

FRONTIER EXPLORER



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LOOKING FOR SUBMISSIONS

Do you have material you'd like to see published in the Frontier Explorer? We accept submissions of any fan material for Star Frontiers, FrontierSpace, or any other sci-fi role-playing game whether it is new races, equipment, vehicles, setting material, play reports, or anything else.

If you have something you'd like to share, head on over to the [Frontier Explorer website](#) and hit the gold "Submit New Content" button. We'll help you get the material ready for publication and into a future issue of the magazine.

GETTING THE RULES & BACK ISSUES

The published rules and modules for Star Frontiers and FrontierSpace, as well as all back issues for the Frontier Explorer and the Star Frontiersman (including print-on-demand physical copies of the Frontier Explorer) are available for purchase or download on DriveThruRPG.

All the old issues of the fan magazines, as well as print-on-demand versions of the Frontier Explorer can be found at [the Frontier Explorer page](#). These products are offered as pay-what-you-want. You can grab them for free, but this provides a way for you to make a donation to help support the magazines if you so desire.

Wizards of the Coast offers the Star Frontiers rules and modules on their [Star Frontiers page](#).

FrontierSpace products can be found on the [DWD Studios page](#).

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LETTER FROM THE EDITOR

Hello Explorers!

Welcome to issue 31 of the Frontier Explorer! Not quite as many articles as last month but each are a bit longer this time around. In fact, I had so many articles originally queued for this issue that I ended up having to drop four of them and bump them to the next issue. Which means that issue 32 is already half full.

Our new author this month is Michael Lausier who is closing out this issue with a short story set in the Traveller universe. Short fiction was a regular staple here in the Frontier Explorer in many of the early issues and you can expect to see more in the future as one of our newer authors has expressed a desire to submit a series of short stories. But more on that in the next issue.

We start the issue with an archetype article about the dralasite strong being and follow that immediately with a description of ten standard sathar NPCs you can drop into your campaign, each statted out for the First and Second Sathar War period in the setting.

We have another article in the Things that Go Boom! series, this time looking at artillery, along with a pair of articles looking at Needler Weapons and a shotgun holdout pistol.

Joseph Cabadas takes a look at the old Dragon article "Jetboots Don't Fail Me Now" and revises and updates the alternate movement system presented there.

We round out the issue with a look at the Captive Planet choose-your-own-adventure book, a review of a dralasite-like mini, and our regular comics and Jurak Hangna article.

This has been a crazy three months for me and while I managed to get the magazine done on time, it was a close thing. In addition to the holidays, I changed jobs right as I was starting on the editing of the magazine. Which severely cut into my time to work on it.

On top of that, I got distracted by another magazine related project, namely creating print-on-demand versions of the old Star Frontiersman magazines. By the time you are reading this, the first six issue of the Star Frontiersman should be available for purchase on DriveThruRPG. You can find the issues of the Star Frontiersman by [following this link](#). Those first six were the easy ones. I plan on working

on the remaining nineteen issues over the course of the coming year. Hopefully by this time next year, they will all be available.

In community news, [the Star Frontiers: Alive and Well Facebook group](#) is, as I write this, just six members shy of a total of 3000 members. By the time you're reading this, we may have pushed over the 3000 mark as we gain 10-20 members a week. If you're not already a member (and have a Facebook account), click on the link above to join up.

Additionally, one of the players from the on-line game I ran last year, and one of our new authors, Oscar Rios, has started up a Star Frontiers actual play called Citizens of the Frontier. He is posting the sessions on YouTube and has a Patreon campaign if you want to support the project. You can find links to both in the ad on page 4.

Speaking of Patreon, I want to remind you of the magazine's Patreon campaign which can be found at <https://www.patreon.com/frontierexplorer>. If you like the magazine, consider supporting us there. You'll get the completed magazine a week early and, when I'm on top of things, some of the individual articles even earlier. I wasn't on top of things for this issue so none of the articles were finished early and sent out but Patreon supporters did receive the completed full issue before everyone else.

That's enough rambling from me. Sit back, settle in, and enjoy this issue of the Frontier Explorer. And as always, keep exploring.

- Tom Stephens
Senior Editor



THE DRALASITE STRONG BEING

ARCHETYPES

BY TOM VERREULT

This archetype is more of a background for a starting character who is about to start adventuring, simply because the “strong man” archetype doesn’t lend itself to an exciting RPG career. However, a strong, tough character that can fight can always find a job as an enforcer in the Frontier. Thus, this archetype is presented not as a career but as a background.

The Dralasite strongman is short, tough, and built like a brick wall. They come from variety/carnival acts, professional fighting athletes, and bouncers. They can take a punch and when they punch back, someone’s bell is getting rung. Due to their species ability score modifiers, dralasites have a +5 to the STR/STA ability pair which makes them on average some of the strongest characters in the game. A player can further modify the STR ability score by performing the allowed 10-point transfer within an ability pair moving 10 from STA to STR. If a maximum ability score was rolled at character creation it is possible for a dralasite to begin play with a STR of 75-85 points. There will simply be a lot of strong dralasites walking around and the dralasite strong man is a real archetype within the setting.

CHARACTER CONCEPTS

THE VARIETY ACT/ CARNIVAL STRONG BEING

These dralasites have been in the entertainment industry performing feats of strength or endurance. They have focused less on fighting skills in favor of developing STR, STA and DEX abilities. They have a good sense of timing and showmanship. They may be leaving the carnival gig looking for better pay or perhaps their show/act is simply going out of business. They can always put on a show doing feats of strength or dexterity as per whatever the player desires.

THE PROFESSIONAL SPORTS FIGHTER

These dralasites are athletes. They’ve been in the lowest levels of the fighting entertainment industry with some minimal success. Two thirds or more of their skills must be in martial arts. Note this may mean in that all of their starting skill levels are in martial arts. Thus, an Alpha Dawn starting character will have level 2 in martial arts and no other skills (other rules systems will shake out differently). They will also have developed their STR to maximize their Punching Score (PS) and their DEX to maximize the number of punches they can throw (1 punch to 1 arm and leg pair of limbs with maximum possible being 5).

They will have fought 1d10 bouts and for a variety of reasons will have decided to leave the profession. If a win/lose record is desired roll 1d5 wins and 1d5 loses. If the number of wins and losses total less than the result of the 1d10 for number of bouts, then the extra bouts are draws or disqualifications. If the number of bouts total to more than the result of the 1d10 for total number of bouts, then increase the number of bouts to equal that total.

The character may be changing their profession because they were paid to take a dive but did not. There is now a planet with a crime figure in the Frontier that this dralasite cannot visit lest this figure’s goons catch up with them to shake them down or kill them. Choose a planet with medium to high population. By way of

compensation the PC starts with up to 5000 Cr that they were paid to take the dive with. However, they’ve spent about half on getting away from that planet and on a new identity. (See the Paid But Didn’t Take The Dive flaw below.) The character can spend big for equipment or conserve money for a getaway if needed.

THE BOUNCER

These characters work the doors at clubs and bars. They were hired for their strength and toughness as well as their innate lie detection ability. Keeping a level head is important to this character but they are not afraid to deal with problems in a physical manner. They have at least one level of melee weapons (brass knuckles or blackjack) or martial arts skill. They can alternate between personable and intimidating and uses their PER ability to defuse situations so that a fight does not break out. At least 5 points must be transferred from LDR to PER at character creation with this character concept. They favor the civilian skeinsuit. They are never at a want for work as there is always a need for someone with this skill set. They will automatically start with two free skeinsuits from previous gigs, and if they have the melee weapon skill, they start with a free brass knuckles, club, or other appropriate weapon.

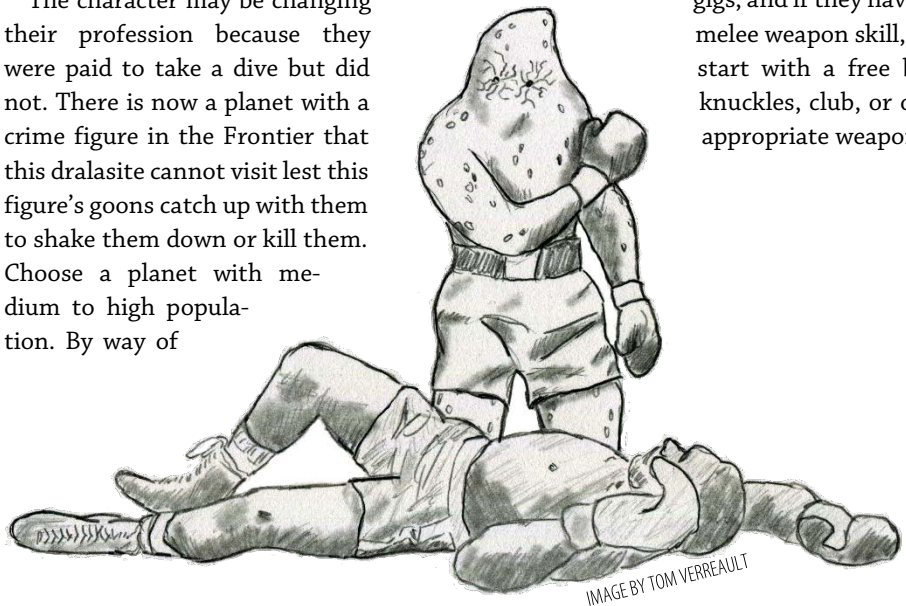


IMAGE BY TOM VERREULT

DEVELOPMENT

The primary ability score pairs are STR/STA and DEX/RS and these should be developed over the course of the campaign. STR impacts a character's Punching Score, STA determines how long a character can last in a combat, DEX impact how many punches a dralasite can throw and how well they are thrown and finally RS impacts who gets initiative. As was noted, the PER ability is important to the bouncer concept and a PC with that concept may wish to continue to develop that. Lie detection is important to the bouncer concept as well and deserves development also.

Martial arts skill is potentially more important for the nerve combat subskill than the melee weapons skill. There are 3 subskills for martial arts and none for melee weapons making martial arts more versatile to these characters.

EQUIPMENT

Now that the strong being has entered the adventuring profession, defenses are a primary importance to this type of fighter. They give them the chance to last in a combat till they can pummel their opponent. A skeinsuit is the minimum and, when money permits, a defensive screen. Because the character's strength is so high,

they can carry quite a lot of weight before the encumbrance rule kicks in so they may consider lugging heavy items for the group.

EDGES AND FLAWS

In keeping with the original archetype articles in the early issues of the Star Frontiersman I offer a sampling of edges and flaw to help differentiate these characters.

FLAW: GLASS JAW

A solid punch will knock the PC out or stun them. On a critical hit this character is knocked out for 1-100 combat rounds (stim dose revives), but with a STA save they are only stunned one round.

EDGE: SCRAPPY RESURGENCE

When the character is down, they are never out. When in a melee fight and down to 15 STA or less, this character can reach deep within and make a PER check for a +20 bonus for the remainder of the combat. This edge acts exactly like battle rage and if the character happens to be a yazirian, it does not stack with battle rage. In other words, the player CANNOT invoke both battle rage and scrappy resurgence for a +40. The game master is free to require the player to play a fight anthem from a movie like Rocky in order to invoke this edge.

EDGE: IMPECCABLE TIMING

The PC's sense of timing means that once per game session this character can roll an initiative roll twice and choose the better result.

FLAW: PAID BUT DIDN'T TAKE THE DIVE

For whatever reason, the PC just couldn't take the dive. Now there is a crime figure or bookie with animosity for this character. The player must pick a planet in the Frontier with a medium to heavy population level from the Alpha Dawn rule book and this is the planet they must avoid or else goons from this crime figure will catch up with him.

The money they received as payment was (roll 1d3):

- left for the crime figure – PC receives the normal starting money
- used to get away – 1d5 x 1000 Cr minus 1000 Cr and the remainder divided in half to simulate going on the run. If the final amount is zero, then use the normal amount of starting money
- blown living it up – PC receives the normal starting money

The character has paid for a new identity, but this may or may not stand up to scrutiny. A bounty hunter may eventually turn up looking for the character.



TEN STANDARD SATHAR

BY OSCAR RIOS

Oftentimes the most time-consuming part of any Game Master's preparation work is assigning the statistics and details of their players' opposition. While tedious, it is unfortunately an unavoidable step to preparing an adventure. This article attempts to take some of the sting out of that process, by providing ten standardized templates for one of the most popular adversaries in the Star Frontiers game – The Sathar.

To keep things simple, skills are listed using A Skilled Frontier, the article by Bill Logan in issue 9 of Star Frontiers magazine. Game Masters can easily use this as a guideline to convert the skills here to those of standard rule set or the resolution system from Zebulon's Guide to Frontier Space. In some cases, Game Masters are given a choice between multiple weapons or skills to pick from, to reflect specialized training or era of play (see below).

Weapons, defenses, and other items listed include items from Zebulon's Guide to Frontier Space. GM's should feel free to restrict this to ones available in the Alpha Dawn ruleset. They can, alternately, expand the selection even further to include newer items from Frontier Explorer and/or Star Frontiersman fanzines. Conversation notes for several weapons (The Raffler M2 pistol, M6 rifle and M8 sniper rifle, the Maser Penetrator pistol and Maser Razor carbine, as well as the Needler II carbine and Flamethrower) from the Zeb's Guide resolution system to the standard rule set are included at the end of the article.

SHIFTING MILITARY

DOCTRINE

Between the First and Second Sathar Wars, the Sathar fundamentally altered their overall military doctrine. While their main strategy still heavily favored their space forces, significant efforts were undertaken to improve their ground capabilities. These efforts delivered a strategic

advantage in the Second Sathar War during ground combat operations.

The main changes were greater emphasis on providing their troops with better protection (energy screens, suits, helmets, etc.) and a combined arms approach (mixing up the types of weapons individual soldiers carried) within squads. Gone were the days of their nearly total reliance on laser, sonic, and electric beam weaponry. Troops were now being equipped with more exotic beam weapons such as Proton, or Raffler, and microwave, or Maser, weapon systems. Even less technologically advanced arms were updated and deployed, such as automatic and gyrojet weapons.

During the dark years of the Second Sathar War, these efforts helped deliver major victories for the Sathar. They were instrumental in their capture and occupation of Circe and Kir-Kit, in the Solar Minor system. Most of the civilian populations were then rounded up and taken as both slaves and hostages to their heavy fortified forward operating base, the planet Outpost #1 (located between the Solar Major and Solar Minor). This forced the UPF to establish Landfleet, its first standing army, in order to retake Solar Minor and liberate its enslaved citizens on Outpost #1 without resorting to orbital bombardment. The vicious fighting on Outpost #1 took three years (from FY 88 to FY 90) and cost Landfleet 30% of its forces.

The combat gear for Sathar detailed below are listed with both the First (SWI) and Second (SWII) Sathar War doctrines regarding weapons, defenses, grenades, and equipment options.

THE 10 STANDARD SATHAR

The ten standard sathar templates presented in this article are:

1. **Conscripted Troops** – The lowest of the low.

2. **Rank & File Troops** – Common infantry.
3. **Support Personnel** – In the rear with the gear.
4. **Frontline Troops** – Battle hardened soldiers.
5. **Mechanized Troops** – Ready to roll out.
6. **Special Weapons Squad** – Heavy weapon and artillery teams.
7. **Assault Troops** – Elite units of highly trained professionals.
8. **Pilot** – Delivering death from above, be it skies or stars.
9. **Military Officer** – The worm in charge.
10. **Intelligence Officer** – They have ways of making you do more than talk.

TYPE 1: CONSCRIPTED TROOPS

Number: 6 - 18

STR/STA: 45 / 45

DEX/RS: 40 / 40

INT/LOG: 40 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Projectile Weapons-2 (40%), Thrown Weapons-1 (30%), Melee Weapons-1 (33%)

SWI Weapons: Laser rifle (KE-2000), one or two 20 SEU powerclips.

SWI Defenses: None.

SWI Grenades: None.

SWII Weapons: 50% as above, plus knife. 50% armed with automatic rifles, 2-3 maxiautomatic clips, knife.

SWII Defenses: Helmet (absorbs 15 STA points of damage), gasmask.

SWII Grenades: Fragmentation, tangler,

Equipment: Chronograph/communicator, compass, flashlight, holoflare, 3 days rations.

Squad Equipment: None.

Description: These troops are minimally trained, lightly armed, or poorly equipped. They are typically thrust into combat and used as combat fodder or assigned to non-essential duties. They are often found with an officer, whom is always a slightly different color and possesses different patterns of spots, speckles and stripes on the back of its head than the conscripted troops

under its command. The head patterns of conscripted troops are nearly always tattoos. The majority of these conscripted troops have tiny explosive implants in their brain, which detonate (instantly killing them) if they are at risk of being captured.

TYPE 2: RANK AND FILE TROOPS

Number: 4 - 12

STR/STA: 45 / 45

DEX/RS: 40 / 40

INT/LOG: 40 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-2 (40%), Thrown Weapons-1 (30%), Melee Weapons-1 (33%), Unarmed Combat/Martial Arts-1 (33%)

SWI Weapons: Laser rifle (KE-2000), three 20 SEU powerclips, knife.

SWI Defenses: Albedo screen with 50 SEU beltpack, gasmask.

SWI Grenades: Fragmentation, tangler.

SWII Weapons: 50% as above, plus vibroknife with one 20 SEU powerclip, 50% armed with raffle M-6 rifles, three 10 SEU mini power clips, plus vibroknife with one 20 SEU powerclip.

SWII Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), gasmask.

SWII Grenades: Fragmentation, tangler, smoke.

Equipment: Chronograph/communicator, compass, flashlight, holoflare, toxi-rad gauge, vitasalt pills, 5 days rations.

Squad Equipment: Radiophone, magnigoggles.

Description: This is the most commonly encountered Sathar on the battlefield. They have received the standard training regimen and are considered reliable enough to conduct operations or patrols without an officer present. These Sathar may have seen battle already, although their combat experience would still be limited. They are equipped with a standardized combat kit, which is in good repair.

TYPE 3: SUPPORT PERSONNEL

Number: 3 - 6

STR/STA: 45 / 45

DEX/RS: 45 / 40

INT/LOG: 45 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-2 (40%), Projectile Weapons-2 (43%), Melee Weapons-1 (33%); Medical-3 or Robotics-3 or Technician-3 or Computer-3 (Pick 2 - 53%)

SWI Weapons: Electrostunner, two 20 SEU powerclips.

SWI Defenses: Albedo screen, 50 SEU beltpack, skeinsuit, gasmask.

SWI Grenades: Doze, 2 tangler.

SWII Weapons: 50% as above, plus sonic knife with one 20 SEU powerclip. 50%

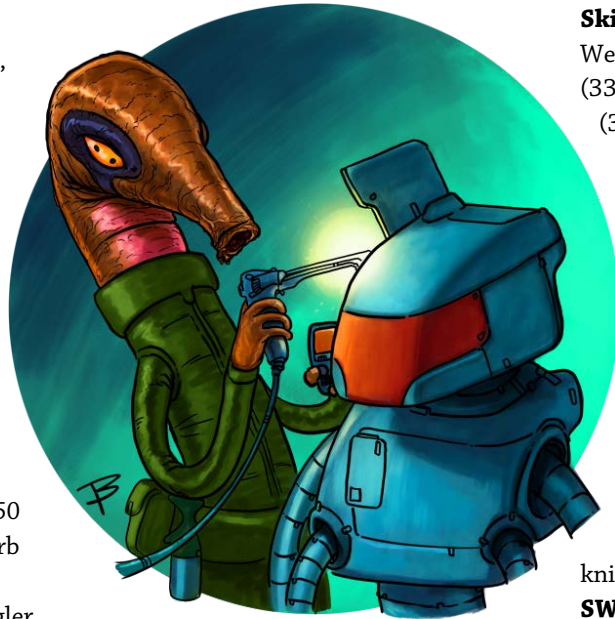


IMAGE BY JERRY BOUCHER

armed with needler type II carbines with four needler clips.

SWII Defenses: Albedo screen, 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), gasmask.

SWII Grenades: 2 tangler, 1 doze, 1 smoke.

Equipment: Chronograph/communicator, flashlight, holoflare, GM pick one or two of the following depending on unit training – robcomkit, techkit, or medkit.

Squad Equipment: Radiophone, magnigoggles, compass.

Description: These Sathar handle repairs and maintenance on robotic, weapon, vehicle maintenance, computer, and communications systems. They also provide

medical treatment for combat personnel, conduct scientific research, and perform clerical, logistics, janitorial, and commissary duties. They are mostly found operating with sathar bases, camps, and secured rear areas. Sometimes they are encountered on the front lines, attempting to repair and recover damaged military vehicles or combat robots, usually being defended by mainline combat units.

TYPE 4: FRONTLINE TROOPS

Number: 4 - 12

STR/STA: 45 / 50

DEX/RS: 45 / 40

INT/LOG: 40 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-2 (43%), Thrown Weapons-1(33%), Melee Weapons-1 (33%), Unarmed Combat/Martial Arts-1 (33%)

SWI Weapons: Laser rifle (KE-2000), laser pistol (KE-1000), five 20 SEU clips, knife.

SWI Defenses: Albedo screen with 50 SEU beltpack, gasmask.

SWI Grenades: Fragmentation, tangler,

SWII Weapons: 50% as above, knife upgraded to vibroknife with one 20 SEU powerclip. 50% armed with raffle M-6 rifle, maser penetrator, six 10 SEU mini power clips, sonic knife with one 20 SEU powerclip.

SWII Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), gasmask.

SWII Grenades: Flash, 2 fragmentation, smoke, tangler.

Equipment: Chronograph/communicator, compass, flashlight, holoflare, 5 days rations, toxi-rad gauge, water pack.

Squad Equipment: Radiophone, magnigoggles, infrared googles.

Description: The second most commonly encountered Sathar on the battlefield. These troops have more experience than their rank and file counterparts. They also have better weapons, defenses, and equipment. The key difference is combat experience, as these troops likely seasoned combat veterans. This experience gives them

an edge, as they are less likely to fall into an ambush and more likely to employ effective tactics during a firefight. Most of these troops speak Pan-Galactic and are familiar with the cultures and tactics of their enemies.

TYPE 5: MECHANIZED TROOPS

Number: 2 – 5

STR/STA: 45 / 45

DEX/RS: 45 / 45

INT/LOG: 40 / 45

PER/LDR: 55 / 55

IM: 5 **PS:** 3

Skills: Beam Weapons-2 (43%), Demolition-1 (33%), Thrown Weapons-1 (33%), Technician-3 (53%), Ground Vehicles-3 or Hover Vehicles-3 or Aquatic Vehicles-3 (Pick 2 - 53%).

SWI Weapons: Electrostunner, three 20 SEU clips.

SWI Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, gasmask.

SWI Grenades: 2 fragmentation, 2 smoke, tangler,

SWII Weapons: 50% as above.

50% armed with maser razer, six 10 SEU minipower clips.

SWII Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), solar visor, gasmask.

SWII Grenades: Flash, 2 fragmentation, 2 smoke, tangler

Equipment: Chronograph/communicator, compass, flashlight, holoflare, Techkit.

Squad Equipment: Radiophone, magnigoggles, infrared goggles, two 200 gram charges of TD-19 each with a variable timer/detonator (used to destroy disabled vehicles so they do not fall into enemy hands).

Description: These troops serve as the crews of military vehicles, such as armored ground, hover vehicles, and aquatic transports. They also act as support crews for aerial vehicles such as aircars and jetcopters, controlling weapons, navigation, and communication stations on these combat systems. Mechanized troops provide close air support, transport, and perform armored ground and sea assault missions against hardened enemy positions.

TYPE 6: SPECIAL WEAPONS SQUAD

Number: 3 - 6

STR/STA: 45 / 45

DEX/RS: 45 / 40

INT/LOG: 45 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-3 (43%), Projectile Weapons-3 (43%), Melee Weapons -1 (33%), Robotics-2 (53%), Technician-2 (53%), Computer-1 (43%)

SWI Weapons: Laser Pistol (KE-1000), two 20 SEU powerclips.

SWI Defenses: Albedo screen, 50 SEU beltclip, skeinsuit, gasmask.

SWI Grenades: Doze, 2 tangler.

SWII Weapons: 50% as above, plus sonic knife with one 20 SEU powerclip

50% armed with maser razor carbine with two 10 SEU mini powerclips, vibroknife with one 20 SEU powerclip.

SWII Defenses: Albedo screen, 50 SEU beltclip, skeinsuit, helmet (absorb 15 points of damage), solar visor, gasmask.

SWII Grenades: Doze, tangler, smoke.

Equipment: Chronograph/communicator, flashlight, holoflare, techkit, rob-comkit (only if unit supports Sathar Attack Monster).

Squad Equipment: Radiophone, magnigoggles, compass, light vehicle (ground or hovercar).

Special Weapon (pick one): Sathar attack monster (GM's choice), or heavy laser (KE-5000) with three 100 SEU backpacks, or sonic disrupter with three 100 SEU backpacks, or machine gun with three 200 round belts, or recoilless rifle with 10 shells, or a grenade mortar with 6 fragmentation grenades, 4 smoke grenades, and 4 incendiary grenades.

Description: These Sathar are located just behind the front lines, supporting forward positions with heavy weapons, artillery, or Sathar attack monsters (such as Slavebots, Quickdeaths, Cybodragons, or Slithers). They tend to be mobile, quickly moving from one hot-spot to another. They often employing a light vehicle to tow their weapon systems, or in the case of a Sathar attack monster, a specialized pen. These Sathar are trained to make field repairs on their weapon systems and light vehicles.

TYPE 7: ASSAULT TROOPS

Number: 4 – 8

STR/STA: 50 / 50

DEX/RS: 45 / 40

INT/LOG: 40 / 40

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-4 (63%), Gyrojet Weapons-2 (43%), Projectile Weapons-2 (43%), Thrown Weapons-2 (43%), Melee Weapons-2 (45%), Unarmed Combat/Martial Arts-1 (35%), Demolition-3 (50%).

SWI Weapons: Laser Rifle (KE-2000) with knife mount and magni-scope, five 20 SEU clips, gyrojet pistol with flash muzzle, 5 gyrojet clips, knife.

SWI Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), gasmask.

SWI Grenades: 2 incendiary, 4 fragmentation, 2 smoke.

SWII Weapons: 50% as above, knife upgraded to vibroknife with one 20 SEU powerclip.



IMAGE BY JERRY DOUCHER

50% armed with sonic disrupter with knife mount and magni-scope, five 20 SEU powerclips, automatic pistol with flash muzzle, 5 automatic maxi-clips, vibroknife with one 20 SEU powerclip.

SWII Defenses: Gridsuit, inertia screen with 50 SEU beltpack, helmet (absorb 15 points of damage), infrared visor, sonic headphones, gasmask.

SWII Grenades: 2 fragmentation, 2 smoke, 2 incendiary, 2 flash, 2 poison.

Equipment: Chronograph/communicator, compass, flashlight, holoflare, 5 days rations, toxi-rad gauge, waterpack, 100m rope.

Squad Equipment: Radiophone, magnigoggles, one 200 gram charges of TD-19 with a radio detonator, one 200 gram charges of TD-20 with a variable timer/detonator, raffle M-8 rifle (dedicated squad sniper weapon) with four 10 SEU minipower clips, flame thrower with 20 shot backpack (dedicated close assault weapon).

Description: These well-armed, highly trained, and aggressive troops usually operate in small highly mobile teams. Most are recruited out of the ranks of rank and file troops after they have proven themselves in battle, having to earn their way into such elite units. They are skilled in the use of explosives, in order to take down high value enemy assets or breach hardened facilities. These teams are often transported in and out of combat in support vehicles.

TYPE 8: PILOT

Number: 1

STR/STA: 45 / 45

DEX/RS: 50 / 50

INT/LOG: 45 / 40

PER/LDR: 55 / 55

IM: 5 **PS:** 3

Skills: Beam Weapons-3 (55%), Stealth-2 (45%), Survival-3 (53%), Navigation-2 (43%), Technician-2 (43%), Theivery-2 (43%), Air Vehicle-4 or System Vehicles-4 or Space Vehicles-4 (Pick 2 – 65%).

SWI Weapons: Electro-stunner, three 20 SEU clips.

SWI Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, gasmask.

SWI Grenades: 2 fragmentation, 2 smoke, tangler.

SWII Weapons: Maser penetrator, six 10 SEU mini powerclips.

SWII Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, helmet (absorb 15 points of damage), solar visor, gasmask.

SWII Grenades: Flash, 2 fragmentation, 4 smoke, tangler.

Equipment: Chronograph/communicator, compass, flashlight, holoflare, infrared goggles, magnigoggles, radiophone or subspace radio, techkit, two 200 gram charges of TD-19 each with a variable timer/detonator (used to destroy disabled vehicles so they don't fall into enemy hands).

Description: Often encountered alone after an aerial vehicle or small starship has been downed, these highly trained Sathar are lightly armed but well equipped. They are adept at outdoor survival and evasion, allowing them to avoid capture for long periods of time. When found, they are typically attempting to rejoin other Sathar units. They are trained in piloting enemy vehicles and defeating security measures, so they often attempt to steal any sort of aircraft, shuttle, or spacecraft they encounter.

TYPE 9: MILITARY OFFICER

Number: 1

STR/STA: 45 / 50

DEX/RS: 45 / 40

INT/LOG: 50 / 45

PER/LDR: 50 / 50

IM: 4 **PS:** 3

Skills: Beam Weapons-4 (63%), Projectile Weapons-2 (43%), Melee Weapons-2 (43%), Unarmed Combat/Martial Arts-2 (43%), Navigation-2 (43%), Survival-2 (45%).

SWI Weapons: Laser pistol, sonic sword, three 20 SEU powerclips.

SWI Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, gasmask.

SWI Grenades: none.

SWII Weapons: Raffle M2 pistol, three 10 SEU mini powerclips, electric sword, one 20 SEU powerclip.

SWII Defenses: Inertia screen with 50 SEU beltpack, gridsuit, helmet (absorb 15 points of damage), sonic headphones, solar visor, gasmask.

SWII Grenades: none.

Equipment: Chronograph/communicator, compass, flashlight, holoflare, infrared goggles, magnigoggles, radiophone, subspace radio, one or more light ground and/or aerial vehicles for them and their staff.

Description: Most typically found leading groups of lower ranking troops, these Sathar are highly trained, well-motivated, and equipped with the best gear available. They've usually defended by a personal guard made up of frontline troops in addition the soldiers under their command. Their full command could be anywhere from a few dozens to a few thousand Sathar, depending on the theatre of operation.

TYPE 10: INTELLIGENCE OFFICER

Number: 1

STR/STA: 45 / 45

DEX/RS: 40 / 40

INT/LOG: 50 / 50

PER/LDR: 55 / 55

IM: 4 **PS:** 3

Skills: Beam Weapons-4 (63%), Projectile Weapons-2 (43%), Melee Weapons-3 (53%), Medical-2 (45%), Stealth-2 (40%), Persuade-2 (45%), Theivery-2 (45%), Detective-3 (55%).

SWI Weapons: Electro-stunner, three 20 SEU clips, needler pistol, one anesthetic needler clip, stun stick with one 20 SEU powerclip.

SWI Defenses: Albedo screen with 50 SEU beltpack, skeinsuit, gasmask.

SWI Grenades: 2 fragmentation, 2 smoke, tangler

SWII Weapons: Electro-stunner, three 20 SEU clips, automatic pistol with silencer, two 30 round maxiautomatic clips, sonic knife with 1 20 SEU powerclip.

SWII Defenses: Inertia screen with 50 SEU beltpack, gridsuit, helmet (absorb 15 points of damage), sonic headphones, solar visor, gasmask.

SWII Grenades: 2 doze, 2 flash 4 smoke, 2 tangler.

Equipment: Chronograph/communicator, compass, flashlight, infrared goggles, magnigoggles, medikit, radiophone, sub-space radio, toxi-rad gauge.

Description: These Sathar typically work alone, accompanied by a company of assault troops as a personal guard. They are very highly trained in tactics, interrogation, covert operations, Sathar hypnosis (typically at 60%), and psychological warfare. While lightly armed they are usually well defended and always implanted with a suicide device (typically an explosive one) to avoid capture. They are most often found near the frontlines or manning listening posts. One of their most vital duties are recruiting and coordinating Sathar agents inside frontier space.

ZEBULON'S GUIDE CONVERTED WEAPON SYSTEMS

The table at the bottom of the page provides the Alpha Dawn statistics for the following weapons converted from Zeublon's Guide to Frontier Space:

- Raffler M-2 Proton Pistol
- Raffler M-6 Proton Rifle
- Raffler M-8 Proton Sniper Rifle
- Maser Penetrator Microwave Pistol
- Maser Razer Microwave Carbine
- Needler II (Carbine)
- Flamethrower

FLASH GRENADE

Causes a loud boom, a bright flash, granting attackers automatic surprise (target automatically loses initiative for the first turn of combat and can do nothing that turn but move and take cover). A solar visor is an effective defense against this.

TD-20

A modified form of the more common plastic explosive TD-19. It does the same damage as TD-19, but explodes only in one



direction and caused twice as much damage to structures. It is used for breach entry into a secure area for combat assaults.

MAXIAUTO CLIPS

An elongated clip of automatic ammunition holding a total of 30 rounds.

FLASH MUZZLE

An attachment that eliminates the flare from automatic and gyrojet weapons when fired, making them harder to spot in combat.

MAGNISCOPE

A more powerful version of the telescopic sight, magniscopes allow a shooter to fire at their weapon's medium, long and extreme ranges with greater accuracy. The range penalties are reduced by two places as opposed to one, making medium range have no penalty, long range have -10% penalty, and extreme have a -20% penalty. However, magniscopes cannot be used at ranges less than medium. Also, Sathar magniscopes are designed for their optics and cannot be employed by any other race (except, of course, S'ssessu).

KNIFE MOUNT

Allows a knife type weapon to be mounted on the barrel of a rifle. Damage remains the same but all melee attacks are made with a +10 bonus.

GRIDSUIT

A highly advanced and expensive defensive suit which filters out 30 points of damage from energy attacks (laser, raffle, maser, and electrical). Any damage exceeding 30 points is inflicted to the wearer. The suit is destroyed when it receives a total of 100 points of damage from projectile attacks (automatic, needler, gyrojet, etc.).

SOLAR VISOR

A visor with a layer of polarized material which instantly darkens when brilliant light appears. This is an effective defense against flash grenade attacks.

SONIC HEADPHONES

Used only with helmets, these headphones shield the wearer from low level sonic attacks, reducing the damage suffered by 50%.

WEAPON	DAMAGE	AMMO	SEU USE	RATE	PB	SHORT	MEDIUM	LONG	EXTREME
Raffler M-2 Proton Pistol	3d10	10 SEU Clip	2	2	0-5	6-15	16-35	36-70	71-150
Raffler M-6 Proton Rifle	4d10		2	2	0-9	10=35	26-75	76-180	180-375
Raffler M-8 Proton Sniper Rifle	4d10		2	2	15-50	51-100	100-250	250-375	376-500
Maser Penetrator Microwave Pistol	3d10		2	1	0-5	6-20	21-60	61-90	91-125
Maser Razer Microwave Carbine	4d10		2	1	0-5	6-20	21-50	51-100	101-150
Needler II (Carbine)	2d10/*	10 shot clip	--	3	0-8	9-18	19-36	37-63	64-125
Flamethrower	4d10**	10 shot tank	--	1/2	0-5	6-20	21-50	51-100	100-150

* 1d10 damage for anesthetic ammunition

** sets target on fire and inflicts 1-5 (1D10/2) each round after initial attack until extinguished

THE CANON ACCORDING TO CAPTIVE PLANET

HARMONIZING CAPTIVE PLANET WITH THE STAR FRONTIERS SETTING

BY TOM VERREULT

“Captive Planet” is an Endless Quest book by Morris Simon published by TSR in 1984. The Endless Quest books were targeted at the pre-teen market. The books set in the Star Frontiers setting were notorious for not adhering to established setting details and are often problematic because of the technology, new setting details or story details introduced by the authors. The easiest remedy is to treat them as the scripts to action-adventure holodramas filmed by Star Play Enterprises within the setting for the juvenile market. Weird or outrageously contradictory details can then be treated as creative license by the screen writers.

What follows is my gleaning of setting details that I think may be worth endorsing as canon material. Like all other material published in the Dragon, Ares, and Polyhedron magazines, this material should be considered optional although it probably should hold canonical weight greater than Zebulon’s Guide which was a half-rushed 2nd edition of the game intended by

Kim Eastland to take it in a Gamma World direction.

OF VRUSK AND DRALASITES

It would seem that de-oxygenated dralasite blood is purple-ish. This is a small detail and mirrors the detail of humans turning blue when unable to get oxygen. One might refer to a dralasite as turning purple with hypoxia.

Vrusk, we learn, have a habit of chopping the air with their mandibles when they are deep in thought and their shells glow when they are enraged. I would not interpret this glowing to be like a light source but on the level of when we refer to a pregnant woman as glowing otherwise this glowing will give away a vrusk’s position in the dark unless they exercise extreme emotional control.

Finally, there is the cliché of the “smart vrusk”. Vrusk are portrayed in “Captive Planet” as being smart and technical and in another Endless Quest book, “Villains of Volturnus” one of the supporting characters is a vrusk mentor/instructor. This idea of vrusk being smart is not reflected in their species ability score modifiers but rather seems to be a cultural convention in Frontier society. It’s a nice touch and could encourage more use of the vrusk in game. Perhaps its somehow linked to their species ability of comprehension.

OF YAST AND HENTZ

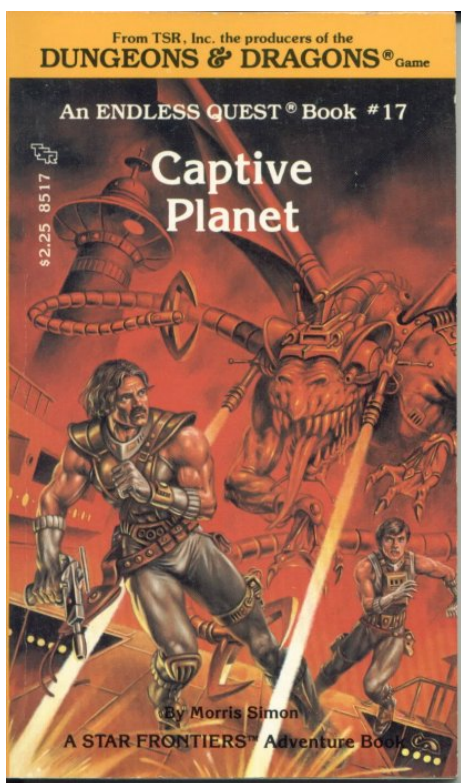
Yast has a large “terrible” flying creature called a fire dragon that flies. Despite the fact that the cybdragon of the sathar is flightless, the flying fire dragon of Yast is portrayed as the source of the sathar cybdragon. This would create a problem in that the sathar would have to have visited Yast before the First Sathar War. The Yast fire dragon can be kept as a real creature within the setting and native to Yast,

but its use as a cybdragon is pure creative license by Star Play.

In the story, war was narrowly avoided by the hero when one of his yazirian companions pushed a yazirian priest into a sacred pool. This fictional war almost ended a “Galactic Peace treaty” which I would interpret to be the founding documents of the UPF since if a war breaks out between member planets, that would effectively break the confederation that the UPF government is described as being. Many sources of fan material portray friction between the planets Hentz and Yast so the potential for war between the two yazirian colonies is very appropriate. The event in Captive Planet is fictitious but sacred pools are possibly an important feature of the Family of One religion.

OF PRENGULAR AND PGC HEADQUARTERS

The Computer Institute is sponsored by the Pan Galactic Corporation, located in the PGC building, and invites the brightest



youth from across the Frontier to study there. It is a prestigious school teaching computer technology with the official name of The PGC Computer Institute. The dean of the Computer Institute is a vrusk known as Luxtar but the vrusk spelling of that name is probably L'xt'r in the Pan Galactic trade language.

The top floors of the PGC building is a communication center that maintains subspace radio links with most of the planets of the Frontier.

OF NEW PALE

New Pale is a PGC colony and research station. The capitol is Truane City. This is interesting in that the star in this system is named Truane's Star and the other inhabited planet is Pale. It implies that an explorer named Truane discovered and named the system. Pale was founded as a colony and when it came time to found New Pale, either Truane was still active as an explorer and he named the city, or the capitol city was named in his honor.

Truane City is run by a level 6th robotic brain that manages almost everything on the planet from city operations to the agriculture. It is housed in the security center

at the center of Truane City. There is also an entertainment center near the center of town.

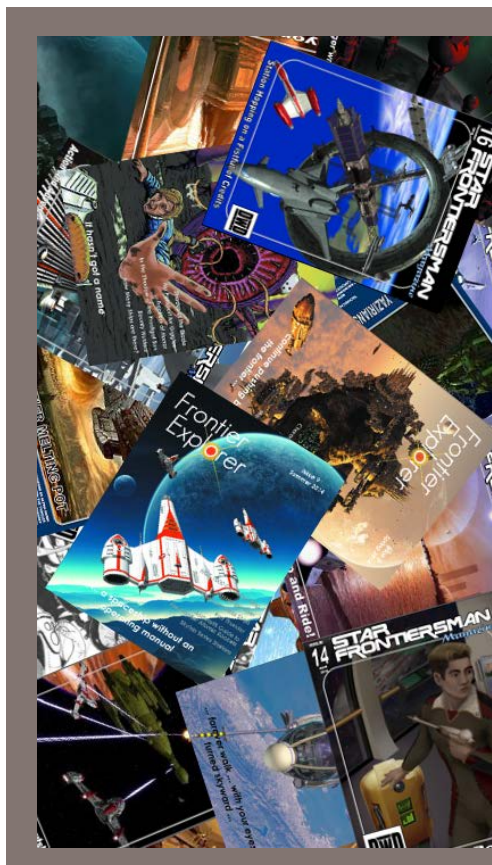
The principal crop is mannakan which is a major export that is significant in feeding the whole Frontier. I would treat this as a food crop that is digestible by all four of the core members of Frontier society: humans, vrusk, dralasites, and yazirians as an explanation for its importance. Large heavy-duty harvester robots are used to bring in the mannakan crop. Despite what the story says, they do not blow up with the power of a nuke when their power source is hit by a laser.

Agricultural outposts are scattered around New Pale and have Greek alphabet designations like Alpha, Beta, Gamma, etc. These far-flung outposts are most easily accessed by air. Many will have probably developed nicknames despite the official corporate designation of a Greek letter.

PGC starships arrive every 3 days for a load of mannakan. This implies a substantial starport at the capitol with many shuttles in operation for ships that cannot land to take on food. PGC has also installed an air defense to defend against space-based attacks. I would imagine it as a

combination of a big guns (laser cannon) and ICM missiles with the ICMs not having an inexhaustible supply.

Soccer is the popular sport on New Pale.



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THINGS THAT GO BOOM!

PART 9 – THE KING OF BATTLE, USING ARTILLERY IN STAR FRONTIERS

BY JOSEPH CABADAS

“As you arrive at the left flank, the Mechanon forces are about to be heavily attacked all along the line. A strange new Sathar automatic cannon is wreaking horrible damage among the Mechanons. This gun must be destroyed, or the Kurabanda air troops will never be able to join the battle; the cannon would massacre them in the air.”

—Starspawn of Voltornus

Nicknamed the “King of Battle,” artillery has often played a decisive factor in war through the centuries.

From ancient times, siege engines such as the ballista (basically a large, Roman crossbow), catapults, and trebuchets were used to smash the gates and walls of cities and other fortifications. Defenders could similarly use these weapons to repel attackers.

With the advent of gunpowder, cannons came into use by the 13th century, yet they were often inaccurate and even dangerous to the gun crews.

In the Star Frontiers setting, one of the artillery weapons that were presented is the sathar automatic cannon from the Voltornus. The “Tanks a Lot!” article by Alex Curylo in issue 99 of Dragon Magazine offered additional cannons and a howitzer. Larry Moore had updated the vehicle combat rules in issue 15 of Star Frontiersman magazine and introduced a few other weapons.

These rules never tackled the concepts of indirect fire, time on target (coordinating the fire from many weapons so the rounds land at the same time), or even an abstract idea of how long it takes an artillery shell to travel from its firing location to a distant target. What follows are some suggested rules including: introducing the Artillery weapons skill, using spotters, and how to handle counter-battery and anti-aircraft missions.

NEW SKILL: ARTILLERY

Most characters will not be able to use artillery weapons without the specialized

Weapons: Artillery skill. An artillerist can fire a weapon directly at a target if he can see it. If he is firing the weapon at a target he cannot see, the artillerist uses indirect fire and will usually need a forward observer (i.e. spotter). The spotter could be a player character, a robot or drone, an aircraft, radar information, or some other remote sensors.

The artillery crew could even be shooting from a set location to a known target area with a pre-calculated distance. Otherwise, firing such a weapon blindly is almost guaranteed to miss.

Note: The article “Tanks again!” in the November 1985 issue of Dragon magazine had a different way of handling the use of artillery weapons. According to writer Curylo, “Cannons and howitzers use Projectile Weapons skill; if either is used as an indirect fire weapon, use the new Military skill of Indirect Fire. (This skill could also be used to fire mortars, rifle grenades, and other indirect-firing weapons.)”

The “Tanks again!” article also provided information on direct versus indirect fire by saying: “The ranges given on the charts for cannons and howitzers are both for indirect fire. Both weapons can also be used in the direct-fire role; a cannon has the range of a vehicle rocket launcher, and a howitzer has the range of a vehicle recoilless rifle.”

WEAPONS: ARTILLERY

Type: Military PSA/Enforcer

Success Rate: ½ LOG + 10% per level

Prerequisite Skills: Alpha Dawn: None; Zebulon: Mathematics 1.

A military specialist with this skill is capable of firing artillery-like weapons including mortars, cannons, howitzers, field guns, artillery rockets, and the like. This character has the know-how to maintain such equipment, handle ammunition, and can act as a forward observer. The character can also use recoilless rifles, grenade mortars, and grenade rifles. Outside of a few specialized planetary militia units, the UPF Landfleet, or a mercenary outfit, this skill is uncommon.

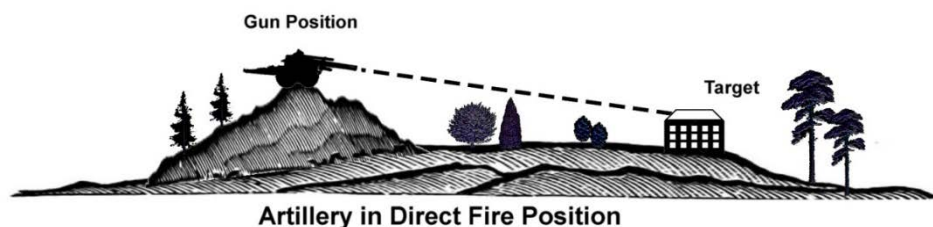
Unlike most weapon skills that are based on a character’s Dexterity or Strength scores, artillery uses the Logic (LOG) score. Even if the first few shots miss a target, for each turn that a forward observer provides information, the artillerist can add +5 percent to his success rate to a maximum of +20 percent bonus.

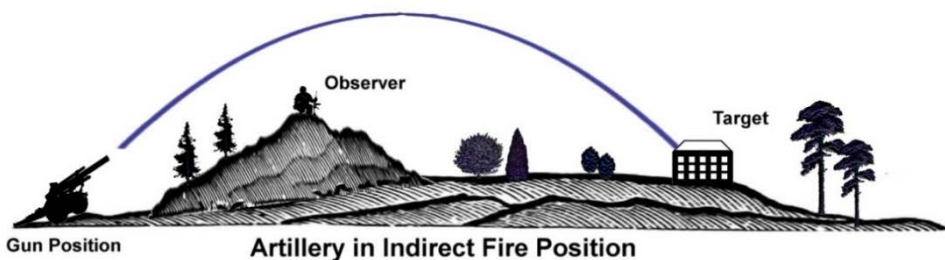
Heavy Weapon Modifier. Remember attackers using artillery weapons have a -10 percent penalty when shooting.

DIRECT FIRE

As with the use of lasers, gyrojet, projectile, and sprayer weapons, an artillerist who has a line-of-sight to his target can fire directly at it. To direct fire a weapon accurately, it should have a sighting device and the firer needs an unobstructed view of the target.

Opponents are easily able to fire back at an artillery unit that utilizes a direct fire attacks. If there is intervening terrain, buildings, or other units in the way, the attacker must use indirect fire.





INDIRECT FIRE

Indirect fire is the preferred way that artillery units operate. Targets are out of the line-of-sight of the weapon and munitions are fired on a ballistic trajectory. Shots are normally directed by a forward observer. Artillery can then shoot over obstacles and friendly units while being concealed from direct fire attacks.

However, artillery units are vulnerable to enemy artillery counter-battery fire.

Game use. In addition to the -10 percent modifier for heavy weapons, the artilleryist receives an initial -10 percent penalty for using indirect fire. Each turn that a spotter/forward observer provides information, the artilleryist can add +5 percent to his success rate to a maximum of +20 percent bonus. This adjustment of fire is called registering.

SPOTTERS

A forward observer is critical when it comes to directing indirect artillery fire. This observer can be an aircraft, a satellite, a robot, a remote sensing device, a drone, or a person. The spotter's job is to provide real-time information to artillery units so they can hit their targets.

Remote sensors can also act as spotters. For example, a seismic sensor post could detect enemy troop movements and opposing artillery fire and can be used to triangulate on an area. In game use, characters using such a remote system to target artillery fire receive an additional -5 to -15 percent penalty modifier; the modifier varies depending upon the

sophistication of the remote sensors being used (referee's discretion).

As the spotter provides more information, the artilleryist can add +5 percent to his success rate to a maximum of +20 percent bonus.

HANDLING MISSES

When an artillery shell or mortar round misses, it will land somewhere, possibly still close enough to the target to cause damage or inadvertently hit something – or someone – that the attacker did not mean to destroy. In the event of a miss, use the Ranged/Dropped Weapon Miss Chart.

The asterisk represents the target and the arrow represents the direction the artillery weapon was firing from. The distance by which a shell misses is dependent upon the range.

EXAMPLE, Gil Renner fires a grenade mortar at a pirate encampment from a distance of 345 meters, which is medium range for the weapon. Renner's shot misses. Consulting the Ranged/Dropped Weapon Miss Chart, since he is firing from medium range, the shot misses by $1d10 = 6 \times 8 = 48m$. Rolling a $d10$ for direction, he gets a 9 so it falls short and to the left of the target.

In the event of a miss, use the Ranged/Dropped Weapon Miss Chart. Roll

the dice indicated and multiply it by the number provided to determine how far off target the artillery shell lands.

DEFENSES FROM ARTILLERY ATTACKS

Characters caught in the open during an artillery attack are particularly vulnerable to injury or death. Going prone on the ground should be treated as having hard cover and it will cut the damage/effects of explosive, stun/sonic, and tangle attacks by 75 percent unless the attacker has rolled an automatic hit. Prone characters in the secondary blast radius receive no damage. (Or the referee could opt to roll on the Secondary Blast Area Resolution Table on the next page)

Going prone does not protect against gas attacks, but it will mitigate the effects of foam, electrical discharge, field crusher, and incendiary warheads.

BLAST RADIUS AND MINIMUM SAFE DISTANCE

"Any time artillery is used within 600 meters of a friendly force, it qualifies as 'Danger Close.' This term tells the cannons that friendly units are nearby so they can be extra cautious," according to St. John's University ROTC Department of Military Science.

Explosive weapons in Star Frontiers have a defined blast radius for game purposes. For example, most grenades have an immediate blast radius of three meters. However, the larger warheads found in

MISS CHART	
RANGE OF ARTILLERY	MISS DISTANCE
Point Blank	1d5x5 m
Short	1d10x6 m
Medium	1d10x8 m
Long	2d10x10 m
Extreme	3d10x10 m

Ranged/Dropped Weapon Miss Chart

2,3	4	5	1	2,3	4	10	1	2,3
1	*	6	10	*	5	9	*	4
10	9	7,8	9	7,8	6	7,8	6	5

Direction of Firing/Drop
(* is intended target square)

larger mortar and artillery shells may have a secondary blast area. This secondary blast area is equal to 1.5 times the radius of the immediate blast area; round any fractions up to the nearest whole number.

For example, if the immediate blast area of an explosive shell has a radius of 10 meters, the secondary blast radius extends out another 5 meters to 15 meters from the blast point.

IMMEDIATE BLAST AREA

Characters within the primary blast radius can take concussive damage, where they will be knocked down and stunned for 3d10 turns, but are also injured by fragments. If a shell has a “damage additive” and/or a “damage multiplier” – see below – it is only applied to targets within the immediate blast area.

For example, the small cannon round will do 12d10 points of damage with an immediate blast radius of 5 meters. The shell’s secondary blast radius extends from 5-8 meters.

Saving throws can be made to reduce damage. Characters within an enclosed armored vehicle may be unaffected by an explosion outside of the vehicle.

SECONDARY BLAST AREA

Anyone within the secondary blast area will take moderate to light damage and can be stunned for 1d10-2d10 turns – see the “Secondary Blast Area Resolution Table.” Moderate damage is anything from

SECONDARY BLAST AREA RESOLUTION TABLE		
ROLL	NORMAL RESULT	SAVING THROW RESULT
1	No Damage	No Damage
2-3	Light Dmg, 1d5 - Stun 1d5 turns	No Damage
4-6	Light Dmg, 1d10 - Stun 1d10 turns	No Damage
7-8	Moderate Dmg, 1d10+5 - Stun 1d10+5 turns	Light Dmg, 1d5 - Stun 1d5 turns
9-10	Moderate Dmg, 2d10 - Stun 2d10 turns	Light Dmg, 1d10 - Stun 1d10 turns

1d10+5 to 2d10 points. Light damage is 1d5 to 1d10 points.

Characters in the secondary blast area can make a Reaction Speed check to dive for cover/go prone on the ground. They may avoid damage or reduce its effects, see the Secondary Blast Area Resolution Table for effects. Disregard any blast additive or blast multiplier damage; it does not apply to targets within the secondary area. Characters within enclosed, armored vehicles will avoid damage altogether.

DAMAGE ADDITIVES AND DAMAGE MULTIPLIERS

Earlier editions of the “Things that go boom!” series, notably Parts 7 and 8 (issue 29) provided more information on the concepts of damage additives and damage multipliers for bombs. For example, the howitzer presented in Dragon magazine would do 75d10 points of damage. This was altered to $(5d10 \times 10) + 50$ points in this work.

The “x 10” is the damage multiplier. So, when the howitzer – now called the “small howitzer” – hits a target, roll 5d10 and

multiply the result by 10. Then add 50 points to the result. The “+50” is a damage additive and is **only** applied to targets within the primary blast area, which is 16 meters. The amount of damage from the howitzer would range from 100-550 stamina or structure points.

VEHICLE DAMAGE MODIFIER (VDM)

In Star Frontiers vehicle combat, whenever a vehicle is struck by gunfire, an exploding grenade, and the like, the character rolls a 2d10 and checks the “Vehicle Damage Table.” The number of dice of damage caused is added to the result as a modifier. Since they player is not necessarily rolling large numbers of dice, a vehicle damage modifier has been added to the descriptions of the bombs.

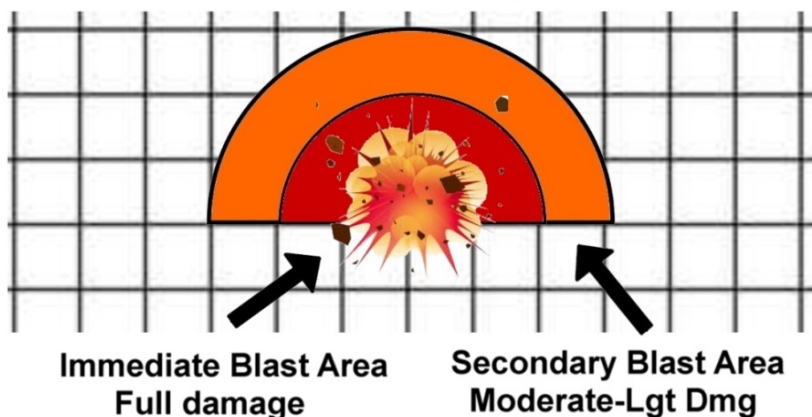
STRUCTURE POINT DAMAGE TO VEHICLES AND BUILDINGS

Stamina (STA) points are used to record wounds to characters and animals plus damage to robots and other small equipment. Structure points (SP) represent the damage sustained to various walls, doors, computers, and even vehicles. Please refer to Parts 7 and 8 of the “Things that go boom!” series in issue 29 of Frontier Explorer magazine for a more complete discussion of these subjects.

TIME ON TARGET (TOT) ATTACKS

It was long discovered during the ancient wars of the Humans, Yazarians, and Vrusk that most casualties in an artillery bombardment occur within the first few seconds when troops are in the open. Once the initial rounds hit, soldiers go prone on the ground or take cover. This dramatically

Immediate and Secondary Blast Areas Damage Table



reduces deaths and injuries due to shrapnel or high-explosive blasts.

As a result, during an initial artillery barrage, units learned how to fire their weapons in an order so that all their shells would hit a target at the same time and inflict the most damage possible.

Mortars, small, medium, and large cannons, howitzers, and other field artillery pieces can perform TOT attacks. These units fire multiple shots at different trajectories, speeds and timing so they will arrive at the target area at about the same time.

TOT USAGE

TOT attacks are normally performed by artillery units during the initial bombardment. In order to use such a strike, the target must be at least Medium Range to Extreme Range. Thus, if the target is at short range or less, the unit cannot use this assault.

TOT ATTACK CHART				
WEAPON TYPE	RATE OF FIRE	MEDIUM SHOTS/TURNS	LONG SHOTS/TURNS	EXTREME SHOTS/TURNS
Grenade Mortar	One-half	2/2	2/2	3/6
Cannon, Small	One-half	N/A	2/2	3/6
Cannon, Med.	One-half	2/2	2/2	3/6
Cannon, Large	One-half	2/2	3/6	4/8
Howitzer	One-fourth	2/4	4/16	6/24

The player (or referee) must declare that he is using a TOT attack. The number of shots that a single weapon can fire will depend on the range and the weapon's rate of fire – see the TOT Attack Chart. Then, write down the locations on the map that the shells are aimed at. The munitions will all arrive on the same turn after the last one is fired.

Grenade mortars, small, medium and large cannons have a rate of fire (ROF) of one shot every two turns (1/2), but they have vastly different ranges. The howitzer

has a rate of fire of one shell every four turns (1/4), but a maximum range of 15 kilometers or seven-and-half times the maximum range of the small cannon. Refer to the TOT Attack Chart to determine how many shots a weapon can fire at medium, long and extreme ranges and how many turns it will take to fire the last round.

For example, the howitzer has a ROF of one-fourth (1/4). It can fire two TOT shots at medium range (200-3,000 meters), but it will take four turns before the last round leaves the barrel of the gun. At long range (3,001-7,000 meters) the howitzer can fire four TOT shots but it will take 16 turns for the last round to leave the barrel; at extreme range, it can fire six TOT shots over 24 turns.

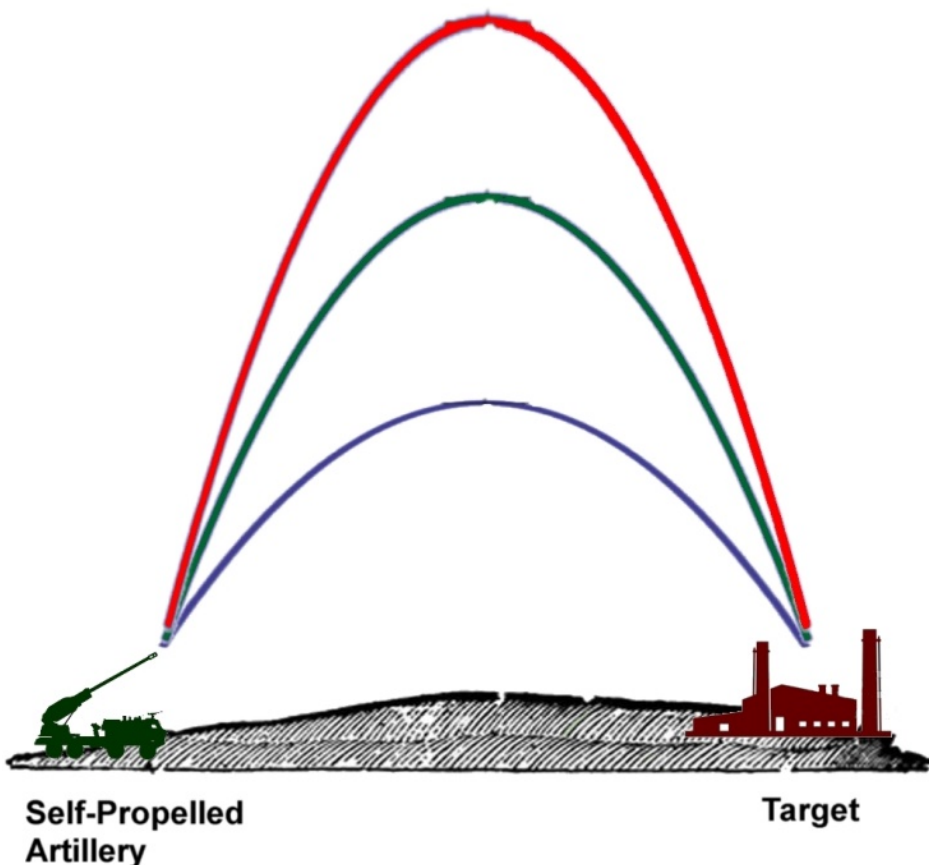
HOW LONG BEFORE AN ARTILLERY SHELL HITS?

A number of factors come into play in the modern world to determine how long it takes for an artillery shell to reach its target from the gun that fired it. Such factors in Star Frontiers would include gun speed, the angle, planetary atmosphere, and gravity.

For game purposes, assume that all artillery shells hit a target that it takes 1 second for an artillery shell to travel 1 kilometer. So, if the target is 6 kilometers or less from the gun, it will be hit the same turn the round was fired unless the artillery unit is using a Time on Target attack. For every 6,000 meters of distance the target is away from the gun, add a turn before the shell hits.

Enemy units with radar or other scanners can detect incoming artillery rounds, which will allow them to sound an alarm so soldiers can take cover, turn on inertia screens, and activate anti-missile or anti-artillery lasers.

Time on Target Attack



This illustration shows how Time on Target (TOT) attack is performed. Using indirect fire, the artillery unit has fired three different shots at different elevations, speeds and timing so the shells will arrive at the target location on the same turn. Note: the target must be at least medium range!

Note: on planets with a standard atmosphere, sound travels 1,988 meters per game turn. So, it is possible that when an artillery unit fires, it could be heard firing up to two kilometers away during the same turn. Yet, intervening terrain and atmospheric conditions – say a raging thunderstorm – could muffle the sound.

While in the real world a planet's gravity would definitely affect the flight time and distance of an artillery shell, the game's existing rules do not seem to account for that when it comes to lobbing grenades or shooting a pistol or gyrojet weapon. So, for the most part, assume it does not greatly change anything.

COUNTER-BATTERY FIRE

When an artillery unit fires, not only will it make a tremendous sound (assuming it is used on a planet with an atmosphere), which will provide a warning to any nearby opponents, but its shells are visible on radar. For each round fired by an artillery unit, it gives the enemy a vague idea where the shots are coming from, permitting them to fire back at that location. Basically, a counter-battery radar would act as a forward observer.

Game Use. Use the indirect fire rules for counter-battery fire. For each round launched by an enemy artillery unit, the counter-battery receives a +5 percent bonus to zero in on the attacker's location.

The only way to avoid counter-battery fire is to relocate an artillery piece between

shots. Otherwise, stationary artillery units may become dead artillery units.

ANTI-AIRCRAFT USE

“Even before 1914, when most people visualized military aircraft with a speed of no more than 75 mph and ceiling of about 4,500 feet, the artillery arm was engaged in studying problems of anti-aircraft defence... for better or worse, the 75-cm field gun was adapted for anti-aircraft fire.”

--“Anti-Aircraft Artillery,” by M. Camille Rougeron, published in L’Europe Nouvelle, c. 1940

Before the development of proximity fuses by the time of World War II, artillery used timed fuses for flak guns. But often mathematical errors caused the rounds to go off too early or too late to damage aircraft. Defenders often had to shoot thousands of rounds at aircraft before achieving a hit.

Various names given to such anti-aircraft weapons over the years including ack-ack, flack or flak guns, pom-poms, or the Bofors gun, which was an automatic, double-barreled anti-aircraft weapon from the World War II era.

The United States developed proximity fuses that used a radio transmitter and receiver. It worked by transmitting radio waves and measured the time it took for those waves to bounce back; then the shell detonated at a set distance from the aircraft, sending out a cloud of lethal shrapnel.

Some WWII anti-aircraft (AA) guns could fire some 15 projectiles per minute to altitudes greater than 30,000 feet (3,962 meters). Those high-explosive shells weighed upwards of 20 pounds (about 9 kilograms).

With the advent of surface-to-air missiles (SAM), artillery weapons were often relegated to close-in defense only.

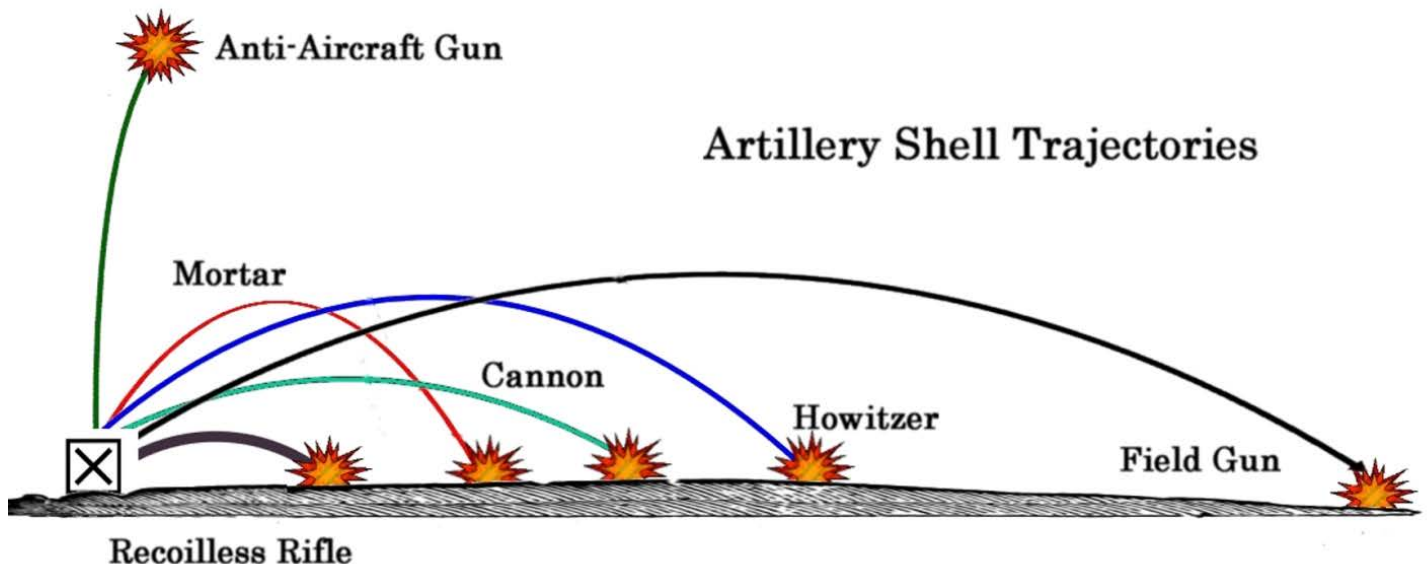
AA USAGE

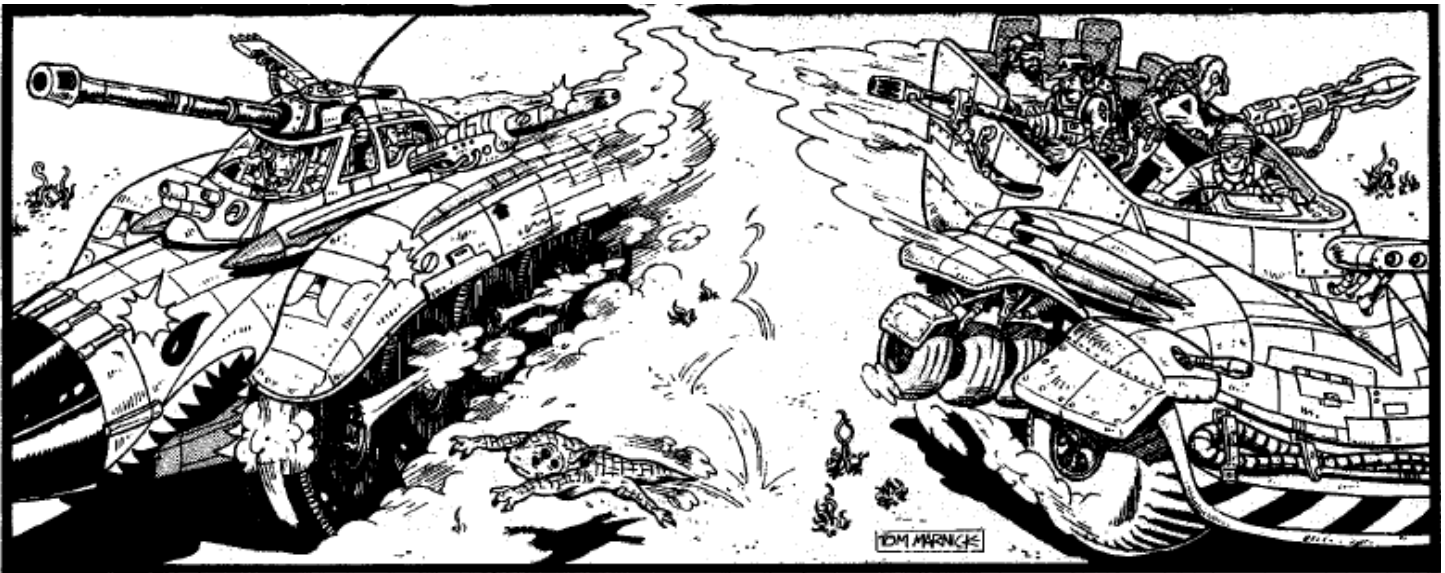
In Star Frontiers, artillery weapons – cannons, howitzers and railguns – can be used to fire at aircraft, especially if it is low hovering jetcopter or aircar. To shoot at higher flying aircraft, however, guns must be mounted in a manner that allows them to fire upwards, such as a universal turret. Note, the universal turret and other artillery mounts will be discussed further on in this article.

Artillery guns that can fire at aircraft will typically use standard or high explosive shells with proximity fuses. Most other specialized munitions are not useful against aircraft, though one could imagine the nasty effects a tangler explosive may have against an aircar's engines.

AA CEILING HEIGHT

The maximum ceiling of most artillery munitions – when fired vertically – is approximately 60 percent of the weapon's extreme range.





Frontier "battlewagons" from "Here Comes the Cavalry!" Dragon Magazine, April 1987.

AA NEAR MISSES

A "near miss" – within a roll of "5" from the to-hit number, means that the enemy aircraft was in the secondary blast area and will take damage that way.

TYPES OF ARTILLERY WEAPONS

Grenade mortars and the man-portable recoilless rifle (the 15-kilogram version)

are found in the Alpha Dawn Expanded Game rulebook and are not covered here. Other artillery weapons include the vehicle recoilless rifle, cannons (in small, medium and large sizes), and the small howitzer. Along with standard explosive warheads, most artillery weapons have other munitions (incendiary, sonic, tangler, etc.).

Author's note: After reviewing statistics from several real world weapons. The weights, damage and prices of some these

weapons have been altered from the original source material.

VEHICLE RECOILLESS RIFLE

Introduced in the "Tanks a lot!" article, this is a direct-fire projectile weapon that is similar to the version in the Star Frontiers Alpha Dawn Expanded Game Rules book, but it has a larger caliber. It can use standard explosive, electronic discharge, or field crusher shells.

Skill: Projectile (AD), P.G.S. Weapons (Zeb) or Artillery (AD or Zeb)

	Vehicle Recoilless Rifle	Cannon, Small	Cannon, Medium	Cannon, Large	Howitzer, Small
Skill:	Projectile/Artillery	Artillery	Artillery	Artillery	Artillery
Cost:	5,500 Credits	5,000 Credits	6,000 Credits	10,000 Credits	15,000 Credits
Weight:	30 kilograms	50 kilograms	100 kilograms	250 kilograms	750 kilograms
Hard Points:	2 (medium)	2 (medium)	3 (large)	4 (large)	8 (large)
Rate of Fire:	1/2	1/2	1/2	1/2	1/4
Damage:	14d10	12d10	2d10 x 10	4d10 x 10	(5d10 x 10) + 50
VDM:	14	12	15	20	25
Ammo:	15 shells	20 shells	15 shells	10 shells	10 shells
Blast Radius:	3/5	5/8	6/9	8/12	14/21
Defense:	Inertia	Inertia	Inertia	Inertia	Inertia
Ranges:					
PB:	--	0-200 m	0-300 m	0-600 m	--
Short:	0-200 m	201-400 m	301-600 m	601-1,200 m	--
Medium:	201-1,250 m	401-1,000 m	601-1,500 m	1,201-2,400 m	200-3,000 m
Long:	1,251-3,000 m	1,001-2,000 m	1,501-3,000 m	2,401-5,000 m	3,001-7,000 m
Extreme:	3,001-5,000 m	2,001-4,000 m	3,001-5,000 m	5,001-10,000 m	7,001-15,000 m

VEHICLE RECOILLESS ORDNANCE	DAMAGE	BLAST RADIUS	DEFENSE	COST (CR)/ SHELL	WEIGHT (KG)
Standard Explosive	14d10	3/5	Inertia	15	2
Electrical Discharge	Elect. Short	3/5	Insulation	30	2
Field Crusher	14d10 vs. fields	3/5	--	30	2

CANNONS, SMALL, MEDIUM, AND LARGE

These weapons have a single, long barrel. They fire single shells at high rates of speed and tend to rock small vehicles backward. They can be used as direct or indirect fire weapons. If the target is too close to the weapon, it can get damaged or destroyed by its own shell.

Skill: Projectile (AD), P.G.S. Weapons (Zebz) or Artillery (AD or Zebz)

HOWITZER, SMALL

This is a generic term that refers to a long-range artillery weapon that is often fired in an indirect mode. In the Star Frontiers game, this weapon normally will only be encountered when used by planetary militias or large mercenary companies. The model offered in "Tanks a lot!" is the smallest model available.

Skill: Projectile (AD), P.G.S. Weapons (Zebz) or Artillery (AD or Zebz)

WEAPON HARDPOINTS AND MOUNTS

A hardpoint (hp) is a reinforced weapon station on non-civilian vehicles where weapons can be mounted. It is here where a weapon mounts are attached and connected to the vehicle's electronic system. Note, in the "Tanks a lot!" article, hardpoints were called "spaces" or sp. Vehicles designed for light security detail aren't going to have as many hardpoints as those designed for more rugged military campaigns.

See Larry Moore's article in *Star Frontiers-man Issue 15* for more information.

Gun Carriages and Accessories

Along with installing weapons in vehicles, artillery pieces and other heavy weapons can be fitted to gun carriages. Basically, a carriage is a frame that supports

the weapon, allowing a gun crew to move, aim, and fire it. Some gun carriages are powered – such as the Sathar automatic cannons (see *Frontier Explorer* issue 25 for more information).

Below are samples of some of the gun carriages that are available on the Frontier. Besides the frame, the carriage will include a gun shield that will provide the crew with hard cover from enemy fire, and a recoil mechanism. Field artillery pieces devoid of a recoil mechanism will have to be repositioned after each shot, which could take 1d10+5 turns. A one-time mounting cost is included in the prices below.

FIRING RESTRICTIONS

If more than one weapon is mounted on a gun carriage, it can only fire in the direction of the main gun.

CREW SIZES

The approximate number of people needed to operate a weapon mounted on a gun carriage varies, so a range is provided. Generally, energy weapons require fewer crewmembers while projectile and missile weapons require more.

If a weapon is operated with fewer crewmembers than is optimal, the referee can assess various penalties such as reducing the initiative modifier (IM), or a to-hit penalty of -5 to -15 percent, and the rate of fire might be decreased. For example, a vehicle recoilless rifle operated by only one

character can only fire once every three turns instead of once every two turns.

The use of automatic loaders and robots can considerably reduce the crew member requirements.

SMALL GUN CARRIAGE

The small gun carriage can mount a 1 hardpoint worth of weapons,

MEDIUM GUN CARRIAGE

The medium gun carriage can mount 4 hardpoints worth of weapons.

LARGE GUN CARRIAGE

The large gun carriage can mount 10 hardpoints worth of weapons.

EXTRA LARGE GUN CARRIAGE

This weapons platform is for very large weapons and can mount up to 12 hardpoints worth of weapons.

POWERED GUN CARRIAGES

Some gun carriages can be powered, making them self-propelled vehicles in their own right. This permits the gun crew to more easily relocate and fire an artillery gun than relying on a tow vehicle/robot or a team of horses/beasts of burden.

Powered units cannot move and fire during the same turn, but can pivot 360-degrees and still fire. They can utilize wheels, treads, or hover units and still can be towed by another vehicle as well. Vehicle Size 1 powered gun carriages require a Type 1 parabattery; Size 2 and 3 need a Type 2 parabattery. They can operate for 1,000 hours or for the equivalent of 1,000 kilometers.

These units have the following movement rates:

GUN CARRIAGES						
TYPE	VEHICLE SIZE	SP	HP	CREW	COST (CR)	WGT (KG)
Small	1	50	1	2-3	500	500
Medium	1	50	4	3-6	800	1,000
Large	2	150	10	4-10	1,200	1,500
Extra Large	3	300	12	8-16	4,000	5,000

SP = Structure Points.
 HP = Hardpoints or the amount of weapons that the carriage can hold.
 Crew = The average number of crew members needed to move and operate a particular weapon. Automatic loaders and robots can considerably trim this requirement.

SMALL CANNON ORDNANCE	DAMAGE	BLAST RADIUS	DEFENSE	COST (CR)/ SHELL	WEIGHT (KG)
Standard Explosive	12d10	5/8	Inertia	40	5
High Explosive	15d10/12d10	5/8	Inertia	50	5
H.E.A.T.	15d10	5/8*	Inertia	50	5
Electrical Discharge	Elect. Short	5/8	Insulation	50	5
Field Crusher	12d10 vs. fields	5/8	--	40	5
Foam: Chemical Defoliant	Defoliates	5/8	--	30	5
Gas: Doze	Sleep	10**	STA check	30	5
Gas: Dusk	Dim Light	10**	IR, scanners	30	5
Gas: Nightfall	Darkness	10**	IR, scanners	30	5
Gas: Poison	S5/T10	10**	STA check	30	5
Gas: Smoke	-10% to hit	10**	IR	30	5
Incendiary	8d10 + (1d10x3turns)	5/8	Asbestos	40	5
Illumination	Illumination	300/450	--	30	5
Sonic	12d10/4d10	5/8	Sonic, STA chk	50	5
Sonic Stunner	Stun	5/8	Sonic, STA chk	40	5
Tangler	Entanglement 10 turns	5/8	RS check	30	5

- High Explosive shells only do maximum damage to light structures, people and animals. The second number is the damage it does to structures, vehicles and robots.
- HEAT rounds have a 15-degree, cone-shaped blast radius.
- The chemical cloud produced from gas shells extends downwind 4 times its primary radius.

Top/Cruise Speeds: 50/25 meters/turn (m/t)

Turn Speed: 25 m/t

Accel./Decel.: 25/25 m/t

The cost of a powered gun carriage is double the non-powered types while the weight is increased by 50 percent. The structure points are unaltered.

ARMOR AND ENERGY SCREENS

Other than the gun shield, a gun carriage cannot use spray armor nor will it have any “coats of protection.” They can be outfitted with defensive energy screens.

Both Curylo’s “Tanks” article in *Dragon* and Moore’s “Non-civilian duty vehicles” article in *Star Frontiersman* provide information on defense screens. The following information adheres more to Moore’s interpretation.

“Vehicle screens work the same as character based screens with one caveat; inertia screens halve damage from flamethrowers,” noted Moore. “If a screen’s power is depleted before soaking up all the damage, for each 10 points of

damage, rounded up, that make it through the screen add 1 to the roll on the vehicle damage table.

“All defensive and holo screens require emitters. The number of emitters required for each type of defense is equal 2x the vehicle’s size. A vehicle can have any number of emitters’ installed but only one screen may be active at one time.”

See *Star Frontiersman Issue 15* for more information.

TYPES OF ARTILLERY MUNITIONS

Although they act similar to their smaller grenade counterparts, because artillery shells are larger, most tend to have a secondary blast area.

STANDARD EXPLOSIVE

The standard explosive shell will cause normal damage to people, structures, robots, and vehicles.

HIGH EXPLOSIVE

High explosive shells are more designed to inflict maximum damage to “soft targets” – i.e. people, animals, light structure buildings. When used against robots, vehicles, buildings, spaceships, characters in powered armor, etc., the amount of damage inflicted is similar to a standard explosive bomb.

HIGH EXPLOSIVE ANTI-TANK (HEAT)

A shaped charge, a HEAT shell inflicts maximum damage to armored units and bunkers. It uses a proximity detonator to explode just before reaching its target; this creates a high-velocity shockwave and a jet of metal particles in a 15-degree cone that will penetrate most conventional armors.

Skinsuit material is useless against a HEAT shell. Spray-on armor will only absorb one-tenth of the damage inflicted as will any normal vehicle armor. Inertia screens, however, will act as normal against this type of weapon.

ELECTRONIC DISCHARGE SHELL CHANCE OF SUCCESS TABLE

SHELL TYPE	BASE CHANCE	-----RESISTANCE LEVELS-----					
		LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
Vehicle RR	50	46	42	38	34	30	26
Cannon, Small	60	56	52	48	44	40	36
Cannon, Medium	70	66	62	58	54	50	46
Cannon, Large	70	66	62	58	54	50	46
Howitzer	75	71	67	63	59	55	51

- The resistance levels of robots and computers are based on their level.
- The resistance levels of mines are based on their sensor level minus one.
- An automatic failure roll of 99-00 means that the target has resisted the attack.

ELECTRICAL DISCHARGE

Releasing a high charge of electrical energy when it strikes, the electrical discharge bomb short-circuits every device in the blast radius including computers, chronocoms, and other normal electronics. The ED warhead acts as an electrostunner set to damage (5d10) for every bioform in the primary blast area; beings in the secondary blast area receive half damage. If the target is specially insulated, the damage can be negated.

The chance of disabling an electronic device is based on the amount of energy that is used. Computers, robots, mines, and other electronic equipment have a resistance level to avoid shorting out. If the attacker rolls at or below the resistance number, the result will yield a malfunction. (See “Things that go boom! Part 7” in Frontier Explorer issue 29 for more information).

FIELD CRUSHER

This shell only damages force fields and other energy screens such as inertia, albedo, gauss, light shift, simp, sonic, shimmer, etc. Refer to the Weapons Charts for the amount of damage it will cause within the immediate blast area to these types of fields.

FOAM TYPES

Foam artillery shells are much larger versions of the foam grenades of the same type (see “Things that go boom! Part 1”), but there is more foam so it is more persistent. The shell will fill the immediate blast radius with opaque, dense foam that cannot be visually penetrated without the aid of radar or other scanners.

After 15 turns, most foams from the small cannon will dissipate; after 20 turns for the medium cannon; after 25 turns for the large cannon; and 30 turns from the small howitzer. Solid foam will last for 20 hours before it begins to break down.

Within the secondary blast radius, cut the foam warhead’s effects in half. For example, if a chemical defoliant bomb is used, not all vegetable matter within the secondary blast radius will be hit (a 50 percent chance of not being hit); an extinguish foam will only put flames out half the time in the secondary blast radius; etc.

Irritant foam bombs only cause temporary, non-fatal damage—unless a being drops below 0 STA, at which point it stops causing the character damage but then the character loses 1 STA point per turn until they are beyond the point of revival. The temporary damage heals at the rate of 2 STA points per 30 minutes of rest. Characters can defend against this foam by wearing goggles and filter masks. This foam can be flushed off with water.

Because artillery munitions are much larger than grenades, they will affect larger creatures easier.

GAS TYPES

These shells behave similar to a gas grenade of the same type; however, the gas clouds they produce are much more persistent. Assume that the resulting cloud – barring a fierce wind – will last for 1 turn times the weight of the warhead. Thus, the doze gas cloud from the 5 kg small cannon shell will last for 5 turns but the cloud from the 15 kg small howitzer shell will last for 15 turns.

A breeze will also cause such a cloud to drift from its original location, following the direction of the wind. The length of the chemical cloud would be **four times** its width. For example, if a doze shell has a burst radius of 30 meters, the resulting cloud would extend 120 meters downwind.

Any gases will sink into lower lying areas. So, if a character is taking cover in a ditch, the gas cloud from a poison bomb may drift to where he is at. Since the sizes of bombs are much larger than grenades, the gas will affect larger creatures as if multiple grenades had been successfully thrown at it.

If characters do not escape a gas cloud or do not have any kind of gas mask, they will need to keep rolling each turn they remain in the area of effect to avoid falling victim to its effects.

MEDIUM CANNON ORDNANCE	DAMAGE	BLAST RADIUS	DEFENSE	COST (CR)/ SHELL	WEIGHT (KG)
Standard Explosive	2d10 x 10	6/9	Inertia	50	7
High Explosive	(2d10 x 10) + 50/ 2d10	6/9	Inertia	75	7
H.E.A.T.	(2d10 x 10) + 50	6/9*	Inertia	75	7
Electrical Discharge	Elect. Short	6/9	Insulation	75	7
Field Crusher	2d10 x 10 vs. fields	6/9	--	50	7
Foam: Chemical Defoliant	Defoliates	6/9	--	40	7
Gas: Doze	Sleep	15**	STA check	40	7
Gas: Dusk	Dim Light	15**	IR, scanners	40	7
Gas: Nightfall	Darkness	15**	IR, scanners	40	7
Gas: Poison	S5/T10	15**	STA check	40	7
Gas: Smoke	-10% to hit	15**	IR	40	7
Incendiary	10d10 + (1d10x4turns)	6/9	Asbestos	50	7
Illumination	Illumination	350/425	--	40	7
Sonic	12d10/4d10	6/9	Sonic, STA chk	75	7
Sonic Stunner	Stun	6/9	Sonic, STA chk	50	7
Tangler	Entanglement 10 turns	6/9	RS check	40	7

1. High Explosive shells only do maximum damage to light structures, people and animals. The second number is the damage it does to structures, vehicles and robots.
2. HEAT rounds have a 15-degree, cone-shaped blast radius.
3. The chemical cloud produced from gas shells extends downwind 4 times its primary radius.

LARGE CANNON ORDINANCE	DAMAGE	BLAST RADIUS	DEFENSE	COST (CR)/SHELL	WEIGHT (KG)
Standard Explosive	4d10x10	8/12	Inertia	75	10
High Explosive	(4d10x10)+50/ 4d10x10	8/12	Inertia	90	10
H.E.A.T.	(4d10x10)+50	8/12	Inertia	90	10
Electrical Discharge	Elect. Short	8/12	Insulation	90	10
Field Crusher	4d10 x 10 vs. fields	8/12	--	75	10
Foam: Chemical Defoliant	Defoliates	8/12	--	65	10
Gas: Doze	Sleep	20**	STA check	65	10
Gas: Dusk	Dim Light	20**	IR, scanners	65	10
Gas: Nightfall	Darkness	20**	IR, scanners	65	10
Gas: Poison	S5/T10	20**	STA check	65	10
Gas: Smoke	-10% to hit	20**	IR	65	10
Incendiary	15d10 + (1d10x5turns)	8/12	Asbestos	75	10
Illumination	Illumination	400/600	--	60	10
Sonic	4d10x10/2d10x5	8/12	Sonic, STA chk	90	10
Sonic Stunner	Stun	8/12	Sonic, STA chk	75	10
Tangler	Entanglement 10 turns	8/12	RS check	65	10

1. High Explosive shells only do maximum damage to light structures, people and animals. The second number is the damage it does to structures, vehicles and robots.
2. HEAT rounds have a 15-degree, cone-shaped blast radius.
3. The chemical cloud produced from gas shells extends downwind 4 times its primary radius.

INCENDIARY

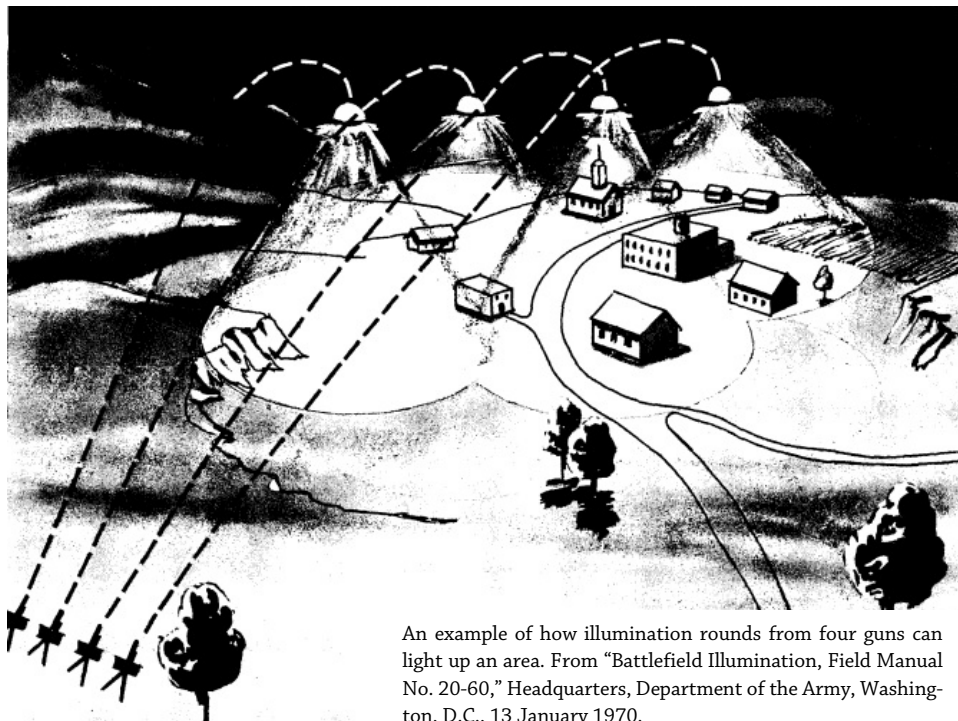
This shell causes fire damage, with the flames continuing to burn long after the initial explosion, which causes more damage. Keep in mind, if an incendiary warhead is used in a highly combustible location, such as a building, forest, etc., it will probably start a conflagration that will spread and grow even after the effects of the incendiary device have passed.

It only has a primary blast area and a secondary radius. As with explosive rounds, characters can make a Reaction Speed check to try to reduce or avoid damage. But, if the characters remain in an area that is on fire, they will start taking fire damage.

ILLUMINATION

These rounds include a flare, parachute assembly and an altitude/fuze timer. When it is shot over an area, the flare will ignite at the preset time and height. Burning at 1 million candlepower, the round will light up the primary burst radius with

the equivalent of daylight. Characters and objects in the secondary blast will be cast in a deep shadow.



An example of how illumination rounds from four guns can light up an area. From "Battlefield Illumination, Field Manual No. 20-60," Headquarters, Department of the Army, Washington, D.C., 13 January 1970.

The duration of the illumination round is 2d10 turns for canon fired rounds and 4d10+5 turns for the small howitzer.

Fierce winds, clouds and adverse weather will greatly impact the effectiveness of this kind of round. Like any artillery round, the shooter has to roll to hit the desired square and altitude. A miss will not only affect where the round goes off but also will decrease the duration of the illumination. Roll a 1d10; a result of 1-2 will decrease the duration by 2 turns, a 3-7 will decrease the duration by 1d10+1 turns; a roll of 8-9 will cut the light after 2d10+1 turns; and a 10 will mean the round lands on the ground and may ignite a fire, acting like a half-strength artillery round,

An automatic miss will mean that the illumination round was a dud and did not go off.

Note: the light from the illumination flare can be diffused by the use of dusk, nightfall and smoke explosives or other atmospheric particles such as low lying clouds, fog, etc.

SONIC

This shell generates damage through the use of high frequency sound waves. The damage is halved if someone is using a sonic screen or sonic headphones.

SONIC STUNNER

The sonic stunner shell only causes non-permanent stunning damage. Anyone failing a Stamina check within the immediate blast area will be stunned for 1d100 turns. In the secondary blast radius, a character receives a +10 percent bonus to avoid falling victim to the stunning effect, which would only last 1-50 turns.

Since shells are much larger than grenades, they will affect large creatures as if multiple grenades had been used.

TANGLER

Tangler shells throw out hundreds of strong, sticky polymer threads. These threads stick to everything within the immediate blast radius. Characters can try to avoid this effect with a Reaction Speed check. An entangled individual cannot move until the threads decay (in 30 minutes) or until solvaway is spread over the threads. Any creature with more than 100 stamina points can break out of tangler threads in one turn.

Note, because artillery shells cast far more tangler threads than a grenade, even if a character avoids being entrapped in the polymer threads, they may be trapped in the “safe” area that they sought shelter until the threads decay.

Characters, robots and creatures within the secondary blast radius also need to make a RS check to avoid entrapment; otherwise they are snared for 15 minutes. Any creature with more than 50 stamina points can break out of the threads in one turn. These bombs do not have a third or fourth blast area.

CONCLUDING THOUGHTS

Part 10 will look at more artillery weapons from catapults and ballistas to larger howitzers, field guns, and railguns. My intention is to also look at some more specialized artillery equipment.

Once Part 10 is completed, will that be the end of the “Things that go boom!” series? Well, there is the possibility of looking into nuclear weapons. Nukes are a part of the game – especially Knight Hawks. Then there are naval weapons, such as torpedoes.

SMALL HOWITZER OR-DINANCE	DAMAGE	BLAST RADIUS	DEFENSE	COST (CR)/ SHELL	WEIGHT (KG)
Standard Explosive	(5d10x10)+50	14/21	Inertia	100	15
High Explosive	(7d10x10)+50/ (5d10x10)+50	14/21	Inertia	125	15
H.E.A.T.	(7d10x10)+50	14/21*	Inertia	125	15
Electrical Discharge	Elect. Short	14/21	Insulation	125	15
Field Crusher	(5d10x10)+50	14/21	--	100	15
Foam: Chemical Defoliant	Defoliates	14/21	--	90	15
Gas: Doze	Sleep	30**	STA check	90	15
Gas: Dusk	Dim Light	30**	IR, scanners	90	15
Gas: Nightfall	Darkness	30**	IR, scanners	90	15
Gas: Poison	S5/T10	30**	STA check	90	15
Gas: Smoke	-10% to hit	30**	IR	90	15
Incendiary	15d10 + (1d10x6turns)	14/21	Asbestos	100	15
Illumination	Illumination	500/750	--	80	15
Sonic	(5d10x10)+50/ (2d10x10)+25	14/21	Sonic, STA chk	100	15
Sonic Stunner	Stun	14/21	Sonic, STA chk	90	15
Tangler	Entanglement 10 turns	14/21	RS check	80	15

1. High Explosive shells only do maximum damage to light structures, people and animals. The second number is the damage it does to structures, vehicles and robots.
2. HEAT rounds have a 15-degree, cone-shaped blast radius.
3. The chemical cloud produced from gas shells extends downwind 4 times its primary radius.

I have tried to stay as true as possible to the source material for creating statistics for the various weapons, how other munitions (tangler, sonic, etc.) might be scaled up, but some alterations were made to weapon ranges, weights, and costs. One thing I can't fix is the how the costs of Knight Hawks weapons – which have the range of 10s of thousands of kilometers and should be doing far greater damage than artillery pieces, are priced rather low in comparison to these relatively short-range, vehicle weapons.

I mean, for 10,000 Credits do you want to purchase a Knight Hawks laser cannon or a large cannon artillery weapon which has far less range and damage potential?

I have several other possible spin-off stories in the works from this series – an example of which was the “Disarming things that go boom!” article in issue 30. Yet, I do not want to tease this topic too much if these works never come to

fruition. Thank you for your reading attention.



IMAGE BY JERRY BOUCHER

CONVERSION AND REVIEW OF THE BAD SQUIDDO GAMES "BAGGY" CHARACTER

A POTENTIAL DRALASITE MINIATURE

BY TOM VERREAULT

I came across a great little miniatures company in Great Britain called Bad Squiddo Games. The company's schtick is that it produces respectful female miniatures for gaming with a focus on areas of gaming underserved by the big gaming companies. I particularly love the British women pigeoneers from WW1. If I was involved in WW1 wargaming armies I would have to have these specialty figures.

What is of interest to our readership is the mascot figure the company produces called "Baggy the Gag" which is produced in 4 different sculpts. He kind of looks like a dralastie. In fact, one sculpt has him holding a rocket launcher with a rubber squid toy mounted on the warhead and this particularly screams dralastie humor to me.

What I did not realize, until I ordered him, is that he is a dice bag. If you look at the top of his head, he is a partially closed dice bag with d6's showing. Its not unsurprising because the company owner is known as "the dice bag lady". This feature was not a huge problem as I planned to modify him to be a dralastie for table top gaming anyway.



The figure is resin with minor mold defects in the form of a mold line but there is no evidence of bubbles. It comes in two pieces - some assembly required. I like the figure and I like the mission of the company enough to support them with a few purchases. However, I was a little irritated that the figure didn't come with a base. That is the absolute industry standard -

either a base to glue the figure on or an integral base sculpted with the figure. Not having a base is not the end of the world for a hobbyist like myself, but it still left me put out. I just dropped 10 Quid (excuse me 10 pounds) plus shipping on a miniature from across the pond and at that price it didn't warrant a base?

That leads to the next point: the cost. It's pricey at 10 pounds, especially since the exchange rate favors the pound and not the dollar. However, that said the company hires sculptors and produces specialty masters that are produced in resin. I presume they are produced in small batches so the price is not a big surprise to me since I have a few specialty British based miniature companies that I like to shop from. While I might be willing to pay a premium for a high-end figure, others might not.

Baggy is a bit big. Next to other sci-fi miniatures in the 28mm range he will stand out. However, the subject is so cool I just had to add him to my collection of sci-fi RPG figures. I thought I would drill and pin the bottom of his legs and sculpt boots on to those pins but that was adding more height to the figure and he was going to resemble the Stay Puff Marshmallow Man next to other Star Frontiers figures.

CONVERTING BAGGY TO BE A DRALASITE

First, he needs a base. While I love producing custom bases, I happen to have recently bought a package of sci fi bases for the Star Wars Legion game. For simplicity I just use one of those; they look good and are cost effective.

Next Baggy requires some modification. I was tempted simply add sculpting compound to the top of the bag and leave the draw string on the head as a bit of a Rambo vibe but decided against it. I used a Dremel



and cutting wheel to cut the top of the head off and wire snips to trim the dice bag strings and tassels. Then I smoothed out the rough spots with a grinding stone in the Dremel.





Baggy the future dralasite was going to require some sculpting. To facilitate that I drilled and pinned him with a pin vice drill to implant paper clip wires. One in the top of the head and one each into the legs (I latter pulled the pins from his legs as mentioned above).



To embellish him I settled on a sculpted WW2 American style helmet with the ubiquitous "sun-goggles" from Star Frontiers plus some Warhammer 40K bits I bought on Ebay to round out the WW2 vibe I was feeling for this figure. While the goal was a WW2 vintage army helmet, what I produced kind of looked like a jungle explorer's helmet but then my "sun-goggles" didn't look much like anything out of WW2 either so I just went with it.

Pro tip: corks are a common tool for holding a wire armature while you sculpt. Recently, I bought my Dad a nice bottle of scotch that came with a cork with a wood top. Since Dad saves all his corks for my sculpting, I used these wood-topped corks



for the first time with this conversion and they are awesome. They give you a decent handle to hold the miniature as you are sculpting and they stand up on their own on your work bench.

Once I decided to nix the boots, I drilled two holes in the base then glued paperclip pins into the base. The pins were dry fitted to the holes in the figure's legs and he was glued on to the base.



Next came the 40K embellishments and as per my way of doing things I carefully drilled and pinned those tiny parts onto the figure. Then I sculpted his belt. It's not unusual to mix up more epoxy compound then you need and when that happens a

pro-tip is to roll it out thin on some wax paper and let it set. This gives you a flat piece to cut items from and this time I used a leather punch set to its largest hole to punch out a round belt buckle. The belt buckle was pushed into the unset belt but latter fell off and was superglued black in place. Lastly at this stage I sculpted some unbuckled chin straps for the helmet dangling down the side of his head.



Adding the helmet required some grinding with the Dremel tool. Also, the buckle I had included with the dangling chin strap had to be removed as it was interfering with the dry fit of the rocket launcher. Once the helmet was secured, I glued the rocket launcher on. There was a seam at the wrist where the rocket launcher was glued to the figure and I doctored this with a product called liquid green stuff.

Painting was straightforward. I used an ink wash and mixed my paint with glazing medium to make it more transparent and built up layers of paint. The goggles were done with silver paint then a coat of transparent yellow paint produced by Vallejo to get a glass or lens like appearance. Lastly, I was in a hurry so I used a clear matte enamel spray instead of a brush on matte



medium to knock the shine down from the glazing medium. I probably will go back and add a coat of brush on matte medium just because it makes a stronger matte coat and adds resiliency against chipping. Below are all-around photos of the miniature and a group photo with 35-year-old TSR minis produced specifically for the Star Frontiers game. It's clear this miniature is huge next to vintage dralasites but no one has been producing dralasite minis for 35 years. He exudes the dralasite sense of humor with the rubber squid on the business end of the rocket launcher and looks great converted to Star Frontiers.

In final review, this figure has some issues: lack of a base, scale, and price. However, the subject matter wins me over. Since I based him on a one-inch base he won't be that unwieldy on a battle mat or sci fi terrain piece gridded to one-inch squares so I'm not all that bothered by the scale issue. The lack of a base was irritating but then again, I'm a serious hobbyist so that wasn't the end of the world either. The cost of shipping from the UK is just part of doing business across the pond, but the cost of £10 could be a hurdle for some hobbyists. I like to think that if someone is

a hard-core fan of Star Frontiers then they might just consider dropping the money and supporting a small miniatures company whose mission is to produce miniatures for the underserved nooks in the gaming market.

Normally the negatives would detract from my rating but I just love the subject matter, so Baggy gets 3 dralasite thumbs up from me.



TITAN RISING: 2255

EPISODE #24.0: "RECKONING"

V2.0



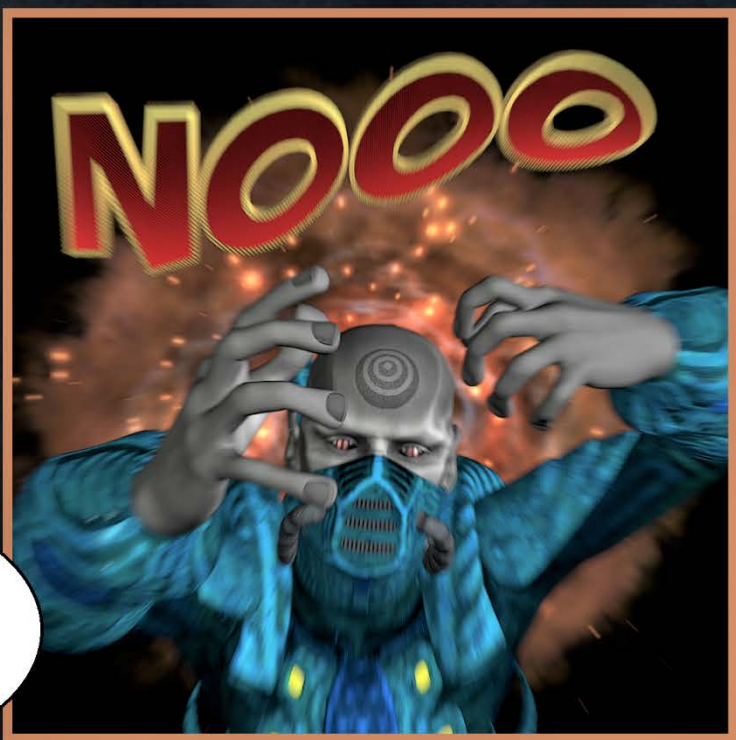
WHAT HAVE YOU DONE?!?

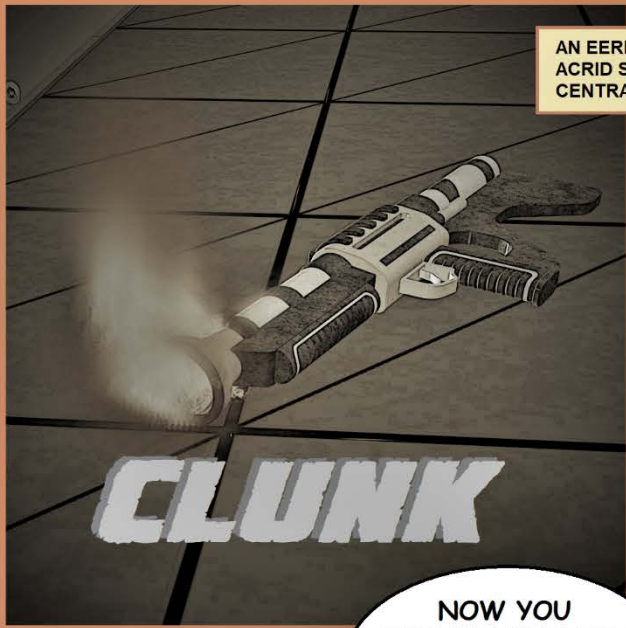
EXACTLY WHAT YOU PAID ME TO DO.

YOU SAID SEND 'EM A MESSAGE.



THIS WAS NOT PART OF OUR AGREEMENT!





AN EERIE SILENCE AND ACRID SMOKE FILL THE CENTRAL CORRIDOR.



NOW YOU KNOW THE TRUTH OF WHAT IS ABOUT TO TRANSPIRE.



FORTUNATELY, RACHEL FLYNN...

MY GIFT CAN NOW BE YOURS TOO.

RISE AND BE REBORN.



PRESENT DAY...



ON BOARD THE SEPARTIST FLAGSHIP C.S.S. HAMMERFALL...



CAPTAIN RACHEL FLYNN'S INHUMAN METAMORPHOSIS...

ACCELERATES TO A DISTURBING RATE OF GROWTH.

TO BE CONTINUED...

OSAKA SOUL PLANT

BY ERIC WINSOR

Many of our readers may recall Tik's fascination with the planet Osaka. Back when Tik started breeding mansaling a little over four years ago, it quickly became apparent that the enclosures needed a proper native Osaka habitat. Sahng Shlaund VooZhoo of Osa SiVa University was quick to supply seeds of a variety of species native to the singing forests where the mansaling thrive. Many of the seeds and spores were microscopic and provided the vast majority of the organisms necessary for the ecology of the habitats. Tik has some of the most beautiful flowers in the JHF biospheres as a result. However, Sahng also sent some specimens which grew a lot larger. The fastest growing of these, and also surprisingly agile, is the Soul Plant.

THE SOUL PLANT

Standing at 4.25 m in height when fully grown, the soul plant is an imposing creature to reckon with. The soul plant is imposing because its limbs are prehensile. Triggered by movement and heat, the soul plant will whip at and grab any creature

that approaches it. The limbs are gifted with impressive spines that dig into the victim and allow it to hold fast as the limb coils around to crush and constrict. The dorsal side of the limb will then secrete enzymes to help digest the flesh of the victim. Victims that attempt to wrestle and fight free often find themselves entangled and twisted by the other four limbs of the plant. The limbs are quite strong and more than capable to breaking bones and carapace. Flesh taken from its victims is moved by the limbs down to a digestive orifice between limbs three and four.

The soul plant thrives in a humid, temperate, rainforest-like climate. The temperature must allow variations from an average high of 22° C to an average low of 1° C. The temperature variation is necessary for the plant to progress through periods of growth and dormancy. Plants that have been cultured without periods of dormancy grow quickly, have weaker structure, and live short lives. The soil must be very deep, moderately- or well-drained and formed in mixed alluvium. The plants need growth conditions of low terraces and flood plains that have slopes of 0 to 10

percent. The annual precipitation needs to be about 280 cm and the mean annual temperature about 10° C.

The soul plant will develop quite well with proper soil, water, temperatures, and light exposure. However, the plant thrives when there is a reliable supply of native Osaka prey for it to capture and digest. Tik experimented with a variety of mammals, plants, insects, fish, and other non-osaka lifeforms to feed his soul plants since there is no supply of Osaka lifeforms on Hakosoar. Tik found that if he mixed the ratio of animal to plant mater at 1 in 6, he got the best growth of the plants. A diet of strictly animal matter produced a lethargic soul plant that was slow to attack but very ridged and tight in its constriction. A diet of plants only yielded quick attack responses by the soul plant but weak constrictive strength.

The coloring of the plant also reflected its diet. Heavy animal diets turned the plant color more reddish. Plant only or no supplemental feeding resulted in a whitish dulling of the natural healthy lime green coloring. Feeding was best accomplished by attaching plants to feed animals set



Figure 1: Soul Plant Size Comparison

loose in the habitat. The soul plant was also feed by placing the food stuff on a long pole and prodding the plant to attack and constrict the pole. The pole could then be pulled free once the limb had constricted enough to hold the feed.

Tik nurtured two soul plants to maturity in three years. Four others died at various stages of development. Another still lives but as a stunted growth. Tik has been fortunate these past years to raise these plants without incident until recently.

THE INCIDENT

All of the habitats at the JHF are monitored and controlled with the highest standards of security. We take the Federation policies about cross-planet contamination very seriously. No one is allowed to introduce or remove any material from a habitat without passing the relevant policy checks. We also keep our restricted lifeforms under constant surveillance and guard. The Osaka habitat is guarded because we keep soul plants and ghost plants in the habitats. The soul plant can hurt an unsuspecting trespasser. The ghost will eliminate a trespasser. We had some trespassers. They were looking for something, knew enough to not enter the ghost area, and felt it imperative to force their way past Tik's two mature soul plants. One of the trespassers left much of his forearm flesh and some of his leg fur and patagium in their escape.

Late one evening after the JHF was closed, the guard to the Osaka habitat was tranquilized. The trespassers had obviously studied the security routines of our personnel as they tranquilized the guard right after his call-in from his rounds and at the beginning of the longest gap in his nightly rounds. Holocamera records show that three yazirians entered the facility as stowaways in a delivery vehicle. They proceeded directly to the Osaka habitat and concealed themselves in ambush for the guard to complete his rounds. One of the three tranquilized the guard with a blow dart. They then took the guard's access card and entered the habitat.

The trespassers searched the Medusozoa Mushroom enclosure first. They checked every branch of the simulated



Figure 2: Webbing Tree

osaka trees, top and bottom. They ignored the mushrooms. Next, they scoured the Corkscrew Tree enclosure. Again, they searched all the simulated trees and the corkscrew trees this time. They seemed particularly interested in overhanging branches. They skipped the Spino-Plant enclosure. Tik is convinced they skipped the spino-plant enclosure because there are no trees as part of the habitat for the copse of spino-plants. He may be right because they continued to search only the enclosures with native oak trees or simulated trees in them and skipped the few that had none. I feel this hypothesis has merit because they walked past the Soul Plant enclosure then doubled back after the last in their group stopped, put his torch up to the glass to direct the light to the back corner, then focused the beam on the Webbing Tree.

The three trespassers made straight for the webbing tree. One of the soul plants quickly detected their movement and slammed a limb down at the advancing trespassers. The leader of the trio skillfully leapt back and landed in a fighting crouch. Trained professionals or opportunist thugs, they demonstrated their ingenuity or experience next. The leader stayed in his crouch while the tail of the trio retreated back to the enclosure viewing area and quickly studied the habitat

signs. He immediately started researching the soul plant on his chronocom, possibly communicating with outside accomplices. The middle trespasser scouted the area outside of the reach of the soul plants in the enclosure. The tail then brought the trio together and they discussed the situation. They then started probing the soul plant.

The middle trespasser slowly approached the soul plants, probing for a path between them. The plant on the left lashed out again slamming down on the ground within centimeters of the trespasser. His dodge was well controlled by the anticipation of the attack. However, he turned his back to the soul plant on the right as he dodged and didn't see the secondary attack that slammed down knocking him on the back of the head. He fell forward and rolled away from the plants to his mates. They deliberated again while the middle trespasser massaged his pride at the top of his head. They appear to have formulated some plan for two of them to distract the left and right plants provoking attacks so that the lead trespasser could rush between the distracted soul plants. The middle and tail trespassers simultaneously approached the left and right plants provoking simultaneous attacks. They failed. The right plant attacked first messing up the timing.

Three more tries were attempted before the trio got their timing right. The leader rushed on the fourth attempt. He jumped between his mates and dashed for the back of the enclosure. The right soul plant lashed out with a second limb and caught him across the stomach. A howl of startled air expelled from him as he lunged face first into the dirt and moss. His companions jolted their attention in his direction. The limb reflexively began pulling at the downed leader attempting to pull him close enough to curl around him. The middle trespasser was quick to his aid and rushed to his side while the tail alternated back and forth provoking attacks from the limbs guarding the entrance way. The middle trespasser grabbed the gasping leader under the shoulders and yanked him to his feet. The soul plants reacted to the prey between them by flailing limbs in front of them in anticipation of further movement forward. The gasping leader signaled a retreat and the two dashed back out the gap. The middle trespasser dashed quickly out. The leader, still regaining control of his breathing, made one misstep. The right soul plant caught him by the left ankle and brought him down. His right arm flailed out to catch his fall. The left soul plant slapped down and caught his right wrist, quickly coiling around it. A tug of war commenced between the two plants with the left plant quickly winning due to its firm grip around the lead's wrist. The right plant received some of the leader's pagatium which tore free due to the many hooks which raked across it after the grip around his ankle slipped free. Fortunately, the yazirian's abundant fur around his ankle kept the soul plant's limb hooks from gripping into his flesh or the tug of war would have likely pulled joints out of their sockets at the very least.

The left soul plant quickly began pulling the leader into reach of the other limbs. He growled in pain and anger as the limb around his wrist curled up around his forearm digging its hooks into his flesh as it progressed. Fighting, he got his feet in front of himself and dug his heels into the ground as the tail trespasser grabbed him around the waist and the two began to pull together to arrest the situation. The tug of war was now between yazirian and soul

plant with the leader caught in between. The middle trespasser pulled the belt from his waist and began whipping at the limb wrapped around his mate's forearm. The soul plant did not respond to the whipping nor did it likely feel anything from the attack. After several attempts the leader yelled at his mate to stop whipping as it was also hitting his free hand as he tried to pry the soul plant's limb free. The middle trespasser then joined in to aid in prying the soul plant's limb away from his leader's forearm. Doing this loosened the grip around the wrist while the grip around the forearm was still tight. The coil of the soul plant's limb slipped past his hand and straightened out causing the tugging yazirian and leader to suddenly jerk back by the sudden change of force. This caused the coil around the forearm to rip free a ring of flesh from up near the elbow halfway down the forearm. The two yazirians fell back with the leader on top of the pulling yazirian and blood covering the freed right arm. The middle trespasser pulled his two mates further away from the soul plants.

A bandage was quickly improvised from the tunic of the leader and the trio retreated from the JHF facilities without detection. The tranquilized guard did not call-in the start of his next round and was found within minutes. A computer scan of the facility was automatically conducted when the guard failed to report which revealed the trespassers. Security quickly found the disabled systems that had allowed the trespassers to penetrate our facility undetected. The police were notified immediately, and video footage of the incident was obtained from the habitat scientific cameras. The police searched all the hospitals and transport stations. No one with the soul plant injuries was found. The trespassers appear to have had their own private transport and medical aid. The JHF has now added additional security precautions.

AFTERMATH OF THE INDECENT

The police searched the Osaka Habitat. They searched all of the enclosures. They

took all the security data and examined it thoroughly. The police were able to collect DNA evidence about the three yazirians. We were able to free tissue and blood samples from the soul plants for the leader. We are all at a loss about who the trespassers were or what they were searching for. The Osaka Habitat is now closed to the public until we agree with the authorities about the next actions to be taken in regard to the incident.

Many requests have since come to the JHF to breed and sell soul plants for security around homes and other buildings. The JHF does not hold licenses to sell any of the specimens in its facilities commercially. We have no intentions to seek such licenses or business. The Hakosoar government has requested that we reiterate that they do not have nor plan to issue such licenses. We are a scientific and zoological entity and wish to remain as such. Any requests to commercialize the soul plant must be directed elsewhere. Our colleagues on Osaka also wish us to reiterate that they are not in the business of commercializing their dangerous native flora and fauna.

SOUL PLANT	
TYPE:	Omnivore
SIZE:	Medium: 4.25 m / 180 kg
NUMBER:	1 – 10
MOVE:	NA (immobile)
IM/RS:	5/45
STAMINA:	85
ATTACK:	55
DAMAGE:	1d10+2 (bludgeoning, crushing, ripping)
SPECIAL ATTACK:	Pulls grappled victims and tangles
SPECIAL DEFENSE:	none
Native World:	Singing Forests, Osaka, Osak

THE JHF DILEMMA

Many a yazirian monster story is told to young hangers about the branches of trees grabbing them at night or catching them while gliding from tree to tree. Soul plants are not the monsters of yazirian legend. They are not the monsters of our youth.

Our staff have observed the soul plants and studied them constantly. Our colleagues at Osa SiVa University on Osaka have instructed us on how to manage the soul plants. Exposing a soul plant to cold will cause its limbs to become immobile. We regularly use this to enter their enclosure and tend to the soils and other specimens in the enclosure.

The mangsaling that Tik is breeding use the soul plant as a breeding plant. They gather on the soul plant to breed. They then lay their eggs on the webbing tree. Tik and Sahng breed the soul plants and the webbing tree here at the JHF for this purpose. This incident has made public the potential danger of the soul plant and brought its existence on Hakosoar into question. This would hamper or possibly prevent the success of the mangsaling program. The JHF must state that the soul plant is immobile and cannot leave the spot it is rooted at. The soul plant enclosure is also built to the same standards as the enclosures of the many mobile creatures at the JHF. Soul plants also need a habitat that is decidedly different to any provided naturally on Hakosoar. A soul plant will die if it is left to survive in the native Hakosoar environments. There is no danger to the public of soul plants leaving the JHF.

GM NOTES

The three trespassers were employed by subcontractors of subcontractors ... who ultimately are employed by GOD-Co. GOD-Co believes that a sac-laang is being secretly held at the JHF for research into cloning. They want sac-laang specimens to develop methods of resurrecting lost yazirian lifeforms from their vast DNA banks. The JHF does not have a sac-laang.

MercCo was the driving force behind the post-incident inquiries into acquiring and breeding soul plants. They



Figure 3: 3D Printable Soul Plant

have since dispatched a team to Osaka to discreetly obtain native specimens.

The Soul Plant is available as a printable miniature on Thingiverse here:

<https://www.thingiverse.com/thing:3675929>

If you download and print this miniature, please consider thanking Grim

Greeble for the use of his model by leaving him a tip.

The Frontier Explorer staff wishes to give special thanks to Grim Greeble for permission to use his miniatures on Thingiverse for creatures from the Osakar homeworld of Osaka.

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GAUSS WEAPONS – “NEEDLERS”

AN ALTERNATE FRONTIER

BY RICHARD FARRIS

EARTH HISTORY

The name "Gauss" is in reference to Carl Friedrich Gauss, who formulated mathematical descriptions of the magnetic effect used by magnetic accelerator cannons. This technology has been around arguably since 1845 and patented in 1904. "Gauss" guns come in two flavors: coil guns and rail guns. Many hobbyists manufacture coil guns today, and the military is currently experimenting with rail guns as armaments for naval ships. Since rail guns tend to be more destructive of the materials used to create them and require enormous amounts of energy, this technology will assume the coil gun concept is what was eventually developed for infantry weapons.

FRONTIER HISTORY

With the Vrusk expertise in electromagnetic systems, this is the path their native weapons went down, until energy storage made lasers practicable. Needlers are still in common use with Vrusk security forces and have been exported to various other factions.

DESCRIPTION

These weapons use electromagnetic impulses to propel projectiles. These impulses are generated by stacking numerous coils along the projectile's path of travel and alternately energizing the coils to pull the projectile along the barrel. This is the same technology and theory that allows maglev trains to function.

Since all gauss weapons are smoothbore, they are technically not rifles. The projectile is usually finned or ribbed to cause the projectile to spin in flight. All operate silently, except that most fire rounds that crack the sound barrier. They require both a magazine of ammo and a power cell, which are consolidated into one package. Unless otherwise indicated, the Projectile skill is used to fire Gauss weapons. Gauss weapons are effectively recoilless (their recoil is too small to be significant in game terms).

Skeinsuits and Inertia screen protect against Gauss weapons.

WHY NEEDLERS RULE (ADVANTAGES)

Gauss weapons fire smaller caliber rounds (Needles) at a higher speed. Due to this, the rounds have a longer range, and more can fit in the magazines, resulting in a higher ammo capacity. To get the speeds achieved, the barrels would require more length than other weapons, resulting in longer weapons. Also, not using a reaction to propel the projectile, Needlers have negligible recoil. Unlike sluggers and hisser weapons, most components resemble common electronics and can be hidden easier.

WHY NEEDLERS SUCK (DISADVANTAGES)

Gauss rounds are smaller than their slugger counterparts and as such, cause slightly less damage. Relying on electronic components, needlers are susceptible to

damage from rough handling. Also, due to the need to let the magnetic field diminish before firing another round, automatic fire is not possible (at least through a single barrel).

SPECIFIC RULES

STAR FRONTIERS

Burst Fire: a weapon capable of burst fire, fires 4 rounds per pull of the trigger. Firing a burst counts as a normal attack and a weapon can fire a number of bursts equal to the ROF. Each attack has a +10 bonus to the attack and causes one extra dice amount (1d5) of damage.

FRONTIER SPACE

Burst Fire: a weapon capable of burst fire, fires 4 rounds per pull of the trigger. Firing a burst counts as a normal attack and a weapon can fire a number of bursts equal to the ROF. Each attack has a +20 bonus to the attack, causes damage as per being hit by 2 bullets.

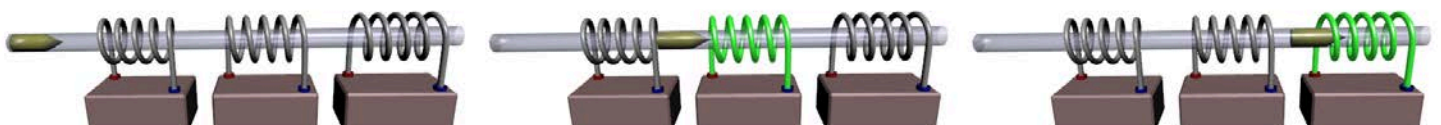
COMMON WEAPON DESCRIPTIONS

GAUSS PISTOL

This weapon is the most common Gauss handgun and is a commonly carried by those who want protection for typical situations. It uses standard needle ammunition.

HEAVY GAUSS PISTOL

This big pistol fires a larger needle, trading higher power for fewer rounds and a



Simplified diagram of a multistage coilgun with three coils, a barrel, and a ferromagnetic projectile (images courtesy of <https://en.wikipedia.org/wiki/Coilgun>)

STAR FRONTIERS	DAMAGE	RANGE					AMMO	CON-CEAL	SNAP SHOT	RE-COIL	RELIABILITY	ROF	DEFENSE	WEIGHT	COST
		CLOSE	SHORT	ME-DIUM	LONG	EX-TREME									
Gauss Pistol	3d5	7	20	40	80	160	25	-10	-10	0	99	3	Inertia	1.5Kg	150
Gauss Hvy Pistol	4d5	7	20	40	80	160	20	-5	-10	0	99	3	Inertia	2kg	200
Gauss Rifle	4d5	25	75	150	300	600	50	+20	-15	0	99	3	Inertia	4kg	250
Gauss Heavy Long Rifle	5d5	50	150	300	600	1200	20	N/A	-20	0	99	2	Inertia	5kg	400
Gauss MG	4d5	50	150	300	600	1200	100x4	N/A	-20	0	99	3B	Inertia	15Kg	1200
Gauss Cannon	8d5	40	100	200	400	800	5	N/A	-20	0	99	2	Inertia	8kg	1500

larger frame. Its size makes it harder to conceal. It uses heavy needle ammunition. This weapon used the Heavy template.

GAUSS RIFLE

The gauss rifle is a longer version using the same concepts from the pistol. This results in a long weapon with good range. It uses standard needler ammunition.

HEAVY GAUSS LONG RIFLE

This long hunting or sniper weapon has a barrel of nearly 2 meters. It uses heavy needle ammunition. This weapon used the Heavy and Long template. It uses heavy needle ammunition.

GAUSS MACHINE GUN

This multi-barrel non-rotating gauss weapon loads each of its 4 barrels from

individual hoppers. Essentially 4 rifles mounted together, it fires a “burst” of 4 rounds, one per barrel, per pull of the trigger. This is a high weight weapon that is generally used as a vehicular or emplacement weapon. It uses standard needler ammunition.

GAUSS CANNON

This shoulder-mounted large-bore gauss heavy weapon. It fills the same roll in infantry formations that a light rocket would in human formations. It uses very heavy needle ammunition.

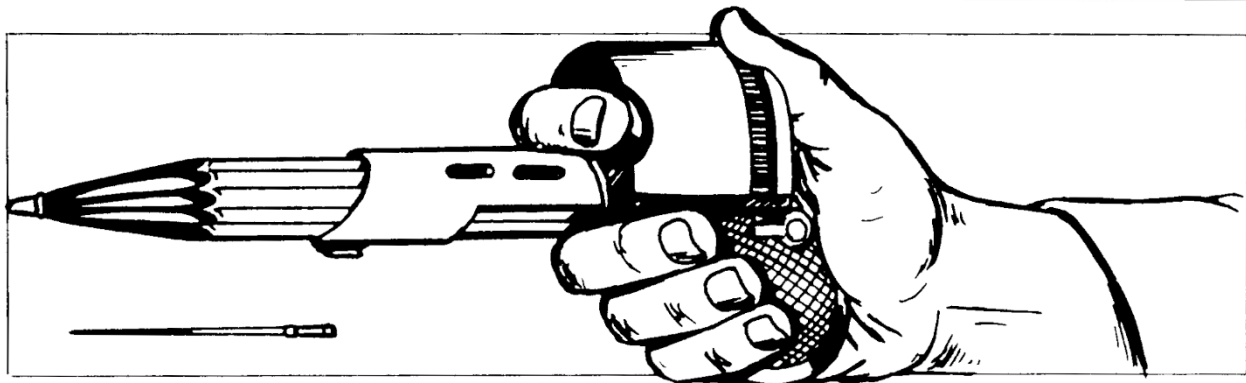
STATISTICS

Game statistics for the weapons in Star Frontiers and FrontierSpace are provided in the tables on this page.

NUTS AND BOLTS

This section will delve into the way I created the statistics above and how to use templates to create new weapons. All Gauss weapons were created from the first two weapons: the Gauss pistol and rifle. By placing templates on those weapons, new weapons can be created for your universe. If this is not your style, feel free to disregard and use only the weapons provided. Not all templates will make sense with all weapons. Finally, this document is only to provide some flavor for an individual’s campaign. Remember fun is always the goal, not to make the game complicated or feel like a wargame.

FRONTIERSPACE	DAMAGE	RANGE INC.	AMMO	CONCEAL	SNAP SHOT	RECOIL	RELIABILITY	ROF	DEFENSE	WEIGHT	COST
Gauss Pistol	3d5	25	25	-10	-10	0	99	3	Ballistic	1.5Kg	150
Gauss Heavy Pistol	4d5	25	20	-5	-10	0	99	3	Ballistic	2kg	200
Gauss Rifle	4d5	50	50	+20	-15	0	99	3	Ballistic	4kg	250
Gauss Heavy Sniper Rifle	5d5	150	20	N/A	-20	0	99	2	Ballistic	5kg	400
Gauss MG	4d5	100	100x4	N/A	-20	0	99	3B	Ballistic	15Kg	1200
Gauss Cannon	8d5	75	5	N/A	-20	0	99	2	Ballistic	8kg	1500



	DAMAGE	RANGE					AMMO	CON-CEAL	SNAP SHOT	RELIA-BILITY	WEIGHT	COST
		CLOSE	SHORT	MEDIUM	LONG	EXTREME						
CALIBER												
Medium (No prefix)	--						--	--			--	--
Heavy (Hvy)	+1 dice						-33%	+5			+0.5kg	+50
Very Heavy (VHvy)	X2 dice						-80%	N/A			X2 Kg	X6
PISTOLS												
Hold-out		-50%	Close X 2	Short X 2	Med X 2	Long X 2	-66%	-20	+5		-0.5kg	--
Compact		-25%	Close X 2	Short X 2	Med X 2	Long X 2	-33%	-5	--		-0.25kg	-50
Target		+25%	Close X 2	Short X 2	Med X 2	Long X 2	--	+10	-5		+0.5kg	+50
RIFLES												
Short		-25%	Close X 2	Short X 2	Med X 2	Long X 2		-5	+5		-0.5kg	--
Medium		--	--	--	--	--		--	--		--	--
Long		+100%	Close X 2	Short X 2	Med X 2	Long X 2		N/A	-5		+1kg	+100
GENERIC												
Cheap											-1	-50
Very Cheap											-2	-100

Note: Columns with no modifiers have been omitted from the table.

DESCRIPTION OF TEMPLATES

Calibers detail how large of a projectile is shot out of the weapon.

Standard (Medium) – The standard caliber in use.

Heavy – A more powerful round for use with those that want a little more stopping power than the standard. It trades ammo capacity for damage.

Very heavy – The large needles that go into the gauss cannon. Literally the size of a pencil, these needles cause tremendous damage.

PISTOL TEMPLATES

Hold-out – A small sized weapon designed for concealment. It trades ammo capacity and range for concealment.

Compact – In between the hold-out and a standard pistol is the compact pistol. Its penalties are not as extreme as the hold-out, but it isn't as concealable. Sometimes carried by those who want a lighter weapon and are not expecting trouble.

Target – A longer weapon made for better accuracy at longer ranges. It trades concealability for range.

RIFLE TEMPLATES

Short – This template shortens the length of the barrel to make the weapon more maneuverable. It trades range for reducing the snapshot penalty.

Long – Opposite of above, this template lengthens the barrel to gain extra range. It makes the weapon more unwieldy, though.

GENERIC

Cheap – Made from inferior materials or craftsmanship, these weapons cost less at the expense of reliability.

Very Cheap – Made of absolute junk or hastily thrown together with shoddy craftsmanship. Generally, these weapons are made for individuals who can't otherwise acquire better weapons (such as criminals or subjects in authoritarian regimes) or are used weapons that were not maintained well.

WEAPON ACCESSORIES

The following are options that can be added to a weapon for various bonuses.

(Table with statistics is on the following page.)

Laser Sight / Red Dot Sight – Two devices that can be installed on a weapon to aid in aiming. Either one reduces the Snap Shot penalty. There is no benefit to installing both on a single weapon.

Scope – An optical sight that reduces the penalties for range.

Customization – A series of modifications that improve the function of the weapon. These modifications may include: better grip, performance internal parts, and/or accurized barrels.

Personalization – A series of modifications that tune a weapon to a specific person like custom grips and/or customized sights.

Bipod – A device that extends 2 prongs that can be rested on a surface to aid in aiming.

Tripod – A device that is a larger version of a bipod. Usually used for larger weapons. Cannot be combined with the bipod.

Extended Magazine – An extension of the magazine that allows the weapon to hold more rounds.

WEAPON ACCESSORIES	DAMAGE	RANGE					AMMO	CONCEAL	SNAP SHOT	WEIGHT	COST
		CLOSE	SHORT	MEDIUM	LONG	EXTREME					
Laser / Red dot Sight								+5	--	50	
Scope		Halves range penalty						+10		+0.25kg	100
Customization		+5 to Attack								--	100
Personalization		+5 to Attack to the person it is tuned to, -5 for any other shooter								--	200
Bipod		+5 to Attack when aiming						+10		+0.5kg	25
Tripod		+5 to Attack when aiming						N/A		+20kg	100
Extended Magazine							+100%		+0.25kg	25	
Variable Power Setting	-1 dice	-50%	Close X 2	Short X 2	Med X 2	Long X 2			+0.25kg	100	
Security										100	

Note: Columns with no modifiers have been omitted from the table.

Variable Power Setting – A modification that will reduce the power of the magnetic fields resulting in a lower speed. This allows the round to remain subsonic eliminating the noise of the round at the expense of damage.

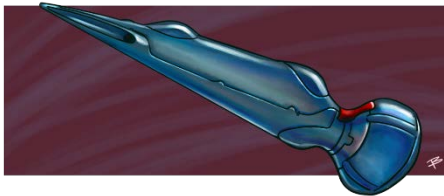
Security – A modification that ties a specific weapon to be used only a specific person. This may be accomplished by DNA sniffers, implants, or electronic bracelets.

SPECIFIC WEAPONS

This section uses the above statistics to create specific named weapons to use in an individual's campaign. The generic weapon above can be used with no problems, so use of named weapons is purely an option depending on the personal tastes of the GM. The specific weapons listed have statistics for the Star Frontiers RPG.

K'DA KIT ARMS T'SARCI

IMAGE BY JERRY BOUCHER



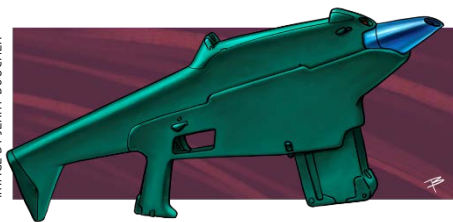
Used by corporate forces on multiple worlds, the T'sarci allows a guard to get a little longer reach without having to carry a long arm. When you need to convey "stay away".

The T'sarci is a large pistol used by Vrusk corporate security forces. This is a standard weapon with a little more range. The weapon also incorporates a security device to keep the weapon from being used by unauthorized personnel.

Templates: Target
Accessories: Security
Damage: 3d5
Range: 10/25/50/100/200
Ammo: 25
Conceal: +0
Snap Shot: -15
Recoil: 0
Reliability: 99
ROF: 2
Defense: Inertia
Weight: 2kg
Cost: 300 Cr.

PANGALACTIC CORP ARMAMENTS EGR-73

IMAGE BY JERRY BOUCHER



Nicknamed the "carapace cracker", the PGCA EGR-73 is excellent for shipboard or corporate facility use. It is easy to maneuver in tight spaces and powerful enough to handle threats. The oversized magazine allows it to stay in the fight over competitor's models.

The EGR-73 is a compact gauss rifle for use in close quarters where a little more power is needed. The short barrel and laser sight aid in target acquisition in close quarters.

Templates: Short
Accessories: Laser Sight, Extended magazine
Damage: 4d5
Range: 20/60/120/240/480

Ammo: 100
Conceal: +25
Snap Shot: -10
Recoil: 0
Reliability: 99
ROF: 3
Defense: Inertia
Weight: 3.75kg
Cost: 275 Cr.

MAXIMUM DEFENSE SOLUTIONS COVERT DEFENDER

MDS introduces a new weapon for those that wish protection when discretion is required. This weapon is designed for when you need to escape without detection if you are the target of a kidnapping. With its variable power setting, the weapon can be silent or more powerful as the need dictates.

Typically, a spy or assassin weapon, the Defender look like an innocent object like a book or tablet. It holds 5 shots in a small magazine. Due to the construction, it looks like standard electronics to weapon sensors.

Templates: Hold-out
Accessories: Variable power setting
Damage: 3d5/2d5 (when silent)
Range: 2/6/12/24/48
Ammo: 5
Conceal: -30
Snap Shot: -5
Recoil: 0
Reliability: 99
ROF: 3
Defense: Inertia
Weight: 1.25kg
Cost: 250 Cr.

THE SHOTGUN PISTOL

IN THE MINZII MARKETPLACE

BY THOMAS VERREULT

Hezred was wandering the streets of Clarion's capitol in a foul mood. The Kingdom of Clarion had some of the toughest weapons laws in known space and he'd been forced to secure most of his on the ship before shuttling to the surface. A disarmed populace did not mean it was crime free and it was his job to keep his Captain safe.

His inward grumbling ceased when he spied a boon'shah; this alien was a long way from home. Perhaps he had one of the boon'shah's famed multi-pistols that Hezred could purchase.

The boon'shah was headed directly to a shop and he had a key out to unlock the door for the start of the business day. Hezred eyes widened at the sight of the sign over the door, "A weapons smith? Ho-HO! This could be my lucky day!"

The yazirian enforcer waited a few minutes before following the boon'shah into his shop. When he entered, an obvious hologram addressed him asking if assistance was needed but Hezred shook his head no and asked for the proprietor.

"Greetings, my worthy yazarian warrior, how might I be of benevolent service?"

Hezred noted the almost standard Capellan Free Merchant greeting, his gig with

a CFM captain meant that he could almost smell a fellow member of the CFM by their speech patterns. He decided to cut to the chase and spun a ring on his hand so that the insignia could be viewed and inquired, "I have an interest in locating a twin to this ring?"

The boon'shah inclined his head and responded, "*I have such a ring, it seems that you have found a twin like the dust of the stars.*"

"Indeed, *they are forged with the dust of the stars.*"

At the sign and counter sign identifying them both as Capellan Free Merchants they both relaxed into the familiar rules for fellow CFM merchants trading with each other. Hezred had identified himself as CFM and in need of some assistance. The rules in play now meant that the boon'shah would help if he could, selling any wares at a standard price with no haggling and Hezred would pay the price without haggling.

Hezred explained, "It is my duty to guard my captain and the authorities of this planet are restrictive of the weapons. By chance do you have one of the famed boon'shah multi-pistols for sale?"

"Apologies, but as per the laws of this planet I am unable to sell firearms."

Hezred scratched his head and considered the projectile weapons publicly displayed for sale and asked, "What do you call those?"

A boon'shah's face is fairly immobile making their emotional responses tough to read but Hezred plainly heard the smile in the shop keeper's response, "In the eyes of the law of this planet, black powder rifles, pistols, and shotguns are not firearms. It's a loophole that I take advantage of to ply my craft here."

At Hezred's disappointed expression the boon'shah continued, "I assure you my workmanship is impeccable and the quality is untouched. Consider my double-barreled shotgun pistol. The barrels are break-open, side-by-side, smooth-bore, and 15 cm long. The weight is 1 kg which is heavy for what they call a holdout weapon but the weight actually helps with recoil. Overall length is 25 cm. The stock is carbon fiber composite for rugged durability and the gun is federanium alloy, same as a starship's hull, truly a weapon to hand down within a clan for generations. Because of its construction it does not show on standard metal detectors. The caliber is the human standard known as 12 gauge. It has a bead sight and black oxide finish. The holsters are tooled loxxen leather imported from Lossend and optimized for concealed carry. The weight is a full kilogram but that helps to dampen the recoil. The trigger has a switch to select one barrel or the other."

Hezred gingerly took the proffered weapon considering what the weaponsmith had said. The idea of archaic, muzzle-loading firearms was something he cringed at.

"Would you buy it back when we depart the planet?"

"No need. There is a conversion kit readily available. Once you leave the surface of Clarion, visit the Apothecary on Clarion Station, use my name and inquire about lubricating oil for the weapon and he will

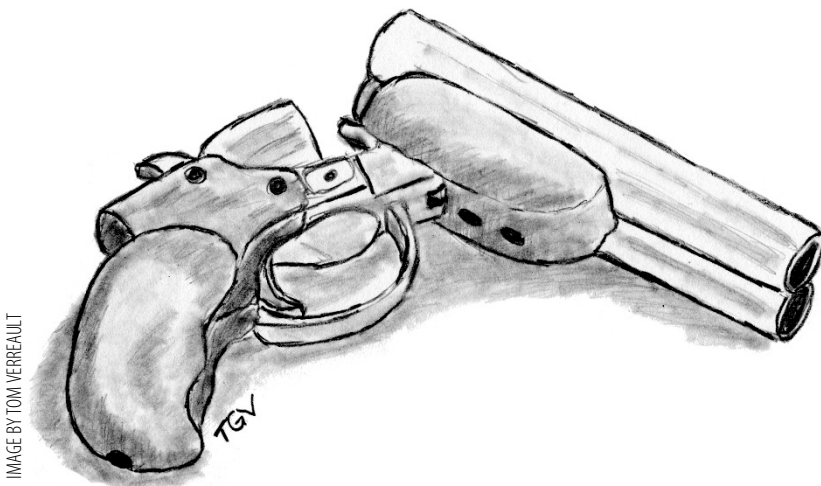


IMAGE BY TOM VERREULT

sell you the conversion kit for this to be retro-fitted for shotgun shells.”

At more hesitation from Hezred the boon’sshah suggested, “Perhaps you’d like to try firing it?”

They descended to the basement firing range and discharging both barrels after the boon’sshah loaded them. Then Hezred loaded the weapon and discharged both barrels a second time.

The hand cannon was certainly growing on him, he really liked shooting it. Converting it to standard shot gun shells would be a no brainer when they left Clarion.

“I’ll take two.”

THE DOUBLE BARREL SHOT GUN PISTOL

Being crafted in federanium alloy and carbon fiber composite, it does not show up on typical weapons scans. It packs a

punch with the classic human 12-gauge caliber shells. When in muzzle-loading configuration a special breach plug is use with black power, shot, and wadding. Damage is 2d10+2 at point blank range to one target. At short damage is 2d10 but acts as burst fire affecting the target and any adjacent targets. At Medium range damage is 2d10 -1 and treated as burst fire. The weapon is ineffective at long and extremely long ranges. Because of the barrel selector mechanism, the gun will only fire one barrel at a time. Rate of fire is 2 but the second shot in the same round is at -5% penalty to hit.

Cost: 200 Cr. **Weight:** 1 kg

MUZZLE-LOADING TO SHELL CONVERSION KIT

This is a straight-forward conversion kit that changed a muzzle-loading shotgun to one using shells. The conversion takes half an hour.

Cost: 50 Cr.

SHOT, WADDING, AND BLACK POWDER

These items come in an ammo box that is worn on a belt. Optimally it will take 1 turn to load one barrel, but this requires a DEX check to accomplish. Otherwise, it takes 2 combat turns to load one barrel.

Cost: 10 Cr for 20 rounds

PAPER CARTRIDGE SHOT

These cartridges contain a prepared quantity of shot and powder rolled into a paper cartridge. The end of the paper cartridge is torn off, the powder is poured into the barrel followed by the shot and the paper is stuffed in last as wadding. This procedure takes one combat round per barrel. The rounds are carried in a cartridge box on a belt.

Cost: 15 Cr for 20 rounds

BOX OF SHOT GUN SHELLS

Classic shell ammo of 20 loose shells.

Cost: 10 Cr. for 20 shells



IMAGE BY TOM VERREAU

JETBOOTS REDUX

AN ALTERNATE MOVEMENT SYSTEM FOR STAR FRONTIERS

BY JOSEPH CABADAS

In the STAR FRONTIERS™ game, all creatures are given a set of movement rates which are dependent only upon the races of the creatures involved. Thus, every Human in the Frontier runs just as fast as every other Human. The same can be said for Yazarians, Dralasites, and every other known race.

Obviously, this just isn't the case. Any decent member of an Olympic track team could beat the socks off the average person on Earth in a foot race, yet the current movement system would not allow this.

Since all characters are not created equal in the STAR FRONTIERS™ game system, all speeds should not be equal. Speed should be based upon the basic attribute scores of a character and the character's race. (Obviously, a Dralasite cannot run as fast as a Vrusk.)

Example, a player's character is a space-station security guard who has unexpectedly discovered an intruder in a storage area.

Player: "I back away, drawing my nightstick."

Referee: "Great, because the guy takes off the moment he sees you. He's carrying a box from the storeroom."

Player: "I chase after him! When I catch up, I'll smack him with my nightstick! I move at 30 meters per turn."

Referee: "Being a human, the intruder also runs at 30 meters per turn."

Player: "Well, then, how am I gonna catch him?"

Good question. Unless the intruder happens to slip on a convenient banana peel or other unforeseen obstacle, the poor security guard may never get his man. Here we see evidence of a flaw in the STAR FRONTIERS® game, in that all beings of the same race run at the same rate of speed.

- Charles A. Vanelli, "Jetboots don't fail me now!" *Dragon Magazine*, November 1988

One of the drawbacks of the Star Frontiers game – and other older role-playing games such as Dungeons & Dragons – is that all characters of a certain race or class

move at exactly the same speed. Obviously that's not true in the real world.

Writer Vanelli tackled this subject in his "Jetboots" article, creating the Movement Rate Modifier (MRM) system. A character's MRM score is based on a combination of a character's Strength and Reaction Speed.

What follows is an effort to update Vanelli's system, while fixing some fatal flaws to some of the movement charts that were published in *Dragon Magazine*.

AVERAGE CHARACTERS AND WALKING, RUNNING, AND HIKING RATES

Before looking at how one can calculate a character's MRM, let's look first at average characters in the Frontier and their average movement rates. Table 1 provides the average Strength (STR) and Reaction Speed (RS) ability scores along with the average walking, running, and hiking movement rates for members of the Core Four, Rim, S'sessu, and Sathar races. A character

with roughly average ability scores will move at the average rate for his species.

The S'sessu were one of several optional races for Star Frontiers that were given in *Dragon Magazine*; an offshoot species of the Sathar, they were created by David "Zeb" Cook, one of the originators of the game. The Humma, Ifshnit, and Osakar are races from the *Zebulon's Guide* expansion book.

Note, Humma can conduct leaping and spring charge attacks, which is why there is a second number for their walking and running speeds. Leaping can only be done for 10 turns, followed by 30 minutes of rest.

AVERAGE WALKING SPEED

This is the rate at which a character can walk, expressed in meters per turn. It is also the rate at which a character can climb ladders or a staircase.

AVERAGE RUNNING SPEED

This is the rate at which a character can run at maximum speed, expressed in meters per turn. It is also the rate at which a character can climb ladders or a staircase. Add the character's MRM score to the base score to determine his running speed.

TABLE 1: AVERAGE STR, RS AND MOVEMENT VALUES BY RACE

RACE	AVGERAG STR	AVERAGE RS	AVERAGE MRM	AVERAGE WALKING	AVERAGE RUNNING	AVERAGE HIKING
Dralasite	50	40	5	5 m/t	20 m/t	3 kph
Human	45	45	5	10 m/t	30 m/t	5 kph
Humma	55	45	5	10/25 m/t	35/50 m/t	6 kph
Ifshnit	40	45	4	4 m/t	15 m/t	2 kph
Osakar	50	50	5	25 m/t	60 m/t	10 kph
Vrusk	40	50	5	15 m/t	35 m/t	6 kph
Yazarian	35	50	4	10 m/t	30 m/t	4 kph
S'sessu	45	45	5	10 m/t	20 m/t	3 kph
Sathar	40	40	4	10 m/t	20 m/t	3 kph

Walking and running speeds are presented in meters per turn (m/t). The hiking speed is presented in kilometers per hour (kph).

AVERAGE HIKING SPEED

Called the “Per Hour” rate in the Alpha Dawn rules, this is the average distance that a character of a particular race can travel during an hour of walking with appropriate, periodic resting periods. See the “Mixed Party” rule to determine the speed of groups comprised of different races. The type of terrain will affect how far a character can actually travel.

AVERAGE CHARACTERS AND CRAWLING, CLIMBING AND SWIMMING RATES

Table 2 provides the average racial speeds for characters when they are crawling, climbing and swimming.

CRAWL SPEED

This is the rate at which a character can crawl along the floor or ground in a semi-prone position in meters per turn. For most races it is generally one-fourth of their walking speed, although some races (such as Vrusk and Satharoids) can move at half of their walking speed due to their physiology.. A crawling character receives the benefit for being prone when facing a ranged attack, although they typically cannot return fire (at least not with any accuracy) because their arms are in use for crawling.

CLIMBING SPEED

This is the maximum rate which an average character of a particular race can climb a rope (or a tree or vine or similar object) during a turn.

At the halfway point of a climb, the character must make a Strength check with +30 percent modifier. Failing the roll means the character falls, resulting in falling damage. A roll of 96-00 is automatic failure.

The referee may allow the player to make a Reaction Speed check to see if he can grab the rope to stop or slow his fall; if that check is successful, he will still fall 1d5 to 1d10 meters. If the character strikes the ground, even after making an RS check, trim the fall damage in half.

Some species, such as the Osakar, Vrusk, Yazarians and Satharoids are better climbers than others. Humma, however, are not physically made for climbing and are often slower than Ifshnits; Humma can vertically leap far higher than most other races, so this is not always a problem.

VERTICAL CLIMB

This is the maximum rate at which an average character of a particular race can climb a vertical or nearly vertical wall or similar surface per turn – assuming there are appropriate hand- and footholds. At the halfway point of the climb, the character must make a Dexterity check with a +30 percent modifier.

Failing the roll means the character falls. A roll of 96-00 is automatic failure. As

noted earlier, some races are better climbers than others.

SLOPES LESS THAN 60 DEGREES

Strength checks for rope climbs and Dexterity checks for wall climbs are not necessary if the surface the character is climbing slopes less than 60 degrees.

SWIM SPEED

This is the maximum rate which a character can swim expressed in meters per turn. When it comes to swimming, Dralasilites can form flipper-like limbs, which allows them to increase their speed in the water.

The benefits of a Yazarian’s wings for pushing water are counteracted by the drag caused by their hair and the wings themselves, but this balances out so they typically can swim as fast as a Human.

Vrusk are particularly awkward in the water. They tend to flip on their backs to keep their abdominal breathing spiracles out of the water while scuttling along with their 10 limbs to propel them. Note: they could use a flotation device or a “bag snorkel” to permit them swimming upright, though this does not increase their speed in the water.

With their long limbs, Osakar are about as fast in the water as they are on land. The Humma’s strong tail makes them proficient swimmers. Satharoids can swim fairly fast. The diminutive Ifshnits suffer from their lack of height when it comes to swimming.

LONG DISTANCE SWIM

This is the rate at which a character may swim, with brief floating rests, over long periods of time expressed in kilometers per hour. For Ifshnits or other smaller and slower characters, this distance may be represented in meters per hour.

AVERAGE JUMPING DISTANCES BY RACE

Although the Alpha Dