR	Engineering	Elec shop-1H PP-1H
11-12	Ant	Electronics	Mach shop-1H Batt-1H
13-20	Ant	Hold	SSR-(2h) CG-(4h) LS-2H All Others-(1h) ELS-1H

100-ton Armed Quarters Module Mk Ic

This module contains 37 small staterooms, three laser turrets, and a 300,000-km missile-capable MFD (provided to allow missile turrets to be fitted instead of lasers). No outside power is required (5.4995 MW power surplus with power set aside for 3x150-Mj turrets).

This module is also equipped as a lifeboat: CG Lifters, 1G ignition chamber, reaction mass (4 G-turns), 1000 AU radio beacon, flight computer, and workstation provided for purposes of emergency planetfall only.

Turret arcs of fire are 2, 3, 4, regardless of where the module is fitted on the clipper.

Volume: 1400 m³
Mass: 687.95 tonnes (loaded), 657.95 (empty)
Price: MCr40.34
Crew: 4 (3xgunners and 1xMFD operator).
Passengers: Up to 74 in 37 small staterooms.

Features: 30 MW TL-12 fusion power plant, 30 m³ cargo/storage space, 37xsmall staterooms, 3xturret sockets, 3xTL-12 laser turrets, and TL-12 300,000-km missile-capable MFD (4 Diff Mods; Msl 10 hexes; 10 hexes; 3.1 MW; 1 Crew). *For Emergency Landing:* 1000 AU Radio Beacon, 30 MW battery, CG lifters, workstation, TL-12 flight computer, 1G ignition chamber, reaction mass (4 G-turns).

Maint: 27

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	Ant	Engineering	MFD-1H PP-1H
2	Ant	Electronics	EMM-(3h) Battery-1H
3	Ant	Hold	EMMR-(1h) CG-(4h)
4-5		Turret	SSR-(2h) LT-1H
6	AL	Quarters	LS-1H All Others-(1h)
7-9	EMMR	Quarters	ELS-1H
10-20	Ant	Quarters	AG-1H

100-ton Fuel Module

This is an unpowered fuel tank (1353 m³, 94.7 tons), without life support or artificial gravity. The module consumes 1.502 MW of outside power.

Volume: 1400 m³
Mass: 281.28 tonnes (loaded), 186.57 (empty)
Price: MCr6.5
Crew: None.
Passengers: None.
Features: 1353 m³ (94.7 tonnes) fuel.
Maint: 6

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Electronics	EMM-(3h)
2-3	EMMR	Fuel	All Others-(1h)
4-20		Fuel	

100-ton Troop Carrier Module

This module has docking rings for three Fury assault landers, 12 large staterooms (quad occupancy, total of 48: 39 soldiers and 9 lander crew), a ready room/assembly area, and power plant. No outside power is required (11.206 MW surplus power).

Volume: 1400 m³
Mass: 539.04 tonnes (loaded), 314.94 (empty)
Price: MCr10.81
Crew: None.
Passengers: 48 in 12 large staterooms (quad occupancy)

Features: 20 MW TL-12 fusion power plant, 3xFury assault landers and associated docking rings, ready room/assembly area, 12xlarge staterooms (quad occ.), 12.9 m³ storage.

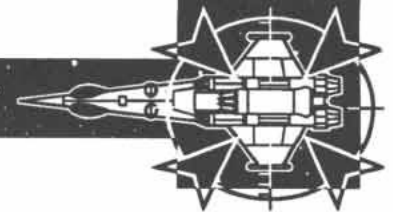
Maint: 19

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	EMMR	Electronics	EMM-(3h)
2		Power Plant	SSR-(2h)
3-6		Hold	LS-2H
7	AL	Quarters	ELS-1H
8-20	LP	Quarters	AG-1H PP-1H All Others-(1h)



Clipper Modules



100-ton Drop Troop Module

This module contains 48 launch tubes for drop capsules (see pages 14-15) and quarters for 36 drop troops. Only 36 of the launch tubes have staging areas to allow the entry of personnel into drop capsules. This allows 12 additional support modules (cargo and decoys) to be carried. Standard load-out is 36xMk 1, 6xMk IIc, and 3 each of Mk IIa and IIb (loaded mass below assumes this mix). There is space for 71.9 tonnes of military equipment. The module has no power plant of its own, and requires 8.791 MW of outside power.

These modules are usually paired with the 100-ton troop carrier modules above. This is because recovery of these drop troops requires the assault landers carried aboard the other module, and because the excess power from the troop carrier module is sufficient to balance out the needs of the drop troop module.

Volume: 1400 m³

Mass: 1033.76 tonnes (loaded), 613.87 (empty)

Price: MCr 9.01

Crew: None.

Passengers: 36xdrop troops in 9xlarge staterooms (quad occupancy)

Features: 48xdrop capsule launch tubes, 36 equipped with staging area for personnel launch, 9xlarge staterooms, 71.9 m³ of cargo.

Maint: 26

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1-8		Pers Launch Tubes	LS-2H Launch tube-(1h)
9-10		Supp Launch Tubes	ELS-1H LSR-1H
11-19		Quarters	AG-1H All Others-(1h)
20	EMMR	Cargo	EMM-(3h)

Note: Pers (Personnel) launch tubes hold Mk 1 capsules, (1h) each if tube is loaded. Supp (Support) launch tubes hold Mk II capsules, which, if loaded, have hits as follows: Mk IIc (1h) unloaded or (2h) loaded, Mk IIb-(2h), Mk IIa-(4h)

200-ton General Cargo Module—Cutter

This module serves as a loading dock for a 50-ton modular cutter. A hangar allows loading of the 29-ton cargo modules onto/off the cutter, and the cargo bay holds three extra cutter modules. No quarters are provided, and outside power is required (17.562 MW).

Volume: 2800 m³

Mass: Loaded mass varies with cutter modules carried, up to 1732.275 tonnes (2525.295 if cutter with gunpack is carried as well), 365.125 (empty)

Price: MCr15.94

Crew: 6 cargo-handling personnel (with 3 "Big Brute" BRTs).

Passengers: None.

Features: Internal hangar (minimal) and launch port for 50-ton cutter, cargo bay (3 modules), 49.55 m³ additional cargo, 4xlarge cargo hatches.

Maint: 9

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Quarters	EMM-1H ELS-1H
2	EMMR	Electronics	EMMR-(2h) AG-1H
3-11	LP	Hold	Hangar-14H All Others-(1h)
12-20	CH	Hold	LS-2H

200-ton Fuel Module (refining)

This module is an unpowered fuel tank (2250 m³), without life support or artificial gravity. The EMM radiators require 2.8 MW, the fuel purification plant (2250 m³ in 12 hours) requires 6.75 MW, and the rest of the module requires 0.202 MW, for a total of 9.752 MW from outside sources.

Volume: 2800 m³

Mass: 1369.125 tonnes (loaded), 1186.725 (empty)

Price: MCr13.1

Crew: None (fuel processing plant controlled from outside).

Passengers: None.

Features: 17.9 m³ additional cargo, fuel processing plant.

Maint: 57

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Electronics	EMM-1H
2-4	EMMR	FPP	EMMR-(2h)
5-20		Fuel	FPP-9H All Others-(1h)

200-ton Quarters Module Mk IIa

This module contains 40 small staterooms, a sickbay (accessible from the docking ring), storage space, and a 924 m³ recreation deck. No outside power is required (81.585 MW surplus power under normal circumstances—full power is only used in lifeboat mode when attempting emergency planetfall).

This module is also equipped as a lifeboat: CG Lifters, 1G ignition chamber, reaction mass, 1000 AU radio beacon, flight computer, and workstation provided for purposes of emergency planetfall only.

Volume: 2800 m³

Mass: 994.83 tonnes (loaded), 860.74 (empty)

Price: MCr37.71

Crew: None.

Passengers: Up to 80 in 40 small staterooms.

Features: 100 MW TL-12 fusion power plant, 40xsmall staterooms, recreation deck, sickbay, 10-ton ambulance skiff in docking ring, 46.6 m³ storage. For Emergency Landing: 1000 AU radio beacon, 20 MW battery (4-hour duration), CG Lifters, workstation, TL-12 flight computer, reaction mass (4 G-turns).

Maint: 34

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	EMMR	Electronics	EMM-1H EMMR-(2h)
2	EMMR	Engineering	Sickbay-1H SSR-(2h)
3	CH	Hold	LS-3H Battery-1H
4-5	LP	Hold	ELS-1H PP-2H
6-7	LP	Quarters	AG-1H CG-1H
8	AL	Quarters	All Others-(1h)
9-20		Quarters	

400-ton Fuel Module (refining)

This module is an unpowered fuel tank (4722.4 m³), without life support or artificial gravity. The fuel purification plant (3300 m³ in 12 hours) requires 9.9 MW, EMM radiators require 5.6MW, and the rest of the module requires 0.404 MW, for a total of 15.904 MW of power from outside the module.

Fuel purifier requires 17.17 hours to purify its entire tankage at the rate of 275 m³ per hour.

Volume: 5600 m³

Mass: 2137.98 tonnes (loaded), 1807.01 (empty)

Price: MCr26.16

Crew: None (fuel processing plant controlled from outside).

Passengers: None.

Features: 4722.4 m³ (330.6 tons) fuel, fuel processing plant.

Maint: 87

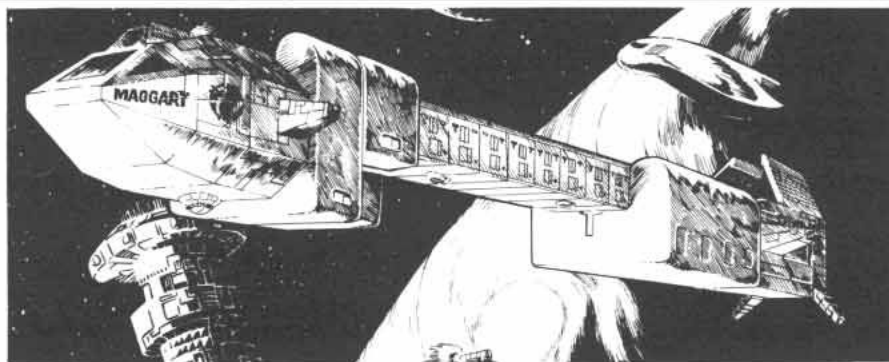
DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	EMMR	Electronics	EMMR-(5h)
2-3	EMMR	FPP	EMM-1H
4		Fuel	FPP-13H
5-20		Fuel	All Others-(1h)





RC Maggart-class Clipper ("Stretched Aurord")



General Data

Displacement: 850/2750 tons
Length: 162 meters
Price: MCr1150.25
Configuration: Open Frame USL
Mass (Loaded/Empty): 22,772.93/18,526.72
Hull Armor: 20
Volume: 11,900/38,500 m³
Target Size: M (L)
Tech Level: 12/14

	MW	Short	Medium	Long	Extreme
120-Mj Laser Turret	3.3	4: 1/2-27	8: 1/2-27	16: 1/4-20	32: 1/2-10
2250-Mj Meson Gun	62.5	6: 237	12: 107	24: 53	—
1165-Mj Meson Gun	32.36	6: 171	12: 77	24: 38	—

Engineering Data

Power Plant: 2960 MW Fusion Power Plant (50 MW/hit), 38.6 weeks duration (fuel carried internally)

Jump Performance: 2 at 2063-2750 tons, 3 at 1651-2062.5 tons, 4 at 1376-1650 tons, 5 at 1375 or fewer tons (Fuel used per jump varies with displacement and jump distance, but is always 5775 m³ for maximum jump at current displacement.)

G-Rating: 2 at all displacements, limited by hull construction. Divide displacement (in 14 m³ tons) by 2 to get MW needed per G of performance. No contra-grav lifters.

G-Turns: Assuming fuel from fuel skimmer (3500 m³) and two fuel module (1x400-ton and 1x100-ton provide 6075 m³), 9575 m³ fuel is available, but fuel use varies with displacement. At 2750 tons, 171.875 m³ fuel per G-turn: 22 G-turns (55.7 using jump fuel). For other configurations, divide MW/G by 8 to get m³ of fuel per G-turn for current displacement.

Maint: 847

Electronics

Computer: 3xTL-12 Mod Fb Computer (0.8 MW ea.)

Commo: 2x300,000-km radios (only one powered; 10 hexes; 10 MW), 2x1000 AU masers (only one powered; ∞; 0.6 MW)

Avionics: TL-10+ Avionics

Sensors: TL-12 Passive EMS fixed array 180,000-km (6 hexes; 0.25 MW), TL-12 Active EMS 480,000-km (16 hexes; 50 MW), TL-11 Ladar 180,000-km (6 hexes; 2.5 MW)

ECM/ECCM: EM Masking package (11.9 MW)

Controls: Bridge with 22xbridge workstation, plus 35 other workstations

Armament

Offensive: 8xTL-12 120-Mj Laser Turret (Loc: 4,5,5—Arcs: 1,2,3,4; Loc: 10—Arcs: All; Loc: 18,19,20,20—Arcs: 2,3,4,5; 3.3 MW ea.; 1 Crew ea.), TL-12 2250-Mj Meson Gun (Loc: Spinal; Arcs: 1; 62.5 MW; 13 Crew)

Master Fire Directors: 3xTL-12 MFD (4 Diff Mods; No Msl, 10 hexes; 2.95 MW ea.; 1 Crew ea.)

Accommodations

Life Support: Extended (2.38 MW), Gravitic Compensators (3G; 59.5 MW)

Crew: 112: 35xEngineering, 2xElectronics, 2xManeuvering, 24xGunners, 13xMaintenance, 18xFlight Crew, 15xCommand, 2xSteward, 1xMedical

Crew Accommodations: None; all crew accommodations are in 100-ton quarters modules.

Passenger Accommodations: None, but may be accommodated in quarters modules

Cargo: None; cargo is carried in cargo modules

Small Craft and Launch Facilities: External grapples for 2x50-ton small craft (modular cutters), 1x400-ton fuel skimmer (*Manta*), and 4x100-ton, 3x200-ton, and 1x400-ton auxiliary modules.

Air Locks: 9

Notes

Also known as Group IV, or "Stretched" *Auroras*, the *Maggarts*, like the Group IIIs before them, benefit from the installation of recovered relic TL-14 jump drives. This allows jump performance up to 5 parsecs at reduced displacements.

The *Maggarts* are improved *Auroras*, modified with improved equipment and lengthened to provide greater module carriage and increased range performance from the spinal weapon. This increased meson tunnel length has increased the weapon's short range from 150,000 km to 180,000, but the weapon does not have an extreme range band. This was accepted because of the weapon's increased reach at short to long ranges, and because the use of the weapon at its extreme range is of marginal utility at best.

The *Maggarts* have a nominal power shortfall of 30.139 MW. However, in practice this is not an issue, as clippers do not operate without modules. Many of these attached modules contain their own power plants which provide excess power back to the clipper which collectively more than make up for the shortfall. However, in the rare event that the clipper operates on only its internal power, the shortfall is taken from the 2250-Mj meson gun, reducing its performance to 1165 Mj. Performance ratings at both power levels are shown on the table in the Armament section. This weapon has beefed-up circuitry to allow its firing at the 5x and 10x overpowering levels (TNE, page 348).

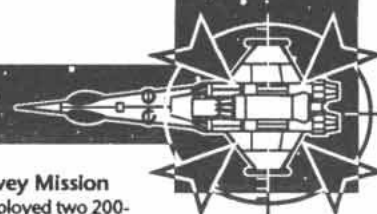
DAMAGE TABLES

Area (1D10)	Surface Hits	Internal Explosion	Systems
1	Ant	1-8: Elec, 9-12: Qtrs, 13: Hold, 14-20: MG	AEMS-(4h) 100-ton Grapple-2H
2	Cutter A	1-7: MG, 8-15: Module B, 16-20: Module D	MG-39H 200-ton Grapple-2H
3	Cutter A	1-7: MG, 8-15: Module A, 16-20: Module C	JD-29H 400-ton Grapple-6H
4	1-15: Ant	1: LT, 2-5: Eng, 6-7: 100-ton grapple, 8-14: Module B, 15-20: Module D	PP-59H All Others-(1h)
5	1-15: Ant	1: LT, 2: LT, 3-5: Hold, 6-7: 100-ton grapple, 8-14: Module A, 15-20: Module C	MD-3H
6-9		1-2: Module D, 3-8: Module E, 9-14: Module F, 15-20: Module G	EMM-1H
10	Cutter B	1: LT, 2-10: MG, 11-20: Module grapples	EMMR-(11h)
11		1: Module C, 2: Module D, 3-8: Module E, 9-14: Module F, 15-20: Module G	AG-3H
12-13	11-20: Manta	1-10: Module H, 11-20: Manta	MFD-1H
14-15		Module H	LS-9H
16-17	Manta	Manta	ELS-5H
18-19	1-4: EMMR	1-3: 400-ton grapple, 4-6: Manta grapple, 7-12: Eng, 13-19: MG, 20: LT	LT-1H
20		1-18: Eng, 19: LT, 20: LT	50-ton Grapple-1H

Hits on modules are taken to the individual module damage tables on the previous pages, depending upon what type of module was fitted in that location. If a module location consists of several sub-modules (for example, 2x100-tonners in the space of a 200-tonner, or 2x50 tonners in place of a 100-tonner), roll randomly for which module was hit, then roll damage on its individual hit table.

Cutter hits are converted to hits on their grapples if the cutters are not in place.

"Stretch" Clipper Loadouts



The clipper carries no fuel of its own except for the 38.6-week supply (330 m³) for the power plant. All reaction mass and jump fuel is carried in *Manta*-class fueler and fuel modules. Listed price does not include the *Manta*, but the *Manta's* loaded mass is included with the clipper's loaded mass, along with loaded mass of two modular cutters. Price and mass does not include any modules, although the clipper is typically fitted at least with one 100-ton and one 400-ton fuel module and two 100-ton quarters modules. The 400-ton fuel module carries 4722 m³ of fuel, plus fuel purification machinery (9.9 MW) sufficient to purify that amount in 17.17 hours. The 100-ton fuel module has no fuel purifier, so its 1353 m³ must be processed by the 400-ton module, requiring 4.9 hours. Note that reaction mass need not be purified, only jump and power plant fuel. Because of their low fuel reserve for G-turns, clippers must be carefully astrogated and piloted so that jump courses conserve the ship's residual velocity and allow it to be translated directly into refueling and orbital vectors.

A fully loaded clipper only has an actual target size of medium (M), but because its laser turrets are all mounted on turret extenders, it is treated as a large (L) target when being scanned by active sensors.

On the damage table, modules A, B, C, and D are 100-ton modules, modules E, F, and G are 200-ton modules (or pairs of 100-ton modules), and module H is the 400-ton module.

When clipper is empty, treat as Open Frame for purposes of hit location and fire arcs. When loaded with any modules, use Close Structure. When *Manta* is not docked, treat hits on areas 12, 13, 16, and 17 as a surface hit on its 400-ton grapple, then reroll for interior hit location on 1D10+10.

"STRETCH" CLIPPER LOADOUTS

The *Maggart*-class "Stretch" clippers are normally assigned small craft and modules as follows:

- 2x Small Craft (50-ton or less, normally two 50-ton modular cutters), and 1x *Manta* in dorsal grapples

plus:

- 1x 400-ton module
- 3x 200-ton modules (or the equivalent in 100-ton module combinations)
- 4x 100-ton modules (or the equivalent in 25- and 50-ton combinations).

On very rare occasions, another ship of up to 400 tons can be "piggy-backed" on the engineering section in place of the *Manta*-class fueler, but this is normally done only with clippers that operate as part of a fleet.

Because stretch clippers are underpowered by 30.139 MW, this power shortfall must be made up by the power surplus from installed modules. Likewise, quarters for all of the the clipper's 112 crew must be provided in modules.

When configuring a clipper for an upcoming mission, it is important to be able to balance the ship's power needs as well as ensure that the ship is not overloaded. This table assists this process by grouping all of the modules together with their loaded masses and power surpluses or requirements.

Note that the loaded mass of *Aurora*-class clippers must remain below 32,124 tonnes, and the loaded mass of *Maggart*-class stretch clippers must remain below 42,472 tonnes.

Modules with Power Deficits

Module	Mass	MW
200-ton General Cargo-Cutter	2525.3	-17.562
400-ton Fuel Module (refining)	2137.98	-15.904
200-ton Fuel Module (refining)	1369.125	-9.752
100-ton Drop Troop Module	1033.76	-8.791
100-ton Fuel Module	281.28	-1.502
100-ton General Cargo Module	1539.67	-1.502
50-ton Fuel Module	163.46	-0.752
50-ton General Cargo Module	771.99	-0.752

Modules with Power Surpluses

Module	Mass	MW
25-ton Missile Module	370.12	+0.093
100-ton Armed Quarters Mk Ic	687.95	+5.4995
50-ton Survey Module	515.22	+5.545
100-ton Fighter Module	1506.28	+9.016
100-ton Troop Carrier Module	539.04	+11.206
50-ton Service Module for 10-ton Small Craft	500.63	+14.6065
25-ton VIP/Special Quarters Module	152.12	+17.7975
100-ton Quarters Mk Ib	637.79	+18.8005
25-ton Lifeboat Module	161.8	+19.625
100-ton Quarters Mk Ia	457.99	+21.1965
200-ton Quarters Module Mk IIa	994.83	+81.585
50-ton Power Generation/Fuel Module	1296.45	+562.606

Sample "Stretch" Loadout: Uplift/Survey Mission

The clipper is shown below after having deployed two 200-ton modules to an uplift mission in a system, on a survey of a second system. The missile module contains additional sensor apparatus that are used as backups for the clipper's normal sensor suite, and are not normally powered. If missile module does not power up its sensor suite (and instead uses that of the clipper), it produces an additional 27.56 MW.

The 200-ton Mk IIa and 100-ton Mk Ib modules provide a total of 71 small staterooms.

Fittings	Mass	MW
<i>Maggart</i> -Class Stretch Clipper	22,772.9346	-30.139
• 2x modular cutters in dorsal grapples	1586.04672	—
• 1x <i>Manta</i> -class fueler in dorsal grapple	2789.066	—
• 1x 400-ton Fuel Module (refining)	2137.98	-15.904
• 1x 200-ton Quarters Module Mk IIa	994.83	+81.585
• 1x 50-ton Survey Module	515.22	+5.545
• 1x 25-ton Missile Module	370.12	+0.093
• 1x 25-ton Lifeboat Module	161.8	+19.625
• 1x 50-ton Service Module for 10-ton Small Craft	500.63	+14.6065
• 1x 50-ton General Cargo Module	771.99	-0.752
• 1x 100-ton Quarters Mk Ib	637.79	+18.8005
• 1x 100-ton Fuel Module	281.28	-1.502
Total	33,519.68732	+91.9580

(with extra power from missile module: +119.518)

Sample "Stretch" Loadout: Escort Mission

The clipper shown below is equipped to carry 20 Wildbat fighters for convoy escort duty. The 200-ton and two 100-ton quarters modules provide a total of 114 staterooms.

Fittings	Mass	MW
<i>Maggart</i> -Class Stretch Clipper	22,772.9346	-30.139
• 2x modular cutters in dorsal grapples	1586.04672	—
• 1x <i>Manta</i> -class fueler in dorsal grapple	2789.066	—
• 1x 400-ton Fuel Module (refining)	2137.98	-15.904
• 1x 200-ton Quarters Module Mk IIa	994.83	+81.585
• 1x 100-ton Fuel Module	281.28	-1.502
• 2x 100-ton Armed Quarters Mk Ic	1375.9	+10.999
• 5x 100-ton Fighter Module	7531.4	+45.08
Total	39,469.43732	+90.119

Sample "Stretch" Loadout: Moonshadow Mission

This clipper is equipped to set up a deep space listening post (using cutter habitation, supply and communications modules from pages 142-143 assembled into an orbital base), drop off supplies to friendly partisan groups, and deploy several covert operatives to a planetary surface. The 200-ton cutter support modules allow the clipper to haul as many as 4 modular cutters and 10 cutter modules. The 200-ton, 100-ton, and two 25-ton quarters modules provide a total of 83 small and 6 large staterooms.

Fittings	Mass	MW
<i>Maggart</i> -Class Stretch Clipper	22,772.9346	-30.139
• 2x modular cutters in dorsal grapples	1586.04672	—
• 1x <i>Manta</i> -class fueler in dorsal grapple	2789.066	—
• 1x 400-ton Fuel Module (refining)	2137.98	-15.904
• 1x 200-ton Quarters Module Mk IIa	994.83	+81.585
• 2x 200-ton General Cargo-Cutter	5050.59	-35.124
• 2x 25-ton VIP/Special Quarters Module	304.24	+35.595
• 2x 25-ton Lifeboat Module	323.6	+39.25
• 2x 50-ton Service Module for 10-ton Small Craft	1001.26	+29.213
• 1x 100-ton Fuel Module	281.28	-1.502
• 1x 100-ton Armed Quarters Mk Ic	687.95	+5.4995
Total	37,929.77732	+108.4735





Kelley Victrix (Victrix-Class Multimission Sloop)

General Data

Displacement: 400 tons
Length: 60.5 meters
Price: MCr349.00
Configuration: Slab AF
Mass (Loaded/Empty): 5704.46/5496.33
Hull Armor: 40
Volume: 5600 m³
Target Size: 5
Tech Level: 12/13

Engineering Data

Power Plant: 955 MW TL-12 Fusion Power Plant (50 MW/hit), 1 year duration (29.61075 MW power shortfall)
Jump Performance: 4 (1400 m³ fuel for Jump-4, 1050 m³ for Jump-3, 700 m³ for Jump-2, 350 m³ for Jump-1) with relic TL-13 jump drive
G-Rating: 4C (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 37 with Jump-4 fuel reserve (51 with Jump-3 fuel reserve, 65 with Jump-2 fuel reserve, 79 with Jump-1 fuel reserve, 93 using all jump fuel), 25 m³ fuel each
Fuel Tankage: 2325 m³ (166 tons), plus 143.25 m³ (10.23 tons) reserved for power plant
Maint: 222

Electronics

Computer: 3xTL-12 Mod Fb Computers (0.4 MW ea.)
Commo: 2xTL-12 1000 AU radio (only one powered to 300,000-km level, 10 hexes, 10 MW), TL-12 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics, TL-12 Terrain-Following Avionics
Sensors: TL-12 Passive EMS fixed array 150,000-km (5 hexes; 0.2 MW), TL-12 Active EMS 300,000-km (10 hexes; 27.5 MW)
ECM/ECCM: TL-12 120,000-km EMS Jammer (4 hexes; 33 MW), TL-12 15,000-km Area jammer (same hex; 6.75 MW), EM masking package (5.6 MW)
Controls: Bridge with 9xbridge workstations, plus 10 other workstations

Armament

Four hardpoints fitted with mass and power reserved for four turrets totalling up to 280 tonnes and drawing 18.3 MW (Loc: 2, 3, Arcs: 1, 2, 3; Loc: 10, 10, Arcs: All) Sample fittings include 4x150-Mj laser turrets, 1xTL-12 Nuclear Damper and 1x120-Mj laser turret, etc. Typical fitting is listed below. Weapons listed as "Planetary Combat Only" are permanent fittings.

Offensive: 3xTL-12 120-Mj Laser Turret (Loc: 2, 3; Arcs: 1, 2, 3; Loc: 10; Arcs: All; 3.3 MW ea.; 1 crew ea.)

	Short	Medium	Long	Extreme
120-Mj Laser Turret	4: 1/9-27	8: 1/9-27	16: 1/6-19	32: 1/3-9

Defensive: 1xTL-12 Sandcaster Turret (Loc: 10, Arcs: All; TL-12, 1D10x5 per hit; 30 Cann; 1 MW; 1 Crew)

Master Fire Directors: 2xTL-12 Missile/Beam MFD (4 Diff Mods; Msl 10 hexes; 10 hexes; 3.1 MW ea.; 1 Crew ea.)

Planetary Combat Only: 2xforward-firing rapid-fire plasma guns with 100 rounds per gun (data below), 1xremote turret with squad support laser with 2000 rounds (see page 96 for complete firing data). Both weapons below are fitted with advanced stabilization, meaning that they can be fired without loss of accuracy at any speed.

Description	ROF	SR	Dam	Pen Val	Conc-Burst	FC
76-Mj RF Plasma Gun	SAS	2280	100	100-100-50-10	10-15	4
Squad Support Laser	SAS	300	varies	Nil	—	4

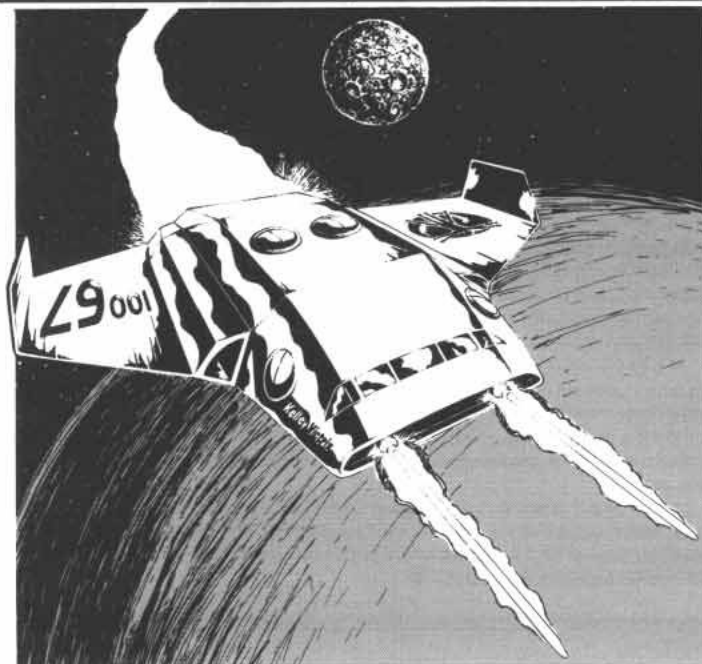
ROF: Rate of fire in shots per 5-second combat turn, SR: Short Range in meters, Dam: Damage Value, Pen Val: Penetration Value at short-medium-long-extreme ranges, Stab: Stabilization, FC: Fire control, showing number of firing difficulty modifiers which may be disregarded

Accommodations

Life Support: Extended (1.12 MW), Grav Compensators (3G; 28 MW)
Crew: 26 (2xManeuver, 2xElectronics, 6xGunnery, 10xEngineering, 2xMaintenance, 3xCommand, 1xMedic)

Crew Accommodations: 1xSmall Stateroom (0.0005 MW), single occupancy for captain, 12.5xSmall Staterooms (0.0005 MW ea.), double occupancy for remainder of crew

Passenger Accommodations: None, but pods may accommodate troops
Cargo: 8 m³ with small cargo hatch plus 40-ton multimission pod
Small Craft and Launch Facilities: None
Air Locks: 4



Notes

The Victrix ships are survivors of and copies of a class of multipurpose warships constructed by the Solomani Confederation during the Final War. They are true TL-12 thoroughbreds: fast, long-legged, well-armed, and highly capable, but "high-strung" and quite demanding to operate. All 11 units of the class currently serving the RCES are slightly different, but *Kelley Victrix*, detailed here, is a good representation.

Like all Victrix ships, *Kelley Victrix* is a tight design. Except for her recovered TL-13 jump drive, all of her systems are TL-12. (All Victrix ships have at least jump-3 performance with TL-12 drives, but some are fitted with recovered lightweight TL-14 drives. These not only allow higher absolute performance, but the weight savings allows these vessels to have beefed-up hull plating.)

All crewmembers except the captain are housed at double occupancy, but when extra crew or troops are carried (as is typically the case), "hot bunking" (three or more crew per small stateroom) is required. Fuel carriage is also at a premium; Victrix ships always require careful attention to fuel usage. The G-turn figures above based on fuel reserved for "Jump N" apply equally as well to a ship which has just arrived in system after having completed such a jump. An additional 6 G-turns may be gained by burning power plant fuel, but this is potentially risky. Although all Victrix ships have "good legs" based on their jump-3+ performance, the cost in their limited fuel tankage means that such deep penetration missions must have their jumps carefully plotted to place a fuel source very near the far end of the jumpspace "hole," preferably in such a position as to completely use up the ship's residual velocity (see TNE, page 224).

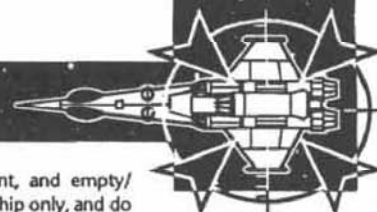
Ship's systems draw a total of 984.61075 MW, a shortfall of 29.61075 MW. When the contra-grav is secured, there is no shortfall, but while the CG is in use, the area jammer is usually shut down, and the EMS deceptive jammer has its short range reduced to 3000 km (quite sufficient to counter planetary surface and orbital threats when flying NOE). Note that the power shortfall varies. 18.3 MW are set aside for weapons (allowing a nuclear damper or relic 150-Mj lasers to be fitted), but the 3x120-Mj laser, 1xsandcaster fit shown above draws only 10.9 MW, leaving 7.4 MW for other purposes.

DAMAGE TABLES

Area (1D20)	Surface Hits	Internal Explosion	Systems
1	1-16: Ant	1-2: PI Gun A, 3-4: PI Gun B, 5: Remote SSL, 6-20: Elec	JD-9H PP-19H CG-1H MD-1H FPP-5H AG-1H LS-10H ELS-5H SSR-(2h) Sickbay-1H MFD-1H AEMS-(2h) EMMR-(5h) LT-1H Sand-1H PI Gun-1H Remote SSL-(1h) EMM-1H All Others-(1h)
2-3	1-19: Ant	1-4: Elec, 5-7: LT, 8-11: Hold, 12-20: Qtrs	
4	1-9: Ant, 10: AL	1-4: Eng, 5-8: Elec, 9-20: Hold	
5	1-10: Ant	1-4: Eng, 5-8: Elec, 9-20: Hold	
6-7		1-15: Qtrs, 16-20: Hold	
8	1-2: SCH	1-5: Pod, 6-20: Hold	
9		1-5: Pod, 6-20: Hold	
10		1-3: Sand, 4-6: LT, 7-20: Hold	
11		Pod	
12-13		Hold	
14-15		1-5: Pod, 6-20: Hold	
16-17	1-2: EMMR	1-14: Eng, 15-20: Hold	
18-19	1-2: EMMR	1-15: Eng, 16-20: Hold	
20		Eng	

For Pod hits, see specific pod damage table on facing page





Unlike most starships, Victrix ships are equipped with direct fire ground-attack weapons. These are of absolutely no use in space combat due to their limited range, but are used in planetary combat. The two plasma guns are used for strafing ground targets in support of ground troops, and are fired using the Approach Fire rules (TNE, page 295). These weapons are fired by the pilot/maneuver officer, and can be fired in High or NOE flight modes. They are fully stabilized to allow fire at any speed, and their fire control allows up to four Difficulty Modifiers to be disregarded. See the atmospheric ratings below for defensive benefits to the Victrix due to its speed in the planetary combat arena. A full load of ammunition for each gun (200 rounds total) costs MCr0.38 (Cr380,000).

Victrix ships are also equipped with a remote chin turret mounting a squad support laser (see page 96). This turret is fully stabilized with -4 Diff Mod fire control like the plasma guns, but is usually used in the NOE mode to lay down suppressive antipersonnel fire when recovering troops. The turret can be fired by one of the bridge command crew or an MFD operator, but no additional bonuses apply when fired under MFD control. The turret can bear in any direction below or at the same level as the ship, but may not fire at targets above the ship. Use data on page 96 for firing the SSL. A full load of ammunition costs MCr0.054 (Cr54,000).

Although some of the relic Victrix ships have not been refitted for multimission pod carriage, all of the new-build vessels (TailNo 10067 and later) are fitted for the carriage of a 40-ton (560 m³) mission configurable pod in their bellies. These pods are detailed

below. The prices, maintenance requirement, and empty/loaded masses on the facing page are for the ship only, and do not include the pod. Maximum allowed mass for all pods is 473 tonnes, or ship's performance will fall to 2Gs.

TL-12 fuel purification machinery (3.6 MW), 23.25 hours to refine 2325 m³ (166 tons), or 100 m³ (4 G-turns) refined per hour. 11% scoops allow craft to skim full fuel load in one hour.

Because its mission and some of its weapons call upon the Victrix ships to operate in planetary atmospheres, planetary combat ratings (as distinct from the Brilliant Lances/Space Combat ratings above) are listed below.

Atmospheric Ratings

Speeds: 5600 kph maximum, 4200 kph cruising, 480 kph maximum NOE
 Combat Move (10-meter grid squares per 5-second combat turn): 778 (High Mode absolute speed), 22 (NOE safe speed)

Travel Move (km per four hours): 16,800 (High Mode), 960 (NOE)
 Agility (Target Movement Difficulty Modifiers): +9 Diff Mod (max speed, use vs. High Mode combat move), +8 Diff Mod (cruising, use vs. High Mode travel move), +6 Diff Mod (use vs. Safe NOE combat move), +8 Diff Mod (use vs. 2xSafe NOE combat move), +10 Diff Mod (use vs. 3xSafe NOE combat move)

40-TON PODS FOR VICTRIX-CLASS MULTIMISSION SLOOPS

Unlike many of the modules built for the modular cutters and clippers, the Victrix pods shown below have no provision for independent operation. Although they are built with internal frameworks, pods are not constructed with their own hull shells, and instead rely on the hull shell of the carrying ship. These shell-less pods must be fitted at a starport, and cannot be loaded in the field, as modules with hull shells can be.

Pod-equipped vessels use the same procedure for resolving excess damage as described for clipper modules on page 132.

Drop Capsule/Missile Launcher Pod

This pod contains facilities to launch up to 24 drop capsules or standard space combat missiles. Unlike the similar pod in the multimission scout, the Victrix pod contains no missile-capable MFD, as the Victrix already has two of its own. Another difference is that while the MM Scout pod uses a separate launch tube for each capsule, the Victrix pod has two automatic launchers. The advantage of the autolauncher is that it requires less space, as there is only one staging area per autolauncher rather than per tube, and it also requires less surface area. Disadvantages include its nominally lower rate of fire (one round every two seconds) and that there is no external life support for the drop troops once they are in their capsules. This means that the troops are on their internal oxygen while they wait for launch, which can create some sticky timing issues. Since it can take almost half an hour to load 12 troops into a 12-round autolauncher, the first troop loaded will be almost half finished with his on-board oxygen by the time all are ready to go. If the drop is planned for an ODHO (see page 14) profile, this may be a problem.

The pod also contains 5.5 small staterooms for the 22 troops, and cargo space for 36.67 m³ of their equipment (maximum of 36.67 tonnes). The mix of drop capsules carried is limited by a ceiling of 222.58 tonnes. Typical loadouts include: 16xMk I, 4xMk IIc, 2xMk IIb, 2xMk IIa; 14xMk I, 4xMk IIc, 3xMk IIb, 3xMk IIa; or 14xMk I, 2xMk IIc, 4xMk IIb, 4xMk IIa.

Volume: 560 m³

Mass: 250.42 tonnes unloaded, maximum loaded weight of 473 tonnes (maximum load of drop capsules is 24 totalling 222.58 tonnes, see pages 14-15 and use empty mass for Mk I and IIc, loaded mass for Mk IIa and IIb)

Price: MCr0.494

Crew: 0 (ship's MFD operator controls the pod).

Passengers: 22 (carried quadruple occupancy in 5.5xsmall staterooms)

Features: 2x12-round drop capsule/missile autolaunchers able to fire RC Mk I and II drop capsules or standard space combat missiles, quarters for 22 drop troops, cargo space for 36.67 tonnes/m³. Pod draws life support from the ship's main system, and requires 0.0055 MW power.

Maint: 13 (does not include maintenance required for each capsule, see pages 14-15).

DAMAGE TABLES

ID20	Internal Explosion	Systems
1-7	Autolauncher A	Autolauncher (each)-1H
8-14	Autolauncher B	SSR-(2h), 1/2 SSR-(1h)
15-19	Small stateroom	Roll randomly for individual capsule hit if
20	Cargo	autolauncher is loaded. Resolve hits against capsules within autolauncher as Mk I-(1h), Mk IIc-(1h) unloaded, -(2h) loaded, Mk IIb (2h), Mk IIa-(4h)

Troop Carrier Pod

This pod contains quarters for 48 troops (although up to 64 may be carried at an additional decline in comfort). The troop pod requires 0.008 MW of power from the carrying vessel, and additionally draws off of the ship's extended life support and artificial gravity, but at no further increase in power requirement. Cargo space is for battle dress, weapons and ammunition, and light vehicles such as broomsticks (page 11) or grav bikes (TNE, page 365).

Note that troops are not carried indefinitely in these conditions, as their efficiency will eventually be degraded by the lack of training and exercise spaces.

Volume: 560 m³

Mass: 51.95 tonnes empty, 162.62 tonnes loaded

Price: MCr0.68

Crew: None

Passengers: Accommodations for 48-64 troops in 16 small staterooms (0.0005 MW ea.) requires hot bunking (3-4 per room)

Features: 110.67 tonnes/m³ of cargo with one large cargo hatch

Maint: 8

DAMAGE TABLES

ID20	Internal Explosions	Systems
1-16	Small stateroom	SSR-(2h)
17-20	Cargo	

Vehicle Pod

This pod contains a minimal hangar for a vehicle of up to 15 tons (210 m³) and quarters for 15-20 troops. The hangar allows the craft to be maintained, and permits repair tasks to be conducted at +1 difficulty level. The pod requires 0.002 MW of power from the carrying vessel, and additionally draws off of the ship's extended life support and artificial gravity, but at no further increase in power requirement.

Stateroom capacity allows carriage of mixed infantry/vehicular unit.

Carried vehicle must mass less than 334.38 tonnes if Victrix is to maintain 4G performance. Mass above this level reduces Victrix to 2Gs while vehicle is being carried.

Volume: 560 m³

Mass: 113.95 tonnes empty, loaded mass varies with vehicle, recommended maximum loaded mass is 473 tonnes (334.38 tonne vehicle mass in addition to 26.67 tonnes cargo)

Price: MCr0.33

Crew: None.

Passengers: Accommodations for 12-16 troops in 4 small staterooms (0.0005 MW ea.) requires hot bunking (3-4 per room)

Features: Minimal hangar with launch doors for 15-ton vehicle, 26.67 tonnes/m³ of cargo with small cargo hatch

Maint: 7

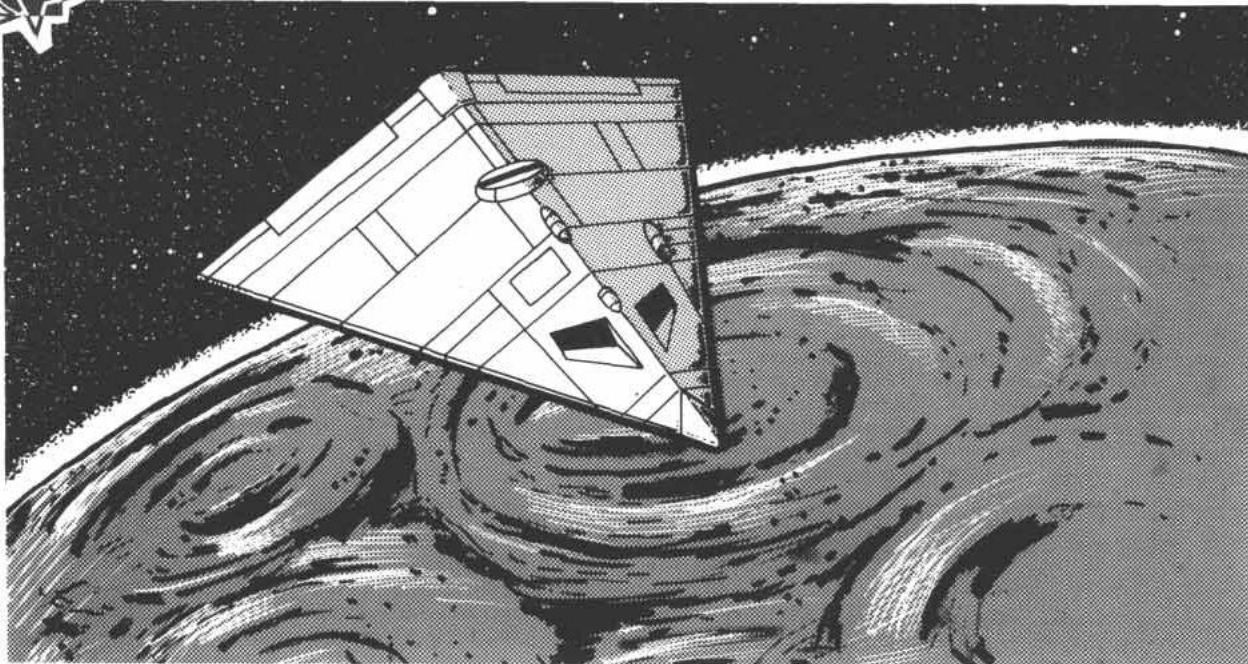
DAMAGE TABLE

ID20	Internal Explosions	Systems
1-15	Hangar	SSR-(2h)
16-19	Small stateroom	Hangar-4H
20	Cargo	





Multimission Scout



General Data

Displacement: 100 tons
Length: 35 meters
Price: MCr52.03
Configuration: Wedge SL
Mass (Loaded/Empty): 575.8/523.0
Hull Armor: 28
Volume: 1400 m³
Target Size: S
Tech Level: 15(-)

Engineering Data

Power Plant: 147 MW TL-15 Fusion Power Plant (147 MW/hit), 1 year duration (9.082 MW power shortfall)
Jump Performance: 2 (210 m³ fuel)
G-Rating: 2G (50 MW/G), Contra-Grav lifters (10 MW)
G-Turns: 80 (113.6 using jump fuel), 6.25 m³ fuel each
Maint: 22

Electronics

Computer: 3xTL-15 Mod St Computers (0.55 MW ea.)
Commo: TL-15 300,000-km radio (10 hexes, 10 MW), TL-15 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: TL-15 Passive EMS folding array 150,000-km (5 hexes; 0.15 MW), TL-15 Active EMS 300,000-km (10 hexes; 15 MW)
ECM/ECCM: TL-12 15,000km Area jammer (same hex; 6.75 MW)
Controls: Flight deck with 3xworkstation

Armament

Offensive: 1xTL-12 120-Mj Laser Turret (Loc: 10; Arcs: 1, 2, 3; 3.3 MW; 1 crew)

	Short	Medium	Long	Extreme
120-Mj Laser Turret	4: 1/9-27	8: 1/9-27	16: 1/6-19	32: 1/3-9

Accommodations

Life Support: Extended (0.28 MW), Grav Compensators (6G; 7 MW)
Crew: 4 (2xManeuver, 1xElectronics, 1xGunner)
Crew Accommodations: 2xLarge Staterooms (0.001 MW ea.), double occupancy
Passenger Accommodations: None
Cargo: 3.1 m³ plus 20-ton multimission pod
Small Craft and Launch Facilities: None
Air Locks: 1

Notes

These are standard TL-15 relic scout/couriers which have been modified by the Aubani Navy to serve as small multimission special operations vessels, and are normally seconded to the RCES. These Scouts (MM) have had their cargo, hangar, and some accommodations spaces gutted, and the remainder of their internal systems rearranged to allow for a single 20-ton bay to be fitted along the ventral surface. The Scout (MM) has also been fitted with a TL-12 area barrage jammer with a 15,000 km range. This allows effective planetary surface jamming from orbit. The ship's systems draw a total of 156.082 MW, 9.082 MW more than its power plant provides. This means that its active EMS sensor may not be operated while its jammer and laser turret or firing, that it can only use 1G of maneuver while all other systems operate, or some other trade-off.

The ventral 20-ton bay accepts one of several 20-ton pods allowing the ships to be rapidly converted from one mission to another, as shown on the facing page.

These pods may be ejected at the end of the mission (although this is not advisable for any but the planetary strike pod, due to their expense). However, they cannot operate independently, as they have no outer hulls, but merely fit into the scout's modular bay. When the pod is ejected, the scout can close its bay doors and pressurize the now completely open 280 m³ area. Hits in this area when it is empty must be re-rolled as additional internal damage. Damage indicated on the damage table below as "pod" are rolled on the pod damage tables on the facing page.

The prices, maintenance requirements, and loaded and empty masses listed above are for the scout without the pod. Add the pod figures from the facing page to these figures to get the final values.

TL-15 Fuel purification machinery (1.05 MW), 20.28 hours to refine 710 m³ (50.7 tons).

DAMAGE TABLES

Area (1D20)	Surface Hits	Internal Explosion	Systems
1	Ant	1-15: Elec, 16-20: Hold	JD-TH
2-3	1-16: Ant	1-11: Qtrs, 12-20: Hold	PP-1H
4-5, 12-13		Hold	CG-(4h)
6-7		1-11: Qtrs, 12-20: Hold	ELS-1H
8-9, 14-15		1-15: Pod, 16-20: Hold	MD-(2h)
10	1: AL	1-12: LT, 13-20: Hold	FPP-1H
11		Pod	AG-1H
16-17		1-5: Eng, 6-20: Hold	LSR-1H
18-19		1-6: Eng, 7-20: Hold	LS-1H
20		Eng	All Others-(1h)





20-TON PODS FOR MULTIMISSION SCOUTS

There are only a limited number of 20-ton pods in existence, as the more capable Victrix ships (pages 138-139) are supplanting the MM scouts in the RCES' reconfigurable multimission role.

Unlike many of the modules built for the modular cutters and clippers, the scout modules have no provision for independent operation. Although they are built with internal frameworks, they are not constructed with their own hull shells, and instead rely on the hull shell of the scout. These hull shell-less modules must be installed at a starport, and cannot be removed, swapped, and replaced in the field as can modules with their own external hulls. For this reason, these hull-less modules are usually called "pods" to distinguish them from the more common hulled modules.

Pod-equipped vessels use the same procedure for resolving excess damage as described for clipper modules on page 132.

Drop Capsule/Missile Launcher Pod

This pod contains 15 launch tubes capable of launching standard 7-kiloliter space combat missiles or drop capsules, and a 300,000-km range missile-capable MFD. This MFD allows the launcher to fire space combat missiles, and also allows the scout (MM)'s gunner to operate the drop capsule launcher and ship's laser turret from this single location, eliminating the need to add an additional crewmember to the already cramped scout to operate this pod. Each of the 15 launchers includes a small staging area which allows the capsule occupants to enter and exit their drop capsule while they are loaded into their launch tube, and also provides external basic life support for capsule occupants before they are launched (meaning that the one-hour air supply fitted to the battle dress suit is not consumed while the trooper is in the tube waiting to be launched—this is crucial when conducting ODHO drops, see page 14). The pod requires 3.1 MW of power, raising the ship's shortfall to 12.182 MW, which can also be made up by shutting down the active EMS.

The pod does not contain quarters for the up to 15 drop troops, so they are only carried for a period of several hours before they board their capsules.

Volume: 280 m³

Mass: 149.65 tonnes unloaded, 254.65 tonnes loaded (assuming a mass of 7 tonnes per missile/drop capsule), maximum loaded weight of 431.95 tonnes (assuming load-out of all Mk IIa drop capsules, see pages 14-15)

Price: MCr25.71

Crew: 1 (scout gunner may be used for this position)

Passengers: None (carries up to 15 drop troops for short periods)

Features: 15 launch tubes able to fire RC Mk I and II drop capsules or standard space combat missiles, 1xTL-12 missile-capable MFD (4 Diff Mod; Msl 10 hexes; 10 hexes; 3.1 MW; 1 crew)

Maint: 8

DAMAGE TABLE

1D20	Internal Explosion	Systems
1-15	Launch Tube	Launch Tube-1h (unloaded), -3h (loaded Mk I, IIb, IIc), -1H (loaded Mk IIa)
16-17	MFD	MFD-1H
18-20	Reroll	Note: Launch Tube hit means 1 crew casualty if occupied

Planetary Strike Pod

The planetary strike (the term planetary bombardment is frowned upon within the RCES, as it smacks of the indiscriminate atrocities practiced during the Final War; strike implies pinpoint precision, and a commitment to limiting collateral damage and incidental casualties) pod contains launch rails for the Spruce, Fir, and Pine families of 30cm planetary strike missiles (page 109). In addition, it contains a workstation for the missile launch officer, which includes launch control units for homing and target seeker missiles, plus a 6000-km laser illuminator which can be used for target designation or beam-riding control.

The planetary strike pod requires 0.04 MW from the scout, and also draws off of its life support systems, but at no further power cost. These pods may not be reloaded in the field without special equipment, and are sometimes discarded after being emptied. Most of the maintenance time listed below consists of running automated diagnostic and troubleshooting programs on the sophisticated carried missiles.

The bay is constructed so that hits which destroy missiles do not cause internal explosions in the scout; but are vented into space.

Volume: 280 m³

Mass: 279.62 tonnes empty, 551.62 tonnes loaded

Price: MCr13.64, not including missile price (see page 109)

Crew: 1

Passengers: None

Features: Launch rails for 68 Spruce/Fir/Pine 30cm missiles

Maint: 28

DAMAGE TABLE

1D20	Internal Explosion	Systems
1-19	Missile rail	Gunner's Station-(1h)
20	Gunner's station	Missile rail: *

*1 minor hit per empty rail, 2 minor hits per loaded rail. In addition, each minor hit destroys 1D6 additional missiles in the pod.

Command Pod

This pod meets the need for mobile command and control capabilities, and is the approximate equivalent of a flag bridge on a larger starship. Its integral power plant produces 20 MW, which is 8.3975 MW in excess of the pod's needs (the pod requires 11.6025 MW). This additional power is provided to the scout, which almost entirely makes up for the scout's power shortfall. The command pod does draw off of the scout's extended life support and artificial gravity, but at no increase in power requirement.

Volume: 280 m³

Mass: 61.6 tonnes empty, 67.7 tonnes loaded

Price: MCr5.8789

Crew: 8

Passengers: Accommodations for its 8 crew in 5 small staterooms (0.0005 MW ea.) requires double occupancy in three of the staterooms

Features: Flag bridge with 8xbridge workstations, 2xTL-12 300,000-km radios (only one powered, 10 hexes, 10 MW), 2xTL-12 1000 AU Maser communicators (∞, 0.6 MW ea), 1xTL-12 Mod St computer, TL-12 fusion power plant generating 20 MW (20 MW/hit, 8.3975 MW excess) with fuel for one year duration, 6.1 tonnes cargo, 3 m³ fuel (0.2 tons)

Maint: 3

DAMAGE TABLE

1D20	Internal Explosions	Systems
1	Power Plant	SSR-(2h)
2	Hold	PP-1H
3-10	Electronics	All Others-(1h)
11-20	Quarters	



Cutter Modules



CUTTER MODULES

The 50-ton modular cutter is one of the workhorses of the Coalition's fleet of small craft, largely due to the versatility and flexibility that the various modules created for it.

STANDARD MODULES

These modules are designed to operate with the cutter as an integrated unit, and many of them are dependent on the cutter for some or all of their power (for other modules, see Station Modules, below). The cutter has 10.9196 MW to cover module power needs, more than enough for those listed.

ATV Module

This module was designed to carry one wheeled or tracked ATV (up to 50 tonnes) from space to a planetary surface. The module has no artificial gravity, and any passengers or cargo in the ATV must be securely strapped down (which is why passengers are seldom carried inside ATVs transported in this fashion). The ATV requires no power from the cutter.

Volume: 406 m³
Mass: 211.84 tonnes (loaded), 161.84 (empty)
Price: MCr0.16
Crew: None.
Passengers: None (normally)
Features: ATV "hangar"

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1-10	LCH	ATV "Hangar"	ATV "Hangar" -1H
11-20	LCH	ATV	

Fuel Module

This is the standard fuel-skimming module and one of the most common modules for the 50-ton modular cutter. It contains a fuel processing plant capable of refining 277 m³ (19.8 tonnes) in 6 hours, and requires external power (1.662 MW) to operate, and carries 10 m³ of ordinary cargo in addition to 277 m³ of fuel. It is not fitted with artificial gravity or life support.

Volume: 406 m³
Mass: 373.63 tonnes (loaded), 344.24 (empty)
Price: MCr0.17
Crew: None (fuel processing plant controlled from cutter flight deck)
Passengers: None.
Features: Fuel processing plant, fuel scoop, 277 m³ LHyd fuel, 10 m³ ordinary cargo.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Cargo (non-fuel)	FPP-3H
2-7		Fuel Processing Plant	
8-20		Fuel (LHyd)	

Laser Gunpack (TL-11)

This module allows a cutter to be converted into an offensive weapon. With this module fitted, the cutter is reduced to 1G acceleration, but the gunpack contains an additional 30 m³ of reaction mass to extend the cutter's range (1.6 additional G-hours). The excess power from the cutter (46.27 MW at only 1G) plus the gunpack's onboard power can be used to overpower both laser barbettes to -1 Diff Mod.

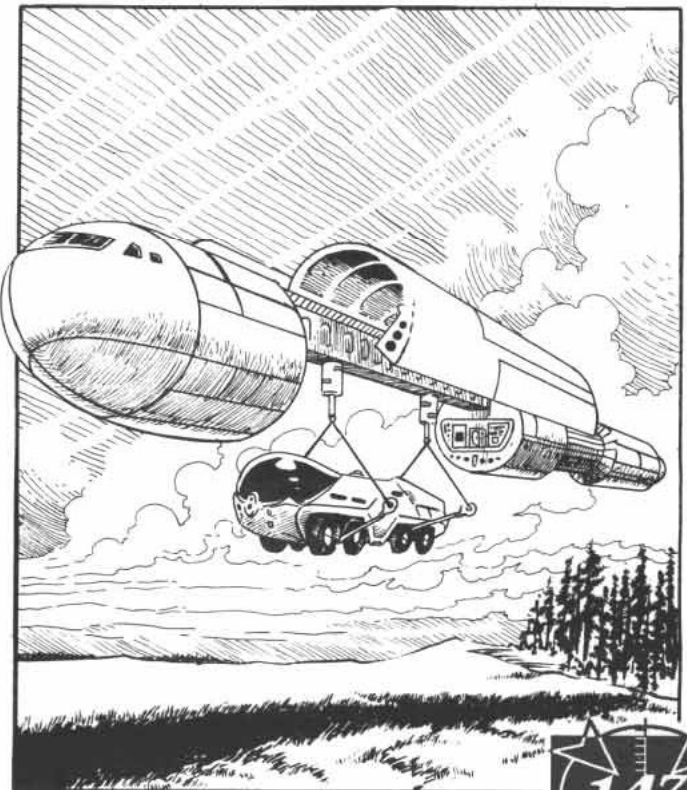
Volume: 406 m³
Mass: 439.2 tonnes (loaded), 427.97 (empty)
Price: MCr58.4
Crew: 4 (2xgunners, 1xelectronics, 1xMFD)
Passengers: None.

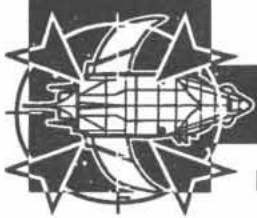
Features: Artificial gravity/G-Compensators, basic life support, 5.1 MW MHD turbine, turbine fuel (12 hours), 160.6 m³ reaction mass, 300,000 km Beam MFD (4 Diff Mod; non-Msl; 10 hexes; 2.95 MW, 1 Crew), 180,000-km ladar, 2xnormal workstations, 2xTL-11 150-Mj laser barbettes.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Qtrs	MFD-1H
2	Ant	Elec	LS-1H
3		Elec	ELS-1H
4		Power Plant	AG-(2h)
5-12		Fuel	PP-(2h)
13-20		LB	LB-1H
			All Others-(1h)

	Short	Medium	Long	Extreme
TL-11 Laser Barbette	10: ¹ /10-31	20: ¹ /5-17	40: ¹ /3-8	80:1-4





Cutter Modules

Passenger/Cargo Module

Passenger seats can be removed for additional cargo space (7 m³ ea.) if needed, although if total loaded module tonnage exceeds 284, the cutter's acceleration is reduced to 1G. In military service, roomy seats are replaced with adequate, and passenger capacity is doubled to 60. The passenger/cargo module requires 2.0716 MW from the cutter.

Volume: 406 m³

Mass: 311.59 tonnes (loaded), 133.59 (empty)

Price: MCr0.4

Crew: None.

Passengers: 30 in roomy seats (60 if adequate seats are fitted)

Features: Artificial gravity/G-compensators, basic life support, 178 m³ cargo, large cargo hatch

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Qtrs	LS-1H
2-9		Qtrs	ELS-1H
10-11	LCH	Cargo	AG-(2h)
12-20		Cargo/Passenger*	All Others-(1h)

* If passenger seats are carried, these hits are passenger hits; if cargo, these hits are cargo hits.

Survey Module

This module, in combination with a modular cutter, becomes an exploration and survey vessel. The AEMS and radio are designed to survey a world from near orbit, and the analysis lab is capable of performing preliminary chemical tests on soil, atmosphere, and mineral samples. The staterooms and the large cargo bay enable the module to carry supplies for an extended mission, and the neutrino sensor is for stellar surveys. The survey module carries its own power plant, which generates 12.7568 MW surplus to the module's own needs.

Volume: 406 m³

Mass: 354.06 tonnes (loaded), 270.06 (empty)

Price: MCr26.8

Crew: 7 (3xcutter crew, 3xscientist/lab technician, 1xelectronics)

Passengers: 4xsmall staterooms provided for the crew (including cutter crew)

Features: Extended life support, artificial gravity/G-compensators, laboratory, 20 MW TL-12 fusion power plant (with fuel for 1 year), TL-12 model ST computer, 3000-km radio, 1000 AU maser communicator, 2xnormal workstations, TL-12 densitometer, TL-12 neutrino sensor, TL-12 3000-km AEMS.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	Ant	Power Plant	Neut. Sen.-(2h)
2-3	Ant	Elec	Lab-1H
4-8	Ant	Hold	SSR-(2h)
9	AL	Qtrs	LS-1H
10-20		Qtrs	ELS-1H AG-(2h) PP-1H All Others-(1h)

STATION MODULES

While most of the modules are designed to be used while linked to the cutter, a fairly large number are designed to operate independently (and are merely carried to their final destination by the cutter). Station modules are intended to serve as part of a prefabricated base installation on a planetary surface, in planetary orbit, or in deep space, independent of the cutter. Station modules usually have self-erecting legs or other support structures which can be adjusted to allow for irregularities in the surface.

Stations can be configured to suit almost any purpose by careful selection of the station's constituent modules. Stations normally incorporate several habitation and storage modules (to shelter personnel and supplies), along with a number of more specialized modules such as portable laboratories, communications centers, medical facilities, and so on. Some modules are unpowered, and must be deployed in conjunction with others which can make up the energy deficit. Orbital and deep space stations usually incorporate additional structures such to link them together, and ground stations in hostile environment conditions do the same.

Communications/Command Module (Station)

This module was intended for use as a communications center for a ground, orbital, or deep space installation, or as a command and control center for small military operations. Quarters for up to 12 personnel are provided, and the module is self-powered (5.6558 MW surplus power). For military operations, additional staff personnel are assigned to assist in planning and administration.

Volume: 406 m³

Mass: 297.758 tonnes (loaded), 205.958 (empty)

Price: MCr8.3

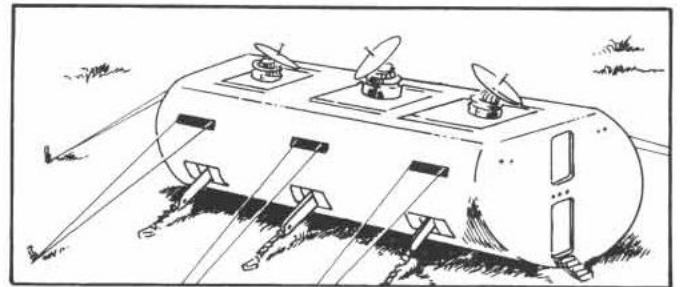
Crew: 3-7 (2xelectronics, 1xcommand, up to 4xmilitary staff)

Passengers: 6xsmall staterooms

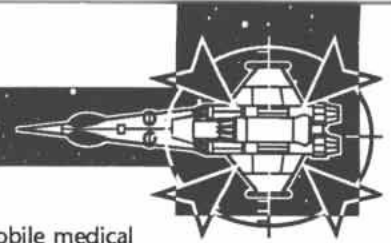
Features: 20 MW TL-12 fusion power plant (with fuel for one year), 6xsmall staterooms, 105.8 m³ storage and supplies, 300,000-km radio, 2x3000-km radios, 2x1000 AU maser communicators, 7xbridge workstations, (2xcommo, 5xfor command/staff personnel), 2xTL-12 model St computers

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Eng	SSR-(2h)
2-6	Ant	Elec	LS-1H
7-10	Ant	Hold	ELS-1H
11		Hold	AG-(2h)
12	AL	Qtrs	PP-1H
13-20		Qtrs	All Others-(1h)



Cutter Modules



Habitation Module (Station)

This module was designed to provide long-term shelter for personnel of a ground, orbital, or deep space station. No outside power is required (17.2528 MW surplus power).

Volume: 406 m³

Mass: 229.85 tonnes (loaded), 198.9 (empty)

Price: MCr2.9

Crew: None (electronics crew needed to operate communicator).

Passengers: Quarters for up to 24 (12xsmall staterooms).

Features: 12xsmall staterooms, 20 MW TL-12 fusion power plant (with fuel for 1 year), 31 m³ storage, 1000 AU maser communicator and 1xnormal workstation.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	Ant	Elec	SSR-(2h)
2		Power Plant	LS-1H
3-4		Hold	ELS-1H
5	AL	Qtrs	AG-(2h)
6-20		Qtrs	PP-1H All Others-(1h)

Medical Module (Station)

This module serves as a small mobile medical center for a ground, orbital, or deep space station. Quarters for two medical personnel are provided, as well as 3 small patient staterooms. No outside power is required (15.257 MW surplus power).

Volume: 406 m³

Mass: 314.156 tonnes (loaded), 284.056 (empty)

Price: MCr14.1

Crew: 2 medical

Passengers: Up to 6 patients in 3xsmall staterooms

Features: Extended life support, artificial gravity/G-compensators, 2xsickbays, 20 MW TL-12 fusion power plant (with fuel for one year), 3000-km radio, TL-12 model St computer.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Elec	SSR-(2h)
2		Eng	LS-1H
3-4		Hold	ELS-1H
5	AL	Qtrs	AG-(2h)
6-20		Qtrs	PP-1H Sickbay-1H All Others-(1h)

Lab Module (Station)

This module is a portable laboratory for use as part of a ground, orbital, or deep space station. Outside power is not required (15.257 MW surplus power), and quarters for the crew of four are provided.

Volume: 406 m³

Mass: 359.454 tonnes (loaded), 280.454 (empty)

Price: MCr14.2

Crew: 4 (3xscientists/lab technicians, 1xelectronics) in 2xsmall staterooms (double occupancy)

Passengers: None.

Features: 20 MW TL-12 fusion power plant (with fuel for one year), artificial gravity/G-compensators, extended life support, 2xlaboratories, 79 m³ storage and supplies, 1000 AU maser communicator, 1xnormal workstation, TL-12 model St computer.

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1		Power Plant	Lab-1H
2-4	AL	Qtrs	LS-1H
5	Ant	Elec	ELS-1H
6	AL	Hold	AG-(2h)
7-20		Hold	PP-1H All Others-(1h)

Support Module (Station)

This module provides maintenance and repair support for ground, orbital, or deep space stations. Quarters for 6 personnel (two each per electronics and machine shops) and power (4.7412 MW) must be supplied by other modules.

Volume: 406 m³

Mass: 437.344 tonnes (loaded), 414.244 (empty)

Price: MCr4.99

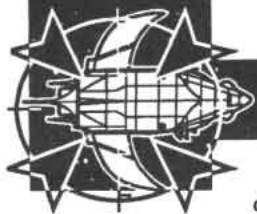
Crew: 6 (2 per shop) required, must be accommodated elsewhere

Passengers: None.

Features: Extended life support, artificial gravity/G-compensators, electronics shop, 2xmachine shops

DAMAGE TABLES

1D20	Surface Hits	Internal Explosions	Systems
1	AL	Qtrs	Mach Shop-1H
2-20		Hold	Elec Shop-1H LS-1H ELS-1H AG-(2h) All Others-(1h)

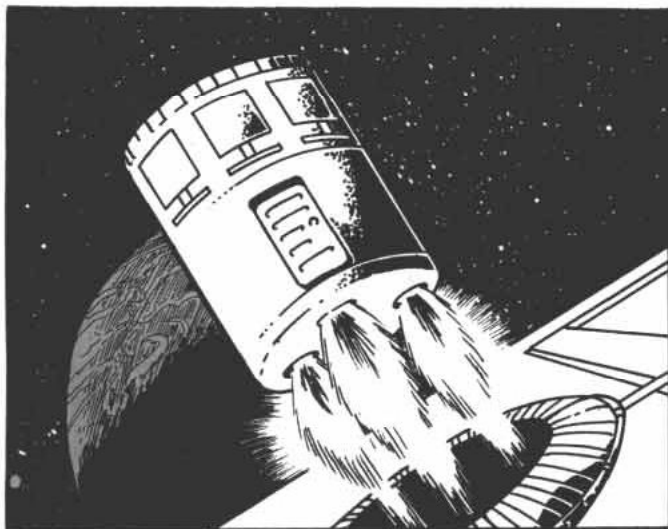


3-Ton Socket Liferaft

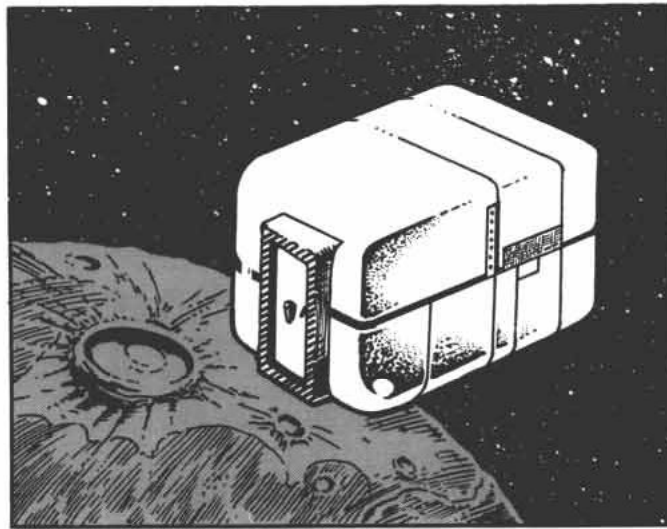
Liferafts have no maneuver drives; lifeboats do. Liferafts are built with simple, proven, reliable systems so that they can go without maintenance for years at a time, and do not roll for potential breakdowns. Liferafts are usually given a complete overhaul every five years (a process requiring one week in a class A or B starport and which costs 10% of their purchase price).

Lifeboats are subject to the normal maintenance and breakdown rules, except when they are acting as liferafts (floating without using their drives, with all passengers in low berths).

When abandoning ship in hostile territory, the flight computer can be set to activate the beacon only in response to friendly ID codes.



3-Ton Socket Liferaft



5-Ton Liferaft

General Data

Displacement: 3 tons Hull Armor: 10
 Length: 5.75 meters Volume: 42 m³
 Price: MCr0.425 Target Size: Mc
 Configuration: Box USL Tech Level: 12
 Mass (Loaded/Empty): 18.65/16.68

Engineering Data

Power Plant: 1 MW TL-12 rechargeable battery, 5 hours duration, 0.042 MW Solar Array.

Jump Performance: None.

G-Rating: None.

G-Turns: None.

Maint: 0

Electronics

Computer: 1xTL-12 Mod Flt Computer (0.04 MW)

Commo: 30,000-km Radio (1 hex; 1MW)

Avionics: None.

Sensors: None.

ECM/ECCM: None.

Controls: None.

Armament

Offensive: None.

Accommodations

Life Support: 1xemergency low berth (0.002 MW)

Crew: None.

Crew Accommodations: None.

Passenger Accommodations: 4 in emergency low berth

Cargo: 1.96 m³

Small Craft and Launch Facilities: None.

Air Locks: None; hatch provides access to interior.

Note

The 3-ton liferaft is designed to fit in a standard 3-ton, 42-kl turret socket. It has a small solid fuel thruster to kick it free of the socket, and a similar thruster to cancel that thrust a short time, giving it the vector of the original ship when released, but paralleling it a short distance away. The 3-ton liferaft carries four passengers in an emergency low berth (no life support, G-compensation, or artificial gravity), a small computer, and a 30,000-km radio beacon to facilitate location of the raft by rescuers. Liferafts have no propulsion, and drift in space until picked up, the flight computer monitoring the radio receiver for a coded signal to activate the beacon.

The liferaft carries a 1 MW battery and a 0.042 MW solar array. This array can power the computer and the low berths in the habitable zone. Outside the habitable zone, the computer shuts down and the solar array powers the low berths and trickle charges the battery. The battery can power the beacon for 5 hours, then it must wait until enough power builds up before it can do so again.

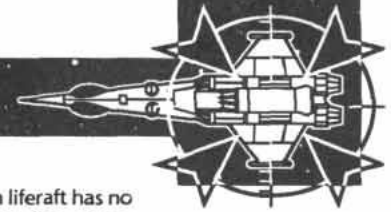
The liferaft has no air lock, so its hatch must be mated to a standard air lock or the whole thing taken into a cargo hold to disembark its passengers. Rescuers can board the craft without harming the passengers, so long as they don't open the low berth.

DAMAGE TABLES

Area	Surface Hits	Internal Explosions	Systems
1	1-10: Hatch	1-12: Qtrs, 13-20: Hold	All-(1h)
2-5	1-12: Solar Panels	Qtrs	
6-11, 14-15		Qtrs	
12		1-11: Qtrs, 12-20: Eng	
13		1-10: Qtrs, 11-20: Hold	
16-19	1-12: Ant	1-18: Eng, 19-20: Elec	
20		Eng	



5-Ton Lifteraft & 10-Ton Lifeboat



General Data

Displacement: 5 tons Hull Armor: 10
 Length: 4 meters Volume: 70 m³
 Price: MCr2.26 Target Size: Mc
 Configuration: Box SL Tech Level: 12
 Mass (Loaded/Empty): 60.43/60.43

Engineering Data

Power Plant: 20 MW TL-12 Fusion Power Plant, 290 years duration operating at 0.044 MW, 0.044 MW rechargeable battery, 1 hour duration.
 Jump Performance: None.
 G-Rating: None.
 G-Turns: None.
 Maint: 0

Electronics

Computer: 1xTL-12 Mod Flt Computer (0.04 MW)
 Commo: 1000 AU Radio (∞; 20 MW)
 Avionics: None.
 Sensors: None.
 ECM/ECCM: None.
 Controls: None.

Armament

Offensive: None.

Accommodations

Life Support: 2xemergency low berths (0.002 MW ea.)
 Crew: None.
 Crew Accommodations: None.
 Passenger Accommodations: 8 in emergency low berths
 Cargo: None.
 Small Craft and Launch Facilities: None.
 Air Locks: None; hatch provides access to interior.

Notes

Like the 3-ton socket liferaft, the 5-ton liferaft has no propulsion, just a small charge to kick it free of the spacecraft and a counteracting thrust a few moments later. Lifterafts have no propulsion, and drift in space until picked up, following the same vector as their parent ship. The 5-ton liferaft carries eight passengers in two emergency low berths (no life support, G-compensation, or artificial gravity), a small computer, and a 1000 AU radio beacon to facilitate location of the raft by rescuers.

The raft's power plant operates at a low level, providing just enough power to operate the low berths and the computer. The computer monitors the radio receiver (receiving takes negligible energy), and awaits a signal from a rescue ship. Upon receipt of this signal, the computer brings the power plant to full level, and activates the beacon. The beacon broadcasts for one hour at 20 MW, then shuts down and activates the computer, which continues to monitor the radio. While the radio is being operated, the low berth and the flight computer are powered by the battery, which is then recharged after the radio beacon shuts down.

The 5-ton liferaft's antenna is a special one-time inflatable array, and cannot be readily folded up after it has been deployed. The antenna is deployed after the raft has stabilized its vector (after the second thruster has cancelled the ejection thrust).

RCES vessels have encountered liferafts with living passengers dating from the pre-Collapse period, having spent more than 70 years in low berths.

DAMAGE TABLES

Area	Surface Hits	Internal Explosions	Systems
1-10, 12-16	Ant	Qtrs	PP-H
11	1-6 Hatch	1-6: Elec, 7-14: Hold, 15-20: Qtrs	All Others-(1h)
17		Qtrs	
18		1-17: Eng, 18-20: Hold	
19-20		Eng	

General Data

Displacement: 10 tons Hull Armor: 14
 Length: 14 meters Volume: 140 m³
 Price: MCr10.62 Target Size: VS
 Configuration: Cylinder SL Tech Level: 12
 Mass (Loaded/Empty): 90.34/88.85

Engineering Data

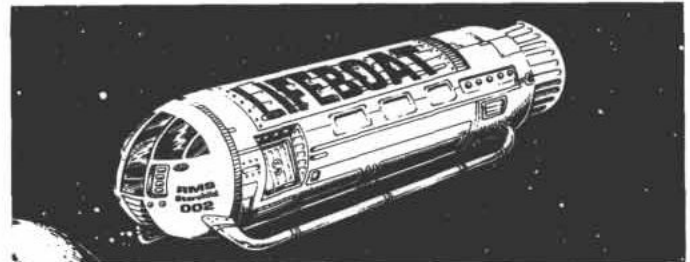
Power Plant: 20 MW TL-12 Fusion power plant, 1 year duration.
 Jump Performance: None
 G-Rating: 1 (5 MW/G), Contra-Grav Lifters: (1 MW)
 G-Turns: 14, 0.625 m³ of fuel each.
 Maint: 3

Electronics

Computer: 2xTL-12 Mod St Computer (0.8 MW ea.)
 Commo: 180,000-km Radio (6 hexes; 7 MW)
 Avionics: TL-10+ avionics
 Sensors: Passive EMS 30,000-km (1 hex, 0.03 MW), Active EMS 300-km (0 hexes; use extreme range for task difficulty in same hex; 5MW)
 ECM/ECCM: None.

DAMAGE TABLES

Area	Surface Hits	Internal Explosions	Systems
1-3	Ant	Elec	LS-1H
4-5	Ant	1-5: Elec, 6-10: Hold, 11-20: Qtrs	ELS-(2h) PP-1H
6-7	1-2: AL	Qtrs	All Others-(1h)
8-9, 11, 14-16	Qtrs		
10	Ant	Qtrs	
12-13	1-11 Ant	Qtrs	
17		1-5: Hold, 6-20: Qtrs	
18		1-10: Eng, 11-20: hold	
19		1-9: Eng, 10-20: hold	
20		Eng	



Controls: Flight deck with 1xnormal workstation

Armament

Offensive: None.

Accommodations

Life Support: 3xemergency low berths (0.002 MW ea.).
 Crew: None, provision for pilot if landing is required.
 Crew Accommodations: 1xworkstation
 Passenger Accommodations: 12 in emergency low berths
 Cargo: 0.882 m³
 Small Craft and Launch Facilities: None.
 Air Locks: 1

Notes

This vessel is a lifeboat modified from the hull of the 10-ton launch. The vessel contains no G compensators, no artificial gravity, and no life support, and is not intended for any use other than as a lifeboat. The workstation provided is for use should the situation demand a landing, the on-board computers are programmed to carry out a series of standard maneuvers, primarily designed to put the vessel in a stable orbit and broadcast distress signals. The cargo space consists of a rescue equipment locker designed to serve the 12 potential passengers likely to be aboard.





Wildbat Fighter/Foxbat Pathfinder

General Data

Displacement: 16 tons
 Length: 15.2 meters
 Price: MCr15.5
 Configuration: Cylinder SL
 Mass (Loaded/Empty): 246.98/238.58

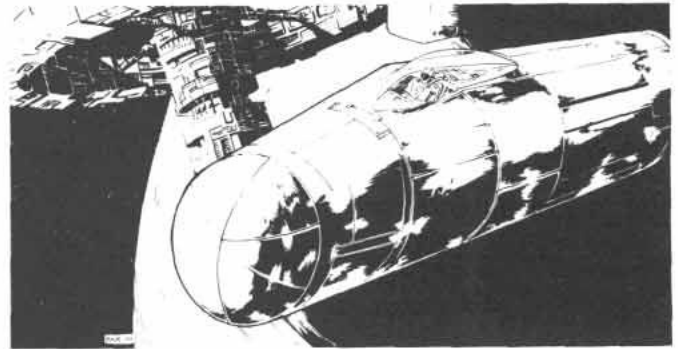
Hull Armor: 30
 Volume: 224 m³
 Target Size: VS
 Tech Level: 12

Engineering Data

Power Plant: 36.85 MW TL-12 Fusion Power Plant, 7 days duration.
 Jump Performance: None.
 G-Rating: 3 (8 MW/G), Contra-Grav Lifters (1.6 MW)
 G-Turns: 60, 1 m³ of fuel each.
 Maint: 9

Electronics

Computer: 2xTL-12 Mod St Computer (0.4 MW ea.)
 Commo: 1000 AU Maser, (∞; 0.6MW), 30,000-km Radio (1 hex; 1MW)
 Avionics: TL-10+ avionics, TL-12 terrain-following avionics
 Sensors: Passive EMS 90,000-km (3 hexes, 0.1MW), Active EMS 300-km (0 hexes; use extreme range for task difficulty in same hex; 5MW)
 ECM/ECCM: EM masking package (0.224 MW)
 Controls: Cockpit with 1xnormal workstation



Armament

Offensive: 1xTL-12 120-Mj laser turret, (Loc: 1, Arcs: 1,2; 3.3 MW, crew = pilot), fuselage hardpoint (plumbed), max capacity 24,618 kg.

	Short	Medium	Long	Extreme
TL-12 120-Mj Laser	4:1/9-27	8:1/9-27	16:1/6-19	32:1/3-9

Accommodations

Life Support: Basic (0.0014 MW, crew workstations and cargo only), Gravitic Compensators (3G, 0.07 MW, crew workstations and cargo only).
 Crew: 1xpilot/gunner plus optional crewmember in turret.
 Crew Accommodations: 1xcockpit workstation, plus workstation in turret.
 Passenger Accommodations: None.
 Cargo: 0.1 m³

Small Craft and Launch Facilities: None.

Air Locks: None; hatch provides access to crew compartment.

Notes

Wildbats are capable of refueling while in flight, either from other Wildbats, or from other vessels (a tanker has been specially designed for this purpose).

Basic life support and AG compensation provided only for the crew compartment workstation and the turret workstation, although the turret workstation is normally occupied only when the socket sensor pod is fitted. Wildbat pilots normally wear vac suits, and most bring personal reentry kits and other equipment (stowed in the cargo cabinet adjacent to the cockpit). No additional provision is made for personal equipment for the second crewmember, and they must split the space available with the pilot.

When equipped with the turret sensor package (noted in the "Socket Sensor Package" sidebar at left) instead of a laser turret, this craft is known as the Foxbat Pathfinder.

The fuselage hardpoint is provided for use in tactical support missions to a planetary surface. If loaded to more than 820 kg, this will reduce the craft to 1G acceleration unless fuel tonnage is likewise reduced, with appropriate deductions from the fighter's operating time. For example, the Wildbat could carry 2000 kg on the fuselage hardpoint without a G penalty by reducing its total fuel by 1180 kg (16.86 m³), a loss of 17 G-turns.

Other Turret Sockets

Because the Wildbat only provides 3.3 MW to the turret socket, socket lasers that normally draw greater power than this have their performance reduced when fitted to the Wildbat. Wildbat performance is shown below. Note that some lasers are limited to less than this by their focal arrays and leave part of the 3.3 MW power supply unused. The Mj listed under Description is the power for which the lasers are designed, however all socket lasers installed in the Wildbat function at no higher than 120-Mj. The value given under MW below shows the true power value at which they operate when installed in the Wildbat.

Note that the TL-13 150-Mj turret will cause the Wildbat to become overloaded, and reduce its acceleration to 1G.

TL	Description	MW	MCr	Mass	Short	Medium	Long	Extreme
10	60-Mj laser turret	1.7	1.56	55	1:1/6-19	2:1/6-19	4:1/3-9	8:1/2-5
11	80-Mj laser turret	2.2	2.08	59	2:1/7-22	4:1/7-22	8:1/6-19	16:1/3-10
12	120-Mj laser turret	3.3	0.94	65	4:1/9-27	8:1/9-27	16:1/6-19	32:1/3-9
13	150-Mj laser turret	3.3	0.72	68	1:1/9-27	2:1/9-27	4:1/9-27	8:1/9-27
13	106-Mj laser turret	2.9	1.45	59	10:1/8-26	20:1/6-20	40:1/3-10	80:1/2-5
14	150-Mj laser turret	3.3	0.72	63	2:1/9-27	4:1/9-27	8:1/9-27	16:1/9-27
15	150-Mj laser turret	3.3	0.86	57	10:1/9-27	20:1/9-27	40:1/9-27	80:1/9-27

Socket Sensor Package

The socket sensor package was designed to fit into a standard 3-ton socket, and provide ships with an improved sensor without overburdening their power-generation capabilities. Sensor packages such as this are used in Foxbat Pathfinders and are occasionally loaned to merchant vessels operating in cooperation with the RCES, RCN, or planetary governments.

The package combines both active and passive EMS antenna arrays, to conserve surface area, and contains a 240,000-km active EMS unit, a 60,000-km TL-12 passive EMS unit, a 24 MW fusion power plant with 1 year of fuel, and a workstation for the electronics technician. Because they share an antenna, only one EMS unit can be used at a time. This module, although it fits in a standard 3-ton socket, requires 20 m² of surface area because of the diameter of the PEMS antenna.

Sensors: Passive EMS 60,000 km (2 hexes, 0.06 MW), Active EMS 240,000 km (8 hexes, 24 MW).
 TL: 12; Mass: 59.352 tonnes; Volume: 42 kl;
 Price: MCr13.3

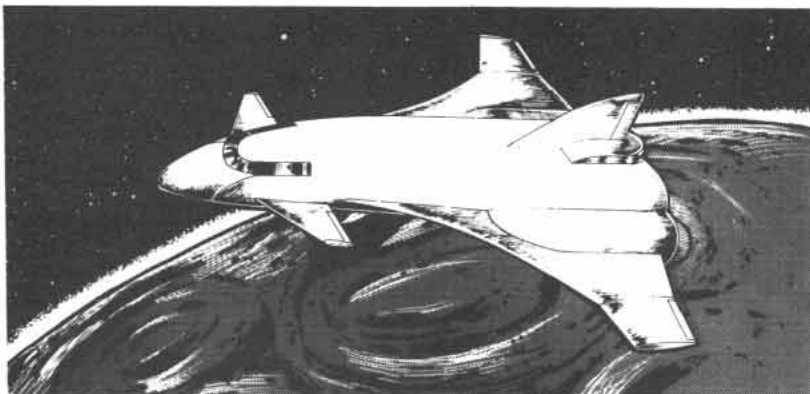
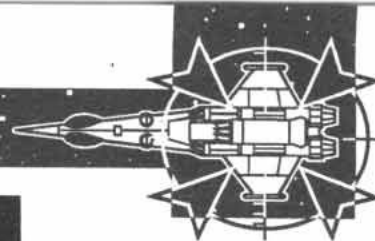
DAMAGE TABLES

Area	Surface Hits	Internal Explosions	Systems
1, 4-5		LT	LS-1H
2-3	1-5: Ant	1-10: LT, 11-20: Elec	ELS-1H
6	1-3 EMMR	Elec	PP-1H
7-9, 12-15		Hold	LT-1H
10	1: Hatch	Qtrs	All Others-(1h)
11	FHP*	Hold	
16-19	1-5: Ant	1-5: Eng, 6-10: Elec, 11-20: Hold	
20		Eng	

* When no ordnance is carried, this counts as an unoccupied surface hit.



Fury-type Assault Lander



General Data

Displacement: 7 tons **Hull Armor:** 21
Length: 18.6 meters **Volume:** 98 m³
Price: MCr2.2 **Target Size:** Mc
Configuration: Needle SL **Tech Level:** 12
Mass (Loaded/Empty): 70.37/69.57

Engineering Data

Power Plant: 9 MW TL-12 Fusion Power Plant, 1 month duration.
Jump Performance: None.
G-Rating: 2 (3.5 MW/G), Contra-Grav Lifters: (0.7 MW)
G-Turns: 13, 0.4375 m³ of fuel each.
Maint: 6

Electronics

Computer: 2xTL-12 Mod Flt Computers (0.04 MW ea.)
Commo: 1000 AU Maser, (∞; 0.6MW), 300-km Radio (0 hexes, use extreme range for task difficulty in same hex; 0.01 MW).
Avionics: TL-10+ avionics, TL-12 terrain following avionics.
Sensors: TL-12 Passive EMS 3000-km (0 hexes, use long range for task difficulty in same hex; 0.01 MW)
ECM/ECCM: EM Masking (0.098 MW)
Controls: Flight deck with 2xnormal workstations (pilot and electronics crewman), 1xopen crewstation (crew chief/gunner)

Armament

Offensive: 5mm rotary gun in remote turret (planetary combat only), 1xplumbed FHP (capacity 7037 kg), 2xdry FHPs (7037 kg ea.).

Accommodations

Life Support: Basic (0.007 MW), Gravitic Compensators (0.35 MW).
Crew: 1xPilot/commander, 1xElectronics Tech, 1xCrew Chief/Gunner.
Crew Accommodations: 2xnormal workstations (pilot and electronics crewman), 1xopen crewstation (crew chief/gunner)
Passenger Accommodations: 14xadequate seats (removable to create cargo space)
Cargo: 3.5 m³ per seat removed.

Small Craft and Launch Facilities: None.
Air Locks: 1

Notes

This craft (also called the 7-ton assault lander) was designed to carry up to 14 fully equipped soldiers (or equivalent cargo) to/from a planetary surface, and provide fire support for them during landing and retrieval. Troops debark through cargo hatch in the rear directly from passenger compartment. All 14 passengers can embark/debark in 2-3 turns (10-15 seconds), even when wearing heavy battle dress.

Because this craft only makes short trips between planetary orbit and the planet's surface, it is equipped with flight computers instead of fully capable models. No AEMS system is installed.

The crew chief fires the remote 5mm rotary gun (equipped with a TL-10 EMS RF) from a crewstation inside the flight deck. The ordnance carried on the fuselage hardpoints is fired/dropped from the pilot or electronics position.

The three fuselage hardpoints are capable of carrying a total of 21,111 kg (combined ordnance and racks). Fuel pods to extend range may be added only to the center hardpoint (the only plumbed hardpoint 7037-kg capacity). Ordnance racks, ECM/ECCM pods, or other specialty pods may be hung from all three.

Life support is provided only to occupied spaces, thus no maintenance may be conducted while the craft is being operated.

5mm Rotary Gun, TL-8

Round	ROF	Dam Val	Pen Rtg	Bulk	Magazine	— Recoil —		Short Range
						SS	Burst	
5x50mm Ball	5/50	3	1-Nil	7	5000C	—	—	150
5x50mm DS	5/50	3	1-2-Nil	7	5000C	—	—	180
5x50mm HE	5/50	3	Nil	7	5000C	—	—	130
5x50mm HEAP	5/50	3	2-2-2	7	5000C	—	—	130
5x50mm Tranq	5/50	-1*	Nil	7	5000C	—	—	30

*1D6-1 points of damage plustranq effect on TNE, page 350.

DAMAGE TABLES

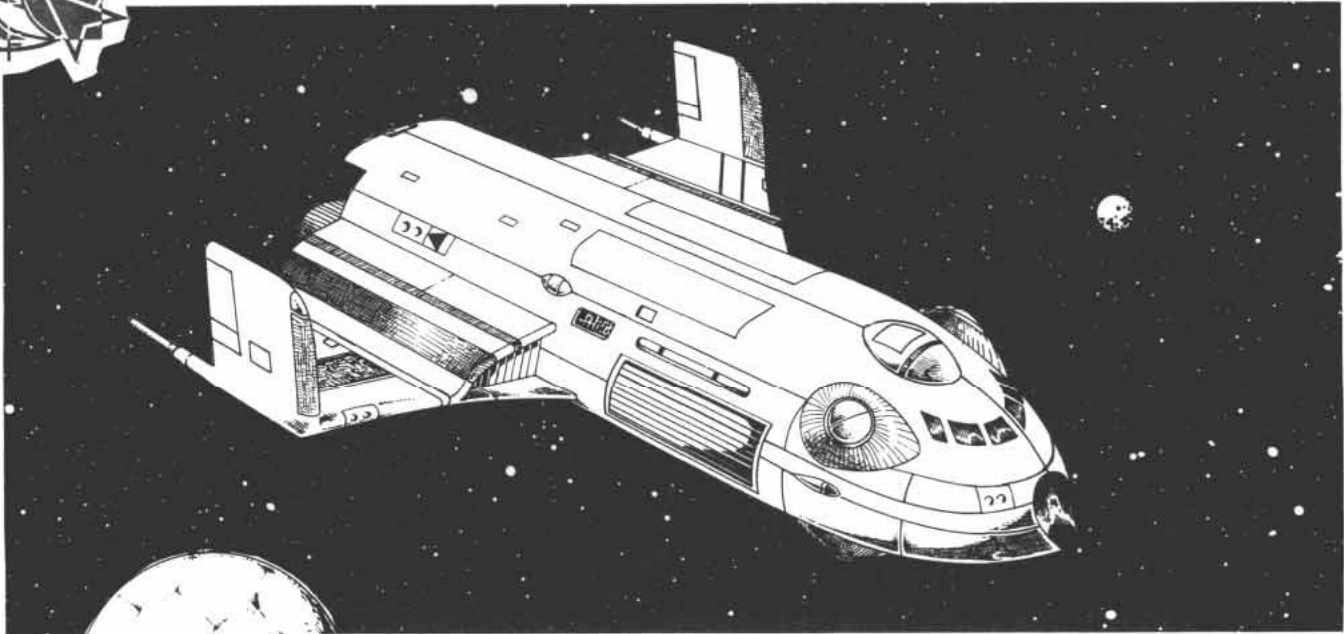
Area	Surface Hits	Internal Explosions	Systems
1	1-2: EMMR	20 Elec	LS-1H
2	1-2: Ant	20 Elec	ELS-(3h)
3	1-2: Ant	20 Elec	PP-(4h)
4	1-4: AL	14: Elec, 6: Cargo/Passengers*	All Others-(1h)
5		14: Elec, 6: Cargo/Passengers*	
6		15: Qtrs, 5: Cargo/Passengers*	
7		15: Qtrs, 5: Cargo/Passengers*	
8		20 Cargo/Passengers*	
9		20 Cargo/Passengers*	
10		20 Cargo/Passengers*	
11		20 Cargo/Passengers*	
12		20 Cargo/Passengers*	
13		20 Cargo/Passengers*	
14		20 Cargo/Passengers*	
15		20 Cargo/Passengers*	
16		3: Remote Turret, 17: Hold	
17		3: Remote Turret, 17: Hold	
18	1-13: CH	5: Eng, 15: Hold	
19	1-13: CH	5: Eng, 15: Hold	
20		20 Eng	

*When the seats are installed and passengers are carried, this location counts as Passengers for hits. When the seats are removed and cargo is carried, this location counts as Cargo.





Mary Ellen Carter Armed Merchant



General Data

Displacement: 400 tons
Length: 44 meters
Price: MCr217.6
Configuration: Cylinder AF
Mass (Loaded/Empty): 4333.78/3828.99
Hull Armor: 10
Volume: 5600 m³
Target Size: S
Tech Level: 12

Engineering Data

Power Plant: 340 MW Fusion Power Plant (48.6 MW/hit), 1 year duration (1.782 MW excess power)
Jump Performance: 2 (840 m³ fuel)
G-Rating: 1G (200 MW/G), Contra-Grav lifters (40 MW)
G-Turns: 60 (93.6 using jump fuel), 25 m³ of fuel each
Maint: 201

Electronics

Computer: 3xTL-12 Mod St Computer (0.4 MW ea.)
Commo: 300,000-km radio (10 hexes; 10 MW), 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: Passive EMS folding array 180,000-km (6 hexes; 0.25 MW), Active EMS 300,000-km (10 hexes; 27.5 MW)
Controls: Bridge with 9xworkstation, plus 4 other workstations

Armament

Offensive: 4xTL-12 120-Mj Laser Turret (Loc: 2,3,4,5; Arcs: 1,2,3; 3.3 MW ea.; 1 Crew ea.)
Master Fire Directors: 2xTL-12 MFD (4 Diff Mod; No Msl; 4 hexes; 1.73 MW; 1 Crew ea.)

	Short	Medium	Long	Extreme
TL-12 120-Mj Las Trt	4: 1/9-27	8: 1/9-27	16: 1/6-19	32: 1/3-9

Accommodations

Life Support: Extended (1.12 MW), Gravitic Compensators (3G; 28 MW)
Crew: 32 (2xManeuver, 1xElectronics, 4xEngineering, 1xMaintenance, 2xFlight Crew, 6xGunnery, 4xCommand, 12xShip's Troops).
Crew Accommodations: 22xSmall Stateroom (0.0005 MW ea.)
Passenger Accommodations: None (space for 11 additional personnel)
Cargo: 257 m³, two large cargo hatches
Small Craft and Launch Facilities: 10-ton Launch with internal hangar (Minimal), and one launch port.
Air Locks: 4

Notes

Mary Ellen Carter is one of many pre-existing starships that have been modified to perform new missions in the New Era. She was originally a standard subsidized merchant ("Fat Trader") given increased performance, sensors, and armament. The ship itself displaces 400 tons with an internal small craft, unlike the original which carried an external craft.

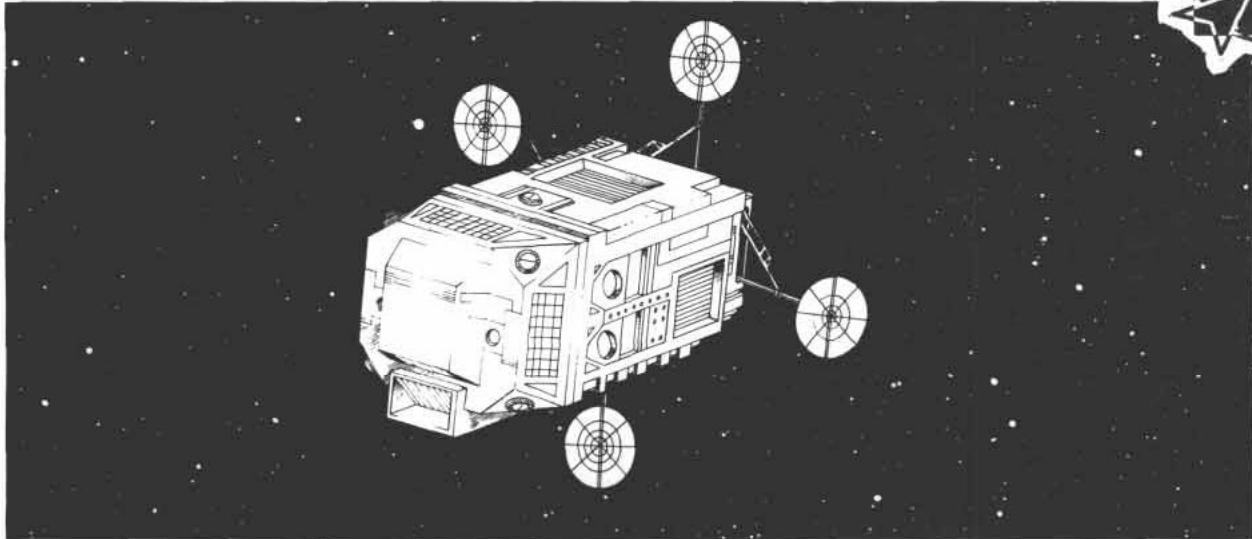
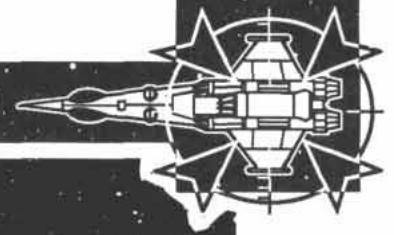
Mary Ellen Carter is the sole survivor of three such Fat Traders modified to serve the Dawn League as "exploration cruisers" in the period following the loss of the 12 original trading scouts. Like the scouts, the exploration cruisers were hasty conversions made from ships that were on hand, but this time the emphasis was on armament and survivability. As two of this type, *Lady Elise* and *Taylor the Bruce*, have already been lost or listed as missing, this type has fallen into disfavor. No further ships of this type are planned.

Fuel purification machinery (12.36 MW), 6.82 hours to refine 2340 m³.

DAMAGE TABLES				
Area (1D20)	Surface Hits	Internal Explosion	Systems	
1	Ant	Elec	JD-5H	AEMS-(2h)
2	Ant	1-3: TS, 4-20: Qtrs	PP-7H	PEMS Ant-1H
3	Ant	1-3: TS, 4-20: Qtrs	CG-1H	FPP-17H
4-5	1: AL, 2-9: Ant	1-3: TS, 4-19: Qtrs, 20: Hold	AG-1H	ELS-1H
6-9, 11-13		Hold	LT-1H	MFD-(3h)
10	Ant	Hold	LS-2H	All Others-(1h)
14	1-9: LP	3 Eng, 17 Hold	Hangar-1H	
15		1-10 Eng, 11-20 Hold	LBth-(1h)	
16-17	1-7: CH	1-10 Eng, 11-20 Hold	MD-(4h)	
18-19	1-10: Ant	Eng	SSR-(2h)	
20		Eng		



Hiver Transport



General Data

Displacement: 1000 tons
Length: 37.5 meters
Price: MCr318.92
Configuration: Box SL
Mass (Loaded/Empty): 9971.00/4640.10
Hull Armor: 31
Volume: 14,000 m³
Target Size: M
Tech Level: 14

Armament

Offensive: 4×TL-14 300-Mj Laser Barbettes (Loc: 2,3,4,5; Arcs: 1,2,3; 8.3 MW ea.; 1 Crew ea.)

	Short	Medium	Long	Extreme
300-Mj Laser Barbette	10: 1/14-43	20: 1/14-43	40: 1/8-26	80: 1/4-13

Engineering Data

Power Plant: 756 MW TL-14 Fusion Power Plant (95 MW/hit), 1 year duration (1.205 MW excess power)
Jump Performance: 2 (2100 m³ for Jump-2, 1050 m³ for Jump-1)
G-Rating: 1G (500 MW/G), Contra-Grav lifters (100 MW)
G-Turns: 44 (77.6 using jump fuel), 62.5 m³ fuel each
Fuel Tankage: 4850 m³ (346.4 tons), plus 75.6 m³ (5.4 tons) reserved for power plant
Maint: 353

Defensive: 1×TL-14 Nuclear Damper Barbette (Loc: 10; +1 Diff Mod per CV+4; 6 MW; 1 crew)

Master Fire Directors: 1×TL-14 Beam MFD (5 Diff Mods; No Msl; 10 hexes; 1.92 MW; 1 Crew)

Accommodations

Life Support: Extended (2.8 MW), Grav Compensators (5G; 70 MW)
Crew: 23 (2×Maneuver, 1×Electronics, 6×Gunnery, 6×Engineering, 1×Maintenance, 3×Command, 3×Flight Crew, 1×Medic)
Crew Accommodations: 23×small staterooms (0.0005 MW ea.), single-occupancy
Passenger Accommodations: 7×small staterooms (0.0005 MW ea.), single-occupancy
Cargo: 4180 m³ with 12 large cargo hatches
Small Craft and Launch Facilities: Docking ring and launch port for 100-ton shuttle
Air Locks: 10

Electronics

Computer: 2×TL-14 Mod Fb Computers (0.5 MW ea.)
Commo: TL-14 300,000-km radio (10 hexes, 10 MW), TL-14 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: TL-14 Passive EMS folding array 150,000-km (5 hexes; 0.15 MW), TL-14 Active EMS 60,000-km (2 hexes; 7 MW)
ECM/ECCM: EM masking package (14 MW)
Controls: Bridge with 7×bridge workstations, plus 6 other workstations

Notes

The Hiver transport is the most commonly seen Hiver vessel in Coalition Space, as it is these vessels that constitute the bulk of the Hiver technical assistance convoys that provide high-technology goods (such as TL-13 laser focal arrays and chemical laser cartridges, gauss receivers, batteries, etc.) to the fledgling industries of the Coalition. Rare Hiver transports will actually venture into the Wilds to spinward of the RC borders, but usually only on special recovery missions of interest to the Hivers themselves.

These vessels are armed for self-defense, but require convoy escort in other than secure areas. If these transports are damaged, they can be transported for repair by the Hiver tender (see page 152). The docking ring fitted to these transports does not allow any sort of repair or overhaul for the Hiver 100-ton shuttles; this must also be conducted by the Hiver tenders which are spaced out along the convoy routes in temporary staging areas between the Coalition and the Hiver Federation.

Fuel scoops (400 tons per hour) and fuel purification plant (6 MW), 24.45 hours to refine 4850 m³ (346.4 tons).



Area (TD20)	Surface Hits	DAMAGE TABLES		Systems
		Internal Explosion		
1	1-8: Ant	1-12: Elec, 13-14: Hold, 15-20: Qtrs		JD-11H
2-3	1-2: Ant	1-3: LB, 4-11: Qtrs, 12-20: Hold		PP-8H
4-5	1-2: Ant	1-3: LB, 4-10: Qtrs 11-20: Hold		MD-1H
6-7	1: AL	Hold		CG-2H
8	LP	Hold		FPP-6H
9		Hold		EMM-2H
10	1-6: CH	1-2: DB, 2-20: Hold		EMMR-(14h)
11	1-3: LP, 4-9: CH	Hold		MFD-(4h)
12-14	1-4: CH	Hold		Sickbay-1H
15	1-5: CH	Hold		SSR-(2h)
16-17	1-4: EMMR	1-5: Eng, 6-20: Hold		LS-5H
18-19	1-4: EMMR	1-4: Eng, 5-20: Hold		ELS-3H
20		Eng		AG-3H
				LB-2H
				DB-1H
				All Others-(1h)



Hiver Tender

General Data

Displacement: 4800/5000 tons
Length: 61.75 meters
Price: MCr1578.69
Configuration: Box SL
Mass (Loaded/Empty): 37,549.00/30,828.03
Hull Armor: 31
Volume: 67,200/70,000 m³
Target Size: M
Tech Level: 14

Engineering Data

Power Plant: 6000 MW TL-14 Fusion Power Plant (100 MW/hit), 1 year duration (409.2365 MW excess power)
Jump Performance: 3 (14,000 m³ for Jump-3, 9333 m³ for Jump-2, 4667 m³ for Jump-1)
G-Rating: 2G (2500 MW/G), no Contra-Grav lifters
G-Turns: 84 (128.8 using jump fuel), 312.5 m³ fuel each
Fuel Tankage: 40,250 m³ (2875 tons), plus 600 m³ (42.86 tons) reserved for power plant
Maint: 1387

Electronics

Computer: 1xTL-14 Mod Fb Computer (1 MW), 2xTL-14 Mod St Computers (0.5 MW ea)
Commo: TL-14 300,000-km radio (10 hexes, 10 MW), TL-14 1000 AU maser (∞; 0.6 MW)
Avionics: TL-10+ Avionics
Sensors: TL-14 Passive EMS fixed array 150,000-km (5 hexes; 0.15 MW), TL-14 Active EMS 300,000-km (10 hexes; 15 MW)
ECM/ECCM: EM masking package (67.2 MW)
Controls: Bridge with 22xbridge workstations, plus 50 other workstations

Armament

Offensive: 2xTL-14 300-Mj Laser Barbettes (Loc: 2,3; Arcs: 1,2,3; 8.3 MW ea.; 1 Crew ea.), 6xTL-14 150-Mj Laser Turret (Loc: 10; Arcs: 2,3,4; 4.2 MW ea.; 1 Crew ea.), 2xMissile Barbettes (Loc: 2,3; 5 ready MsIs; 0.15 MW ea.; 1 Crew ea.) (Total of 10 ready MsIs)

	Short	Medium	Long	Extreme
150-Mj Laser Turret	2: 1/10-31	4: 1/10-31	8: 1/10-31	16: 1/10-31
300-Mj Laser Barbette	10: 1/10-43	20: 1/14-43	40: 1/8-26	80: 1/4-13

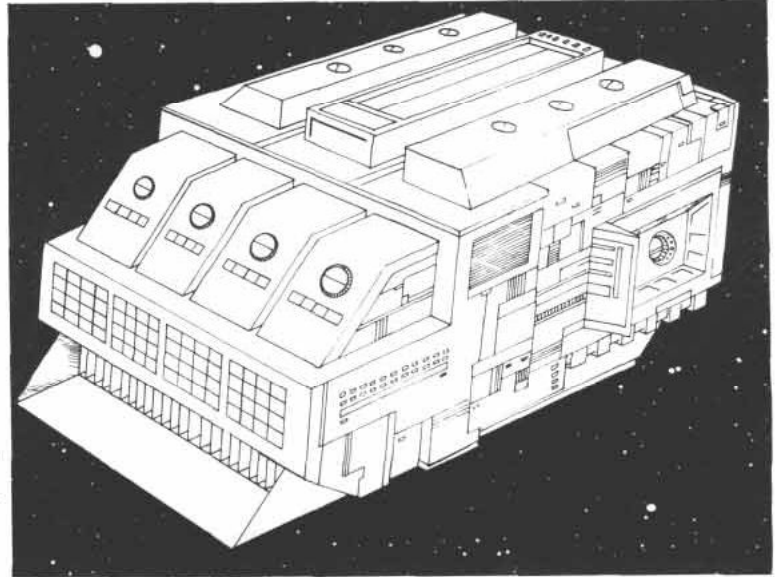
Defensive: 1xTL-14 Nuclear Damper Barbette (Loc: 11; +1 Diff Mod per CV+4; 6 MW; 1 crew)

Master Fire Directors: 1xTL-14 Missile/Beam MFD (5 Diff Mods; Msl 10 hexes Maser; 10 hexes; 1.92 MW; 1 Crew)

Accommodations

Life Support: Extended (14 MW), Grav Compensators (5G; 336 MW)
Crew: 130 (2xManeuver, 1xElectronics, 12xGunners, 50xEngineering, 20xMaintenance, 18xCommand, 13xFlight Crew, 12xShip's Troops, 1xSteward, 1xMedic)

Crew Accommodations: 75xsmall staterooms (0.0005 MW ea.), 20 single-occupancy, 55 double-occupancy



Passenger Accommodations: None
Cargo: 2176 m³ with 6 large cargo hatches
Small Craft and Launch Facilities: Minimal hangar for 4x1-ton work pods with launch port, spacious hangar for 100-ton shuttle with launch port sufficient for 200-ton craft, streamlined external grapple for 200-ton craft, unstreamlined external grapple for 1000-ton craft
Air Locks: 48

Notes

The Hiver tender is used to support Hiver lines of communication between the Hiver Federation and the Reformation Coalition. The presence of a tender in a system constitutes a Hiver staging area, as seen marked on RC subsector maps (e.g., Tuer, 1636/Oriflamme/Old Expanses). This allows the Hivers to vary their avenues of approach into certain areas, and also to forego the expense of establishing permanent bases.

The Hiver tender carries extra maintenance personnel to support repairs on vessels alongside. It has a grapple with which to hold a 1000-ton vessel. This is typically only used when such a vessel is laying alongside for servicing; the tender can also carry the attached vessel, but at reduced performance of Jump-2 and 1G maneuver.

The shuttle hangar is based on a 100-ton vessel and can serve as a spacious hangar for vessels of that size and smaller. However, its doors are large enough to fit a 200-ton vessel, and the hangar can serve as a minimal repair bay for such vessels.

The tender is fitted to carry a 200-ton Hiver utility vessel (HUV—see page 153) in a streamlined external grapple, allowing the HUV to be carried even during fuel skimming. The tender's jump and maneuver drives are scaled to allow the above performance while the HUV is attached, but as the HUV is fully capable of maneuver, jump, and fuel skimming on its own, this is usually not attempted. Note that when the HUV is attached, the tender's electromagnetic masking benefits are lost, as the HUV has no EMM package. The tender may enter gas giant atmospheres to refuel, but may not land on planetary surfaces as it has no CG lifters.

This vessel is clearly intended for use only in areas which have been secured by naval sweeps. For example, its self-defense capability is severely limited by its possession of only one MFD.

Fuel scoops (1920 tons per hour) and fuel purification plant (70 MW), 17.79 hours to refine 41,500 m³ (2964 tons), but only six hours to refine 14,000 m³ jump fuel.

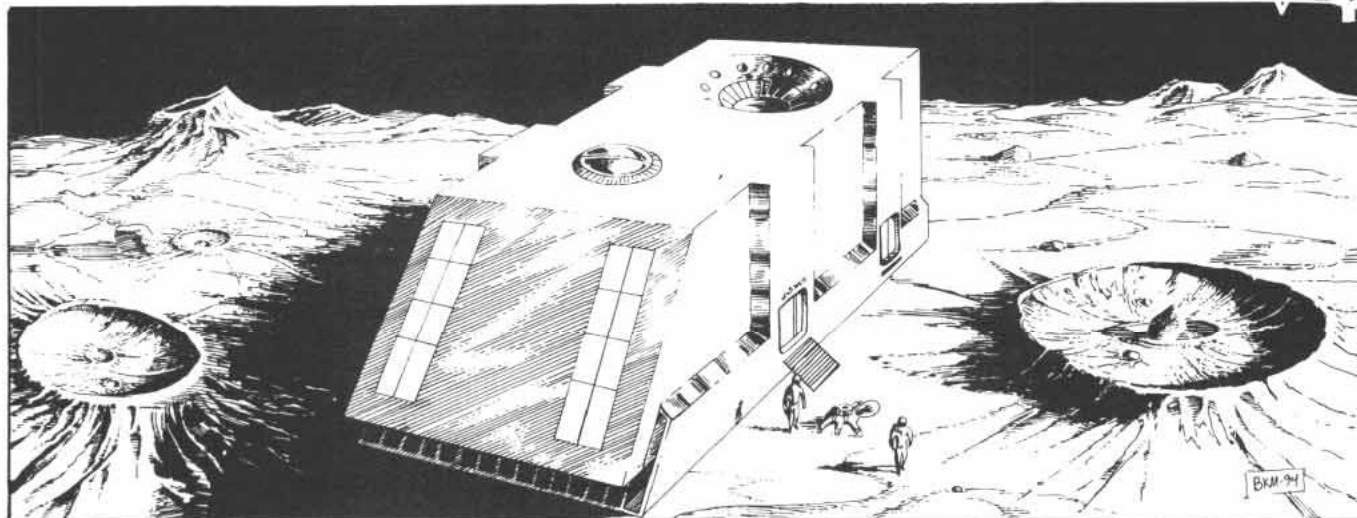
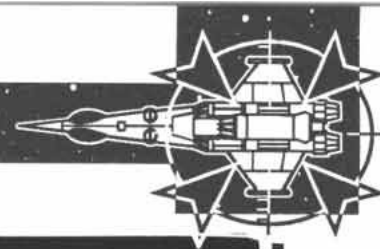
DAMAGE TABLES

Area (1D20)	Surface Hits	Internal Explosions	Systems
1	1-6: Ant	1-10: Elec, 11-20: Qtrs	JD-70H LB-2H
2-3	1: AL	1: LB, 2: MB, 3-8: Qtrs, 9-20 Hold	PP-60H MB-1H
4-5, 13		Hold	MD-5H NDB-1H
6, 8	1-10: 1000-ton in grapple	Hold	FPP-70H 200-ton grapple-9H
7	1-13: LP	Hold	AG-14H 1000-ton grapple-14H
9	1: CH	Hold	LS-15H All Others-(1h)
10	1: AL, 2-3: CH	1: LT, 2: LT, 3: LT, 4: LT, 5: LT, 6: LT, 7-20: Hold	ELS-8H
11	1: AL, 2-3: CH	1: NDB, 2-20: Hold	SSR-(2h)
12, 14	1000-ton craft in grapple	Hold	Sickbay-1H
15	1-19: HUV in SL grapple	Hold	MFD-(4h)
16-17	1-7: EMMR	1-7: Eng, 8-20: Hold	EMM-7H
18-19	1-7: EMMR	1-7: Eng, 8-20: Hold	EMMR-(67h)
20		Eng	LT-1H

If 1000-ton ship or Hiver utility vessel are not in their grapples, these hits count as hits on the grapple



Hiver Utility Vessel



General Data

Displacement: 200 tons
 Length: 21.25 meters
 Price: MCr113.44
 Configuration: Box SL
 Mass (Loaded/Empty): 1746.16/1325.96

Hull Armor: 31
 Volume: 2800 m³
 Target Size: S
 Tech Level: 14

Engineering Data

Power Plant: 272 MW TL-14 Fusion Power Plant (91 MW/hit), 1 year duration (0.337 MW excess power)
 Jump Performance: 3 (560 m³ for Jump-3, 373 m³ for Jump-2, 187 m³ for Jump-1)
 G-Rating: 2G (100 MW/G), Contra-Grav lifters (20 MW)
 G-Turns: 60 (104.8 using jump fuel), 12.5 m³ fuel each
 Fuel Tankage: 1310 m³ (93.6 tons), plus 27.2 m³ (1.9 tons) reserved for power plant
 Maint: 63

Electronics

Computer: 1xTL-14 Mod Fb Computer (1 MW), 2xTL-14 Mod St Computers (0.5 MW ea)
 Commo: TL-14 300,000-km radio (10 hexes, 10 MW), TL-14 1000 AU maser (∞; 0.6 MW)
 Avionics: TL-10+ Avionics, TL-14 Terrain-Following Avionics
 Sensors: TL-14 Passive EMS fixed array 120,000-km (4 hexes; 0.1 MW), TL-14 Active EMS 300,000-km (10 hexes; 15 MW)
 Controls: Bridge with 5xbridge workstations, plus 2 other workstations

Armament

Offensive: 1xTL-14 150-Mj Laser Turret (Loc: 10; Arcs: 2,3,4; 4.2 MW; 1 Crew), 1xMissile Barbette (Loc: 11; 5 ready MsIs; 0.15 MW; 1 Crew) (Total of 5 ready MsIs)

	Short	Medium	Long	Extreme
150-Mj Laser Turret	2: 1/10-31	4: 1/10-31	8: 1/10-31	16: 1/10-31

Master Fire Directors: TL-14 Missile/Beam MFD (5 Diff Mods; Msl 10 hexes Maser; 10 hexes; 1.92 MW; 1 Crew)

Accommodations

Life Support: Extended (0.56 MW), Grav Compensators (5G; 14 MW)
 Crew: 10 (2xManeuver, 1xElectronics, 3xGunners, 2xEngineering, 1xCommand, 1xMedic)
 Crew Accommodations: 5xsmall staterooms (double-occupancy, 0.0005 MW ea.)
 Passenger Accommodations: 5xsmall staterooms (0.0005 MW ea.), 3xemergency low berths (0.002 MW ea.)
 Other Facilities: Sickbay (0.8 MW)
 Cargo: 268.5 m³ with large cargo hatch
 Small Craft and Launch Facilities: 1xTL-12 active/passive sensor drone carried as cargo and launched via cargo hatch
 Air Locks: 2

Notes

The Hiver utility vessel (code-named HUV or "Hoover" in the Reformation Coalition) is a general-purpose ship. Each Hiver tender has one attached to it to fill such roles as scout vessel, auxiliary shuttle, courier, or search and rescue. It can be carried through jump while attached to the tender or jump separately using its own drives, depending upon the needs of the mission.

If no passengers are present, the crew will occupy the passenger staterooms.

Fuel scoops (40 tons per hour) and fuel purification machinery (2 MW), 19.65 hours to refine 1310 m³ (93.6 tons).

DAMAGE TABLES

Area (1D20)	Surface Hits	Internal Explosions	Systems
1	Ant	1-18: Elec, 19-20: Qtrs	JD-3H
2-3	1-6 Ant	Qtrs	PP-3H
4	1-6 Ant	1-18: Qtrs, 19-20: Hold	CG-1H
5	1-6 Ant	1-17: Qtrs, 18-20: Hold	MD-(4h)
6-9		Hold	FPP-2H
10	1-7: CH, 8-9: AL	1-6: LT, 7-20: Hold	AG-1H
11		1-12: MB, 13: Eng, 14-20: Hold	LS-2H
12-15		Hold	ELS-1H
16-19		1-9: Eng, 10-20: Hold	SSR-(2h)
20		Eng	Sickbay-1H
			MFD-(4h)
			LT-1H
			MB-1H
			All Others-(1h)

RULES EXPANSIONS

This section presents a number of expansions to the design sequences in *Fire, Fusion, & Steel* (FF&S). These expansions allow the design of certain specialized forms of equipment that were not fully addressed in FF&S, and present enhanced rules for a more detailed exploration of some of the technologies presented in FF&S. Obviously, ownership of *Fire, Fusion, & Steel* is required to make a whole lot of sense out of the next four pages.

These expansion rules are broken down into the same categories and presented in the same order as in FF&S.

SPACECRAFT DESIGN

Modules and Pods

Modules and pods are both removable, interchangeable components that can be added to a ship designed to accommodate them. By designing the correct mix of pods, a single ship can change capabilities and missions rapidly by simply swapping out modules or pods. A module is such a modular component which has its own external hull shell (which is therefore carried exposed to space), while a pod has only internal structure without a hull shell (and is therefore carried internally, and relies on its carrying vessel's external hull to protect it).

Material Volume: When designing a module, the material volume used is that for the size of the module itself, not a percentage of the material volume of the ship it is attached to. For example, in designing a 600-ton ship which can carry a 100-ton module, the MV of the ship is 17 (600 tons total minus 100 tons of module = required material volume for a 500-ton hull) and the MV of the module is 6.

When designing a ship-pod combination, the ship uses the MV which corresponds to the total size of the ship plus the pod, and it calculates hull shell and internal structure based on this value. The pod uses the MV appropriate to its own size, but calculates only internal structure. Thus a ship-pod combination devotes more space to internal structure than a unitary design of the same size.

Controls and Life Support Systems: If a pod or module's displacement is equal to 30% or less of the total displacement of the ship-module combination, it need not be fitted with its own life support, artificial gravity, or controls. All that is required is that the carrying ship be designed with controls, life support, and artificial gravity based on the total volume of the ship plus the module or pod, and these systems are assumed to "plug into" the module or pod and perform those functions for it.

Pods or modules larger than 30% of the total displacement must instead carry their own life support and controls. Note that when calculating maintenance points, the module/pod uses the additional computer divisor if the carrying spacecraft is so equipped, without having to carry its own computer (this is one of the benefits of the installed controls).

All modules and pods may draw power from or provide power to the carrying craft.

Grapples: Grapples may be required for the carriage of modules, but are never required for pod carriage.

Grapples are required when the modules being carried are allowed to be of differing sizes, or if multiple modules are carried, not all of which need be fitted at one time (for example, the RCES clippers in this book). Grapples are designed using the normal rules, based upon the displacement of the module.

Grapples are not required when the module is considered to be an integral part of the craft's hull configuration, and the module(s) carried is always of the same size/configuration (for example, the modular cutter).

Surface Hits: When calculating surface hits for a module (pods have no exposed surface, so have no surface hits on their damage tables), modules use the box configuration multiplier, but then have surface area divided by four to reflect surface area that is actually exposed, and not butted up against neighboring modules, other portions of the carrying spacecraft, etc.

GROUND VEHICLE DESIGN

Flotation Screens

As described in the FF&S design sequence (page 20), a vehicle whose enclosed volume in cubic meters + loaded mass in tonnes equals 1 or more will float. Those with a value of 1 or less will not.

Vehicles with a value of between 0.9 and 1 may be fitted with flotation screens to allow them to float for short distances (such as across a river or into a beach from a landing ship off shore). The price of the screen is Cr50 times the vehicle's chassis volume in cubic meters.

Time required to erect the screen for use is a number of combat turns times the vehicle's chassis volume in cubic meters.

Vehicles which swim with the benefit of flotation screens are vulnerable to enemy fire, as the hull of the screen-assisted vehicle is actually below the surface of the water, it is only the top of the screen which is above the water. All hits on a vehicle swimming with a flotation screen are considered to be on the screen. Treat the screen as having an Armor Value of 1, and any minor hit on the vehicle holes the flotation screen sufficient to cause the vehicle to sink like a rock (or to begin floating like a rock, take your pick). Thus even small arms damage can sink such a vehicle. Any crew aboard a vehicle which begins sinking must succeed at a Formidable: Swimming task to successfully escape the vehicle.

LIFT VEHICLE DESIGN

Grav Belts

Grav belts use a special application of the lift vehicle design sequence.

Select the volume of the contra-grav unit to be used, and divide by the volume multiplier to find the size of the contra-grav "bubble" in displacement tons. At TL-12+, the minimum volume of a contra-grav unit is 0.03 cubic meters, which yields a CG bubble of 0.1 tons, or 1.4 cubic meters. 1.4 cubic meters is the minimum volume required for a human-sized being in a grav belt, and includes personnel wearing armor, such as battle dress.

Although a "hull size" has been determined, the grav belt has no hull or material volume. The grav belt is a backpack-style design, and all of the material that will be installed as part of the grav belt will be part of this pack and will be subsumed within the 1.4 cubic meters of the grav belt user.

In addition to the CG unit, all grav belts require controls of at least the same tech level as the CG unit (these are calculated based on the "hull size" of the CG bubble), TL-6 or better flight avionics, a workstation of that same tech level, and a "microflight" computer. The workstation has its normal cost according to tech level, but has negligible volume and a mass of only 0.02 tonnes (for a rigid-structure grav belt, such as the "Broomstick" on page 11 of this book, use 0.04 tonnes mass per workstation). The microflight computer is specifically designed for grav belts and their peculiar requirements (see page 10 of this book for a discussion). It has a mass of 0.016 tonnes, a volume of 0.016 cubic meters, requires 0.008 MW, and costs MCr0.06 at all tech levels. Terrain-following avionics may also be added, if the designer wishes a safe NOE speed of greater than 40 kph.

The grav belt requires a thrust agency, almost always in the form of shrouded, vectorable propellers (use values for TL-8 propellers, FF&S, page 69). These propellers will usually be powered by the same battery that powers the belt's other systems, but its price must also be multiplied by 2.5 as specified by the propeller table. In addition, if the propellers are powered by battery, they require a transmission with a volume of 0.3 cubic meters per MW of power (mass in tonnes equals volume in m³, price in MCr equals volume times 0.0015).

Required thrust for the propellers is determined as follows: G-rating is determined by dividing thrust in tonnes by the volume of the CG bubble in displacement tons. When determining speed, grav belts have an efficiency multiplier of 0.65. The other details follow the lift vehicle sequence. Remember that the maximum allowable speed for unprotected personnel is 300 kph (personnel require vac suits, combat armor, battle dress, etc., to exceed this speed).

Once the total power requirement is known, set a duration time and design a battery which will meet those needs.

AIRCRAFT DESIGN

Compound Helicopters

When calculating the performance of compound helicopters (including X-wing helicopters), their performance must be separated into fixed-wing and rotary-wing modes. The fixed-wing mode uses the compound helicopter's maximum speed, but may not use the NOE mode. This is because there is no power being applied to the rotor blades (or in the case of the X-wing, the blades are locked), and the aircraft cannot hover. By definition, aircraft which cannot hover may not conduct NOE flight.

The rotary-wing mode allows NOE flight, but the aircraft is then limited to the helicopter top speed of 320 kph, reduced by drag points as normal.

Transitioning from one mode to the other requires a Difficult: Pilot (use lower of Fixed Wing or Rotary Wing cascade) roll. Outstanding Success indicates that the aircraft is considered to be in the new mode immediately. Normal success indicates that the aircraft is in the new mode on the following turn. Normal failure indicates that the roll must be attempted again on the following turn. Catastrophic Failure requires a Difficult: Pilot (use cascade for current mode) roll to avoid losing control of the aircraft and crashing on the following turn.

Aircraft Modifications for Other Planetary Environments

The aircraft design rules in *Fire, Fusion, & Steel* are intended to design aircraft for use in a standard atmosphere with 1G gravity. Although it is primarily grav vehicles that are intended as flexible vehicles that can be taken from one planetary environment to another, in some cases the same will be required of aircraft. In the TNE basic rules, there is a simple prohibition against operating aircraft on worlds other than those for which they were designed. This is because of the many complicated interactions involved in getting an aircraft to fly in a multitude of environments, and because the TNE basic rules were not the place to go into involved discussions of speculative aerodynamics.

Strictly speaking, the rules below vastly understate the difficulties in designing aircraft for multiple environments (with atmospheric composition varying independently with gravity and temperature), and only obliquely touch upon such complex issues as the speed of sound varying with pressure and temperature, etc. In reality, each item of the FF&S design sequence would have to be re-evaluated based on the specific and cross-cutting local conditions, but this is the sort of abuse that we pay real aircraft designers to put up with, and not what helps players and referees to enjoy a science-fiction game. So while these exist to allow Traveller aircraft designers to have fun designing multi-environment aircraft, and to quickly and painlessly take these craft from one environment to another, referees should feel free to institute much stiffer prohibitions in their campaigns.

Atmosphere: Aircraft may only fly in thin, standard, or dense atmospheres (codes 4-9). If an aircraft (fixed- or rotary-wing) is intended to be able to operate in thin or dense atmospheres (or both) in addition to standard atmospheres, multiply its airframe cost by 1.5 to allow for reconfigurable or variable geometry intake ramps, lift devices, etc.

In addition, multiply rotary-wing rotor assembly mass by 2 if they are to function in another atmosphere type in addition to standard. This provides them with the additional gearing required to allow them to be fitted with different rotor assemblies for different atmosphere types. Each additional set of rotors masses 0.25 times the mass of the modified multi-atmosphere rotor assembly. These extra rotor sets will have to be stored and transported separately at a volume in m³ of 20 times their mass in tonnes. Cost is calculated normally based on rotor assembly type.

In addition, an aircraft's airframe will yield different maximum and minimum speeds in different atmosphere types, and this must be examined. It may be that some aircraft can no longer fly, as they can no longer meet the minimum speed required to stay in the air in a thin atmosphere, for example. Maximum, cruising, and NOE speeds must be recalculated based on these new numbers, and aircraft with drag points calculate their new speeds down from these new maxima using the normal procedure. The new minimum speeds will change take-off and landing distances as well.

Note that while dense atmospheres "slide the performance window down" by reducing minimum and maximum speeds, thin atmospheres narrow the permissible performance bands. This is because the speed of sound is lower in thin atmospheres, and airframe maximum speed is based on its ability to handle the compression phenomena associated with the speed of sound. (The other side of this is that denser atmospheres provide more lift, hence lower stall speeds, while thinner atmospheres provide less lift so require greater speeds to remain airborne.)

Note also that this table uses a single average value for each of thin and dense atmospheres. The actual density of any atmospheres varies within a range, so in reality, these numbers would be different for each and every world, even those classified by Traveller as having the same atmosphere type. As the purpose of these rules is to allow aircraft to be relatively quickly converted from one world type to the next, it would be criminally stupid to attempt to calculate exact numbers for each individual world. Instead, for the purposes of these rules (and in the interest of universal mental health) any world of a given atmosphere code yields the same performance as any other world with the same code. The value used for thin atmospheres is 0.6 atmospheres and the value for dense is 2.0 atmospheres.

Airframes

Type	Thin (4, 5)		Standard (6, 7)		Dense (8, 9)	
	Min	Max	Min	Max	Min	Max
Simple	250/125	270	150/75	320	75/40	160
Autogyro	65/—	200	40/—	200	20/—	100
Fast Subsonic	265/135	680	160/80	800	80/40	400
Transonic	300/150	940	180/90	1100	90/45	550
Supersonic	465/235	2400	280/140	2800	140/70	1400
Hypersonic	585/290	4300	350/175	5000	175/90	2500
Wing-in-ground	125/—	400	75/—	400	40/—	200

Gravity: Note: Traveller does not focus on a world's gravity *per se*, but primarily on the density of its atmosphere, which is a reflection of its gravity. Players and referees should not feel compelled to worry about gravity effects on aircraft so long as they address the atmospheric requirements above. You have our permission to ignore it (goodness knows we'd like to).

For those who feel compelled to forge ahead to account for different gravities, multiply the aircraft weight by the local gravity before calculating G-Rating, Speed, and Take-off and Landing rolls. Calculate glide ratios normally, and then divide the result by the local gravity in Gs. In G-fields of greater than 1, multiply normally calculated maintenance points by the gravity in Gs, as more maintenance is required to watch for and repair stress fractures, etc.

SMALL ARMS

Dual-Feed Receivers

Weapons may be designed to accept ammunition from more than one magazine at a time, allowing the firer to switch back and forth between two or more supplies of rounds. This is accomplished in the Receiver step.

Add 10% to the mass of the receiver for each additional feed source that will be allowed. In other words, if a submachinegun will be allowed to draw from two separate magazines at one time, add 10% to mass. Three magazines at one time would add 20%.

The same rule applies to design a receiver which can accept ammunition from box magazines or belts (not both at the same time): this would add 10% to receiver weight. Note that weapons designed for belt feed may use belts or cassettes and vice versa at no penalty, and no increase in cost, as these types of feed are considered to be identical from the receiver's point of view.

Price is calculated normally based on the increased weight.

(This same rule may also be used with the Gauss Weapons design sequence.)

Modular Small Arms

Small arms may be built with key modular components that are designed to be able to be removed and replaced by other modular parts, or to be recombined with other parts to create different weapons for different purposes (for example, the CMWS on pages 62 to 66 of this book).

In order to have this modular capability, parts which are to be used in this way have their prices increased by 10%. Components which come under this rule are barrels, receivers, and stocks. Note that this modular capability only allows these parts to be fitted to other parts that were built with the same specifications (i.e., ammunition caliber and average muzzle energy).

Numerous weapon components do not come under this rule as they are either not in themselves modular (for example, muzzle brakes and flash suppressors which are permanently attached to a modular barrel are not increased by 10%, they merely add their normal cost to the 10% more expensive barrel price) or are already designed to be installed on or removed from any number of weapons. Among this latter category are tripods and bipods, backpack-mounted recoil compensators (as opposed to stock-mounted recoil compensators), silencers, and laser, electronic, telescopic, and optic sights.

(This same rule may also be used with the Gauss Weapons design sequence, but where receivers and barrels are built to different muzzle velocity standards, the assembled weapon uses the lower of the two.)

Overpowered Cartridges

It is possible for small arms to fire ammunition with a higher average muzzle energy than that for which the weapon was designed. Naturally, this is potentially dangerous. (Note that for the purposes of these rules, a weapon may only fire cartridges of the precise dimensions for which it is initially designed. This means that overpowered cartridges are only possible when constructed at a higher tech level, where the higher tech level energy multiplier means that more energy may be fitted into a cartridge of the same dimensions.)

When firing overpowered cartridges, there is a chance that the weapon will be damaged or actually explode, doing damage to the firer. This chance is calculated as follows:

$$10[(\text{NAME} + \text{DAME}) - 1.2]$$

NAME: Average muzzle energy of the new (overpowered) cartridge

DAME: Average muzzle energy for which the weapon was designed

The result is the chance on 1D20 of the weapon to be damaged or explode from the excessive ammunition energy (round to the nearest whole number).

This roll is made each combat turn that the weapon is fired with the overpowered cartridges, regardless of the number of times it was fired or its rate of fire. If the indicated number or less is rolled, the weapon has had a problem. Roll 1D20 and consult the table below.

1-12	Weapon is damaged by internal explosion, and is no longer usable. Firer loses his or her next action due to surprise (although you know, he really shouldn't be, the silly bugger...)
13-16	Weapon explodes. If a one-handed weapon, the explosion does 1D10 hits to the firer's firing arm. If a two-handed weapon, it does 1D10 hits to each of the firer's firing arm and head. Weapon is destroyed.
17-20	As 13-16, but 2D10 hits of damage.

For example, if the TL-6 9x20mm round (458 joules, see page 43 of this book) is loaded in the TL-4 9mm revolver (designed for 356 joules, see TNE, page 352), the roll for each turn of fire is:

$$10[(458+356)-1.2] = 0.865, \text{ rounded to } 1$$

Thus a roll of 1 on a D20 means that the above table must be consulted.

HIGH-ENERGY WEAPONS

Rapid-Fire High-Energy Weapons

High-energy weapons have an inherently low rate of fire because of the large amount of energy they process and the time required for the weapon to be cooled for another shot. The plasma/fusion combustion chamber can only be cooled so fast, as overcooling will cause it to lose its tempering and begin to crack. These microscopic cracks can eventually cause combustion chamber explosions.

The solution to this problem is to build high-energy weapons with multiple chambers so that one chamber can fire while one or more other chambers are cooling. Relatively high rates of fire can be attained by this method, using the following formula:

$$ROF = Ep + (25C)$$

where Ep is the weapon's pulse energy in Mj, C is the number of chambers, and ROF is rate of fire expressed in the number of 5-second combat turns between shots. Take the inverse of this result (i.e., divide 1 by this value) to get ROF in shots per 5-second combat turn. Drop all fractions (e.g., 1.99 becomes 1).

The design of a rapid-fire (multichambered) energy weapon differs from the standard sequence shown in FF&S in three ways: firing unit, supporting hardware, and ammunition feed.

Firing Unit: Establish the pulse energy and mass of a single-chamber firing unit using the normal FF&S rules, and determine the total number of chambers the weapon is to have. Each additional chamber beyond the first (the basic firing unit includes one chamber already) has a mass of 0.5 times the basic firing unit already calculated. Price of the rapid-fire firing unit is calculated normally: Cr2500 times total mass of the multichamber firing unit in kilograms for plasma weapons and Cr7500 times total mass in kg for fusion weapons.

Supporting Hardware: The multichamber firing unit requires supporting hardware beefed up to handle the larger cooling requirements of multiple firing chambers. The mass of this rapid-fire supporting hardware is equal to the mass of the supporting hardware for a normal single-chamber weapon of the required pulse energy times the value (number of chambers+2). Price is calculated normally based on final weight: Cr2500 times mass in kilograms for plasma weapons and Cr7500 times kg for fusion weapons.

Ammunition Feed: Rapid-fire energy weapons are fed from magazines. The magazine may be of any size desired by the designer. The mass of an empty magazine is equal to mass of all of the rounds carried multiplied by 0.01. The price of an empty magazine in credits is equal to its empty weight in kilograms times 5. The volume of a magazine in cubic meters is equal to the mass in tonnes of a full load of ammunition divided by 4. As with other automatic heavy weapons, when installed in a vehicle, the magazine must be in the same portion of the vehicle as the weapon in feeds.

Other portions of the weapon are designed as described in the basic FF&S sequence. The size of the recoil cradle is calculated normally, and is not increased in size based on the number of chambers (as rapid-fire high-energy weapons grow larger, their mass and structure gradually take over some of the recoil-absorption functions of the cradle).

Plasma and Fusion Bazookas

Plasma and fusion bazookas are less sophisticated versions of the plasma and fusion rifles designed in FF&S. High-energy bazookas fire one individually loaded round at a time, and expend a great deal of the round's energy out the back of the weapon so that they have no recoil.

Weapon: Bazookas use the same formulae presented in FF&S, but use different tech level multipliers (Tm) in the firing unit and support hardware formulae, as shown on the table below.

TL	Firing Unit Tm	Support Hardware Tm
10	6	6
11	4.5	5
12	3	4
13	3	3
14	3	2
15	1.5	1
16-17	0.75	0.5
18-19	0.375	0.25
20+	0.225	0.15

Ammunition: Bazooka ammunition is calculated using the procedure as described on FF&S page 67, but with the volume and MCr multipliers from the table below. These multipliers increase the mass and price to allow for the additional mass that is vented rearward to negate recoil, and for the disposable chemical laser ignition system contained in each plasma/fusion bazooka cartridge.

TL	Description	Vol	MCr
10	Chemical Explosive Cartridge (CPC)	0.0009	0.00018
12	Pulse Plasma Cartridge (PPC)	0.00045	0.000045
14	Pulse Fusion Cartridge (PFC)	0.0003	0.0000144
16+	Grav Compr. Fusion Cartridge (GCFC)	0.00015	0.0000072

Backblast: All personnel standing within 10 meters of the rear of the bazooka when it is fired must take backblast damage. Backblast damage is a number of D6 equal to the bazooka's pulse energy times 2. It is distributed in the same fashion as concussion damage (TNE, page 283).

All other details, such as range, damage, etc., are calculated just as printed in FF&S.

Concussion and Burst of High-Energy Weapons

The high-energy design sequence in FF&S did not discuss plasma and fusion gun burst and concussion, as it was written primarily with small arms weapons in mind. The following criteria comes into play only with weapons of 4.7 Mj and greater, as weapons of lower energy have a burst radius that rounds down to 0, and therefore have no concussion calculated. Both concussion and burst are calculated from the weapon's damage value (DV in the equations below), calculated normally. Burst radius is rounded to the nearest 10-meter grid radius value (e.g., 5, 15, 25, 35, etc.).

$$\text{Concussion} = 0.001(DV^2)$$

$$\text{Burst Radius (meters)} = 0.1(DV)$$

MUNITIONS

Guidance and Missile Design

Target-Designated Guidance and Very Long-Range Missiles: Target-designated guidance (both laser and radar, and now AEMS, see below) is primarily intended to allow the missile to home on a target which is "painted" with a friendly designation or sensor system. However, this guidance package also enables the missile to function in "beam rider" mode. This capability is used almost exclusively for the very long-range planetary bombardment missiles which are fired at great distances from the planetary surface (often from far orbits hundreds of kilometers from the surface in order to provide safety for the firing starships). As these ranges are well in excess of homing, target seeker, and target memory ranges, the beam rider mode is used to guide these missiles through the long-distance first portion of their flight, until they get close enough to use their homing, seeker, or memory packages.

Beam riding means that the missiles fly along a beam of radar, laser, or AEMS energy, usually projected by a sensor on the launching ship. The missile's designation guidance package allows it to maneuver to stay within the confines of this beam and thereby maintain a course into the general vicinity of its target. Missiles which use beam riding in conjunction with terminal homing, target seeking, or target memory modes are called "dual mode" missiles (and include the Spruce and Fir missiles on page 109 of this book). Missiles launched in dual mode require a modified two-part to-hit task. First, the beam-riding portion is resolved as a normal target-designated task (TNE, page 278). This task will determine how close the missile arrives to the target when its terminal guidance system takes over. On normal success, the missile has arrived 1D10x5 kilometers from the target, and on Outstanding Success it has arrived 1D20 kilometers from the target. Compare the arrival range to the listed short range of the missile's terminal guidance package, and resolve the terminal portion of the missile's flight as a normal homing missile task (TNE, page 278) based on this range.

The disadvantage to this mode is that it requires use of active sensors, which invites notice by the enemy, and attack and countermeasures. A different form of dual mode missiles use command guidance for the first portion of the flight instead of laser/radar/AEMS beam riding. This allows missiles to be launched into their "target baskets" while only using passive sensors. These are resolved exactly as the beam riders above, but the first portion of the flight is resolved as an operator-guided task (TNE, page 278). All other details are the same. Examples of this type of dual mode missile are the planetary defense missiles on pages 104-105 of this book.

Additional Guidance Types: Add the following line to the target-designated guidance systems table (FF&S, page 145):

TL	Type	Mass	Cr
10+	AEMS	1	1000

AEMS signifies active EMS designation, meaning a guidance system which can be designated by a TL-10+ active EMS sensor. Since active EMS sensors use multi-spectrum illumination, a missile equipped with an AEMS designated seeker may also accept designation by radar or laser.

Add the following lines to the Homing Guidance Systems table (FF&S, page 145):

TL	Type	Mass	Cr	Range	AGL
9+	Advanced ARM	1	3000	36	—
9+	Advanced HOJ	1	3000	36	—

Range is short range in kilometers of a missile fitted with this guidance package.

HOJ is "home on jamming" which allows the missile to home on a functioning area jammer. Area jammers include the jammers of that name as well as jammers which are being used to jam radio transmissions (broadband jamming). The missile may not home on the radar and EMS jammers which are being used in a defensive deceptive jamming mode to increase the difficulty levels of sensors attempting to detect its owning platform.

Add the following information to the Smart Warheads Sensor table (FF&S page 145):

TL	Type	Mass	Cr	Memory Range	Seeker Range
7	Visual	1	200	8	40
7	IR	1	2000	4	20
8	Imaging Radar	1	10,000	8	40

Memory Range is the short range in kilometers of a target memory missile equipped with this sensor. *Seeker Range* is the short range in kilometers of a target seeker missile equipped with this sensor.

Effect of Nuclear Warheads in Atmosphere: Planetary defense missiles are fitted with nuclear-detonation laser warheads for use outside of atmospheres. Warhead detonation within an atmosphere will not allow the X-ray lasers to function properly, so the only damage that can be done to a spacecraft is by the nuclear explosion itself. Roll the to-hit task for the missile to hit the target normally. A result of Outstanding Success means that the warhead detonated 1D6x50 meters from the target. Normal success indicates that it detonated 1D20x50 meters from the target. Failure indicates that the warhead detonated 2D20x200 meters from the target. Roll the range of detonation and then find the line on the table below that corresponds to the warhead's yield, and see if the target is within one of the three listed radii. All fixed-wing or rotary wing aircraft within the secondary blast radius are destroyed. All spacecraft within the "destruction" radius are immediately destroyed (actually damaged so badly that they immediately crash to the ground). All spacecraft within the primary blast radius have 5 major hits rolled against their electronics. All spacecraft within the secondary blast radius have 1 major hit rolled against their electronics.

Yield	Destruction	Primary	Secondary
10	180	540	720
20	300	540	900
50	420	750	1200
100	480	750	1260
200	540	800	1400
500	600	880	1560

Yield: Of warhead in kilotons; Other entries are radii of destruction, primary blast, and secondary blast in meters.

LAUNCHERS

Shotgun and Flechette Rounds for Grenade Launchers

Most man-carried grenade launchers are provided with a shotgun or flechette round for close-range self-defense because grenades are typically useless or even counterproductive for close-range use.

Rating the performance of these rounds, however, requires a hybrid use of the grenade launcher and small arms design sequences as follows. Flechette rounds for grenade launchers are of the non-bursting variety, and are just like shotgun rounds except that they fire finned darts.

Price: The price of these rounds is determined the same way as any other grenade round, except that the price multiplier (FF&S, page 141, table I) for shotgun and non-bursting is 10.

Number of Rounds: Define the number of projectiles in the cartridge, and this must be a multiple of four. Note that four projectiles are resolved (using the shotgun/flechette rules on TNE, page 279) as a 3-round burst, eight projectiles as a 5-round burst, and 12 as a 10-round burst.

Damage and Penetration: Divide the muzzle energy of the grenade round (calculated using the normal grenade launcher sequence) by the number of projectiles contained in it. The result is the energy per projectile. This can be used on FF&S, page 94, to define the damage and penetration of these projectiles.

Range: This calculation (page 96, FF&S) requires an additional figure, "Blm" which is not created as part of the grenade launcher design sequence. To find Blm, first subtract 2 from the grenade launchers barrel length in calibers, and multiply the result by 0.233. This number is "Blp" which is used on page 96 to calculate Blm.

$$\text{Blp} = (\text{barrel length in calibers} - 2) \cdot 0.233$$

With Blm, short range of the shotgun or flechette round can be calculated using the normal procedures on FF&S, page 96. Grenade launcher shotgun and flechette rounds use the two-hand multiplier but ignore the smoothbore multiplier.

NEW RULE

All projectile weapons with a penetration of Nil may penetrate Armor Value 0 using the same method as melee weapon penetration. In other words, the armor absorbs a number of hits (rolled hits, not damage dice) equal to twice its parenthetical anti-melee armor value, and hits above that level "penetrate" the armor and are applied to the wearer.

MISCELLANEOUS

Workstations and Labs

All laboratories (from the Optional Features section) are assumed to have a number of workstations in them that permit scientists and technicians to use the laboratory's equipment. However, if the scientists are intended to use some of the ship's other equipment, such as sensors or communicators (as in the case of the Lab Ship, TNE, page 371), normal workstations must be provided for the number of personnel who will be using these devices at any given time.

Hatches and Rates of Troop Egress

Cargo hatches set a limit on the number of troops who may embark/debark through them in a single combat turn (five seconds). A large cargo hatch allows 20 troops to pass through per combat turn, and a small cargo hatch allows 12. These numbers assume troops not equipped with rigid armor (includes battle dress and combat armor) and a troop bay equipped with adequate or better seats. If troop bay is equipped with cramped seats, cut this rate in half. If troops are wearing rigid armor, cut this rate in half again. Thus a single small cargo hatch used by troops in battle dress and cramped seats will allow 3 troops to pass through per combat turn.

Treat air locks the same way, but with a base rate of 2 troops and a minimum of one.

INDEX

A number in parenthesis (12) following an item indicates its tech level. The abbreviation RC indicates that it is a standard piece of Reformation Coalition equipment.

2cm Chemical Cartridge Laser Pistol (13) .. 95
 2cm Chemical Cartridge Personal
 Defense Laser (PDL) (13) (RC) 95, 127
 2cm Light Assault Gun (LAG) (8) 54
 2.5cm Low-Velocity Grenade Launcher (10) .. 99
 3-Ton Socket Liferaft 146
 3cm Chemical Cartridge Laser Carbine (13) .. 94
 3cm/L70 Autocannon 123
 4cm Chemical Cartridge Laser Rifle (13) 93
 4cm RAM Grenades 101
 4mm Gauss Pistol (13) 48
 4mm Gauss Rifle (12) 70
 4mm Gauss SAW (12) 71
 4.3cm Plasma Rifle (12) 86
 4.7cm Fusion Rifle (Compensated) (14) 87
 4.75-MJ Plasma Cradle Gun 117
 5-Ton Liferaft 147
 5cm Direct Electrical Input Laser Pistol (9) .. 91
 5mm Assault Rifle (7) 59
 5mm Body Pistol (8) 49
 5mm Rotary Gun (8) 121, 149
 5.5mm Assault Rifle (9) 52
 5.5mm Assault Rifle
 with Integral 2.5cm Grenade Launcher (9) 53
 5.5mm Gauss Pistol (Ithklur) (14) 74
 5.5mm Gauss Rifle (Ithklur) (14) 75
 6cm Assault
 Rocket Launcher (ARL) (10) 98, 115, 127
 6mm Rifle Grenades (5) 101
 7mm ACR (9/10) (RC) 61
 7mm Assault Rifle (7) 50
 7mm Autorifle (6) 50
 7mm CMWS Carbine (10) (RC) 64
 7mm CMWS GPMG (10) (RC) 67
 7mm CMWS SAW (10) (RC) 66
 7mm CMWS Vehicle MG (10) (RC) 67
 7mm MMG (5) 125
 7mm Rotary Gun (8) 121
 7mm CMWS Rifle (10) (RC) 65
 7x57mm MG, Vehicle Mount 123
 7.5mm MG 43, 126
 7.6mm Autopistol (9) 46
 7.6mm Submachinegun (9) 51
 8cm Direct Electrical Input
 Laser Rifle (9) 92, 114-115, 126, 127
 9/25mm Deck Sweeper
 Boarding Weapon (5) 58
 9cm Plasma Bazooka (10) 85, 115, 127
 9mm Autopistol (6) 47
 9mm Magnum Revolver, Guild (5) 59
 9mm Rifle (7) 51
 10-Ton Lifeboat 147
 10cm Direct Electrical Input
 Laser Carbine (8) 90
 10cm Lyrebird Remote Missiles (9) 107
 10cm Nail Tactical Missile (9) 106
 10mm Snub Automatic Pistol (8) 44
 10mm Snub Revolver (8) 45
 12-MJ Plasma Cradle Gun 126
 13mm Sniper Rifle (6) 55
 14-MJ Plasma Cradle Gun 117
 14.5mm AAR "Crunch Gun" (5) 56
 18mm RC AAS
 (Automatic Assault Shotgun) (9/10) 69
 25-ton Lifeboat Module 132
 25-ton Missile Module 132
 25-ton VIP/Special Quarters Module 132
 50-ton General Cargo Module 132
 50-ton Power/Fuel Module 133

50-ton Service Module for
 10-ton Small Craft 133
 50-ton Survey Module 133
 100-ton Armed Quarters Module Mk Ic .. 134
 100-ton Fighter Module 133
 100-ton Fuel Module 134
 100-ton General Cargo Module 133
 100-ton Quarters Mk Ia 134
 100-ton Quarters Module Mk Ib 134
 125-MJ Rapid-Fire Fusion Gun 113
 130mm/60-Caliber Hypervelocity Gun (8) .. 121
 200-ton Fuel Module (refining) 135
 200-ton General Cargo Module—Cutter .. 135
 200-ton Quarters Module Mk IIa 135
 250-kg (25cm) TL-7 Deadfall Bomb 15
 300-km Tight-Beam Radio
 Orbital Relay Communicator 25
 400-ton Fuel Module (refining) 135
 760MJ Rapid-Fine Plasma Gun 138
 Advanced Combat Rifle (9/10) 61
 AEMS Target Designation 157
 Aerospace Defense Missiles 104-105
 Air Raft, Convertible (12) (RC) 114
 Aircraft In
 Multiple Planetary Environments 155
 Ammunition 40-43
 Assault
 Rocket Launcher (ARL) (10) 98, 115, 127
 ATV Module 143
 Aurora-Class Clipper (RC) 131
 Automated Sensors (12) 26
 Automatic Assault Shotgun (RC) (9/10) 69
 Battle Dress, Schalll 23
 Binoculars 28
 Body Pistol (8) 49
 Body Sleeve 11
 "Broomstick" (Tandem Grav Rail) 11
 "Buster" TL-8 Weapons Carrier 127
 Canaries 30
 Charina APC (7) 124
 Chemical Lasers 93
 Clipper Modules 132-135
 Clippers, Reformation Coalition 130, 136
 CMWS Carbine (10) (RC) 64
 CMWS Component Price List 63
 CMWS GPMG (10) (RC) 66
 CMWS Rifle (10) (RC) 65
 CMWS SAW (10) (RC) 66
 CMWS Vehicle MG (10) (RC) 67
 Coalition Multipurpose
 Weapons System (CMWS) 62
 Color Plate Captions 76
 Communications Devices 24
 Communications Uplinks 24
 Communications/
 Command Module (Station) 144
 Compound Helicopter Rules Expansion ... 154
 Convertible "Ragtop" Air Raft (12) (RC) .. 114
 Covert Operations Equipment 32
 "Crunch Gun" (5) 56
 Cutter Modules 143-145
 Decoys 113, 117, 121
 Direct Electrical Input Lasers 90
 Double-Barreled Sawed-Off Shotgun (4) ... 68
 Double-Barreled Shotgun (4) 68
 Drone, Planetary Sensor (12) (RC) 118
 Dual-Feed Receiver Rules Expansion 155
 Ferret Attack Speeder (12) (RC) 116
 Filter Mask 34
 Filter Respirator Combination 35
 Fir Planetary Strike Missile (11) (RC) 109
 Flotation Screens Rules Expansion 154
 Foxbat Pathfinder (12) (RC) 148
 Fuel Module 143
 Fury-type Assault Lander 149
 Fusion Rifle (Compensated) (14) 87

Gauss Gun, VRF (10) 72-73
 Gauss Pistol (13) 48
 Gauss Pistol (Ithklur) (14) 74
 Gauss Rifle (12) 70
 Gauss Rifle (Ithklur) (14) 75
 Gauss SAW (12) 71
 Goggles 29
 Grav Belt Rules Expansion 154
 Grav Belts 10
 Grenade Launcher Shotgun and Flechette
 Rules Expansion 157
 Grenade Launcher,
 2.5cm low-velocity, attached (10) 99
 Grenades and Pyrotechnic Signals 100
 Group IV Stretch Clipper 136
 Guild 9mm Magnum Revolver (5) 59
 Guild Deck Sweeper Boarding Weapon (5) ... 58
 Habitation Module (Station) 145
 Hand Grenades 100
 Heavy Battle Dress (12) (RC) 20
 High Energy Weapons Rules Expansion ... 156
 High-Energy Weapons 86
 Hiver Tender 152
 Hiver Transport 151
 Hiver Utility Vessel 153
 Holsters and Ammo Pouches 47
 Homing Missiles 108
 Hostile Atmosphere Survival Equipment 34
 Intrepid Grav Tank (14) 112
 Ithklur Gauss Pistol 74
 Ithklur Gauss Rifle 75
 Kelley Victrix
 (Victrix-Class Multimission Sloop) 138
 Lab Module (Station) 145
 Laser Carbine, CLC (13) 94
 Laser Carbine, DEI (8) 90
 Laser Gunpack (TL-11) 143
 Laser Pistol, CLC (13) 95
 Laser Pistol, DEI (9) 91
 Laser Rifle, CLC (13) 93
 Laser Rifle, DEI (9) 92, 114-115, 126, 127
 Laser Sniper Weapon,
 CLC (LSW) (13) 97, 115, 127
 Lasers 88
 Leader Suit 21
 Liferrafts 146-147
 Light Assault Gun (LAG) (8) 54
 Light Battle Dress 18
 Light BRT (a.k.a. "Baby Brute") 21
 Light Crossbow (2) 103
 Lightning Bolt 31
 Long Composite Bow (1) 103
 Low-Tech Weapons 102
 LRV-51 Pandina (6) 122
 Lyrebird Remote Missiles 107
 Maggart-class Clipper
 ("Stretched Aurora") (RC) 136
 Manta-Class Fueler (RC) 130
 Mary Ellen Carter Armed Merchant 150
 Medical Module (Station) 145
 Missile Guidance Rules Expansion 156
 Mjolnir Advanced ARM 109
 Mk I Drop Capsule 14
 Mk II Drop Capsule 15
 Modular Cutter 142
 Modular Small Arms Rules Expansion 155
 Modules Rules Expansion 154
 Mongoose Attack Speeder (12) (RC) 116
 Multimission Pods 141
 Multimission Scout 140
 Nail Antiaircraft Missiles 106
 Nail LOS Missiles 106
 New Rule for Penetration Nil
 Projectile Weapons 157
 Non-Compensated High-Energy Weapons ... 86
 Nuclear Warhead Antiaircraft Warheads 157

Nuclear Warheads 105, 157
 Overpowered Cartridges Rules Expansion 155
 "Panda" Light Tank (6) 122
 Panda ERA Set 123
 Passenger/Cargo Module 144
 "Pathie" Armored Car (5) 125
 Personal Defense Laser
 (PDL) (13) (RC) 95, 127
 Personal Reentry Kit 12
 Pine Planetary Strike Missile (11) (RC) 109
 Planetary Defense Missiles (PDMs) 104
 Planetary Sensor Drone (12) (RC) 118
 Planetary Strike Missiles (11) (RC) 109
 Plasma and Fusion Bazookas
 Rules Expansion 156
 Plasma Bazooka (10) 85, 115, 127
 Plasma Rifle (12) 86
 Pods Rules Expansion 154
 Prairie Fire Tank (8) 120
 PRK Reentry Sequence 12
 Protective Mask 35
 Pyrotechnic Signals 101
 Pyrrhus Support Sled (13) 126
 "Ragtop" Air Raft (12) (RC) 114
 RAM Grenades 101
 Rapid Fire High-Energy Weapons
 Rules Expansion 156
 RC Sample Fireteam Organizations 9
 RCES Body Sleeve 16
 RCES Heavy Battle Dress (12) (RC) 20
 RCES Light Battle Dress 18
 Reactive Armor Block Sets
 for the LRV Pandina 123
 Recoil-Compensated
 High-Energy Weapons 87
 Remotely Piloted Reconnaissance Vehicle .. 27
 Rescue Equipment 36
 Respirator 34
 Rifle Grenades (5) 101
 Rifled Musket (3M) 102
 Rules Expansions 154-157
 Schalll Battle Dress 23
 Schalll Roller 22
 Scout Suit 21
 Scout, Multimission 140
 Short Bow (0) 103
 Small Craft 129
 Smoothbore Flintlock Musket (3) 102
 Snub Automatic Pistol (8) 44
 Snub Revolver (8) 45
 Socket Sensor Package 148
 Speedloaders 45
 Spruce
 Planetary Strike Missile (11) (RC) 109
 Squad Support Laser,
 CLC (SSL) 76, 96, 115, 127, 138
 Standard Trooper Suit 21
 Station Modules 144
 Strategic Communicators 25
 Stretch Clipper 136
 Support Module (Station) 145
 Survey Module 144
 Tac Missiles 108, 117
 Tactical Communicators 25
 Tandem Grav Rail, "Broomstick" 11
 "Thunderchicken" All-Weather
 Compound Attack Helicopter (9) (RC) ... 119
 Unit Organizations 9
 Utility Small Craft/Spacecraft classes 129
 Virus Capsule 31
 Virus-Detecting Equipment 30
 Vision-Enhancement Equipment 28
 VRF Gauss Gun
 (Man-Portable Field Mount) (10) 72
 VRF Gauss Gun (Vehicular Mount) (10) 73
 Wildbat Fighter (12) (RC) 148

STAR-VIKINGS™

Personalities of the Reformation Coalition



The Reformation Coalition contains a wide variety of personalities, and *Star Vikings* will allow referees to run them all: members of the RC government and armed forces, covert intelligence operatives, RC allies from freelancers to Free Traders, plus representatives of the RC's implacable opponents: the Guild and the ruthless dictators from the Wilds.

Each personality is a fully detailed *Traveller* character ready for use in a *Star Viking* campaign, with extensive referee's notes on the characters' motivations and backgrounds, plus guidelines on how to introduce these characters into a campaign, and keep them crossing the players' paths.

In addition, *Star Vikings* presents eight unique starships and their crews, complete with maps of their areas of operation and scheduled trade routes, and full color profiles of their configurations and markings.

These characters and ships are not one-trick ponies; they are useful, long-term NPCs and crews that will add color and detail to your campaign for a long time to come.

GDW

Science Fiction Roleplaying Game

TRAVELLER[®]

The New Era

TNE Referee's Screen

This screen assembles the most commonly used task-resolution and combat charts into an easy-to-use format for referees and players alike.

Other commonly used charts and tables are collected into a charts booklet to free Traveller gamers from having to flip through the rulebook to find the information they need. In addition to all of this information at your fingertips, the

Referee's Screen comes with a complete Traveller: The New Era adventure that brings the players face to face with one of the most fearsome and complicated challenges of the New Era: sentient electronic life.

TNE Players' Forms

The perfect companion to the Referee's Screen, this booklet contains a multitude of ready-to-use forms to organize and detail your New Era campaign, useful for players and referees.

Revised, more useful character sheets and worksheets head the list, followed by NPC and ammo sheets. But the remainder of the book is all-new forms: player possessions register, ship design and hit location worksheets, blank ship data profiles, subsector data sheets, animal encounter forms, and trade forms. For the cartographically inclined, the book also includes blank map forms that use a convenient multi-scale hex grid system that zooms in or out all the way from local surface scale to continental scale all the way to an entire planetary surface.

GDW

P.O. Box 1646
Bloomington, IL 61702-1646

TRAVELLER

The New Era

Product List

0300	\$27.00	Traveller: The New Era (basic rules book)
0301	\$10.00	Survival Margin (New Era historical background information)
0302	\$46.00	Deluxe Traveller (basic rulebook and Fire, Fusion, & Steel, plus play aids)
0303	\$30.00	Brilliant Lances (starship combat boardgame and starship design rules)
0304	\$16.00	Fire, Fusion, & Steel (Traveller technical architecture sourcebook)
0305	\$14.00	Smash & Grab (adventure anthology—Star Viking Manual #2)
0306	\$ 8.00	Players' Forms (play aid)
0307	\$ 8.00	Referee's Screen (play aids and adventure)
0308	\$30.00	Battle Rider (fleet level starship combat boardgame)
0309	\$18.00	Path of Tears (sourcebook—Star Viking Manual #1)
0310	\$20.00	Reformation Coalition Equipment Guide (Star Viking Manual #3)
0311	\$14.00	World Tamers Handbook (sourcebook on world building and colonization)
0312	\$16.00	Vampire Fleets (sourcebook on Virus, robot design, intelligent machines)
0313	\$20.00	Striker II (ground combat miniatures rules)
0314	\$12.00	Keepers of the Flame (Regency Manual #1)
0315	\$13.00	Star Viking: Personalities of the Reformation Coalition (Star Viking Manual #4)
0316	\$17.00	Traveller: The New Era T-Shirt (large)
0317	\$17.00	Traveller: The New Era T-Shirt (extra-large)
0318	\$14.00	Aliens of the Rim I: Hivers and Ithklur (sourcebook)
0319	\$12.00	Reformation Coalition Players' Handbook (sourcebook) never published
0320	\$12.00	Regency Combat Vehicle Guide (Regency Manual #2)
0321	\$12.00	Regency Starship Guide (Regency Manual #3) never published
0380	\$ 5.95	Death of Wisdom (novel, part one of three)
0381	\$ 5.95	To Dream of Chaos (novel, part two of three)
0382	\$ 5.95	The Backwards Mask (novel, part three of three) Original
0383	\$ 5.95	The Backwards Mask (novel, part three of three) Alternate



www.DriveThruRPG.com
Title Downloads a la carte



www.FarFuture.net
Collections on CD-ROM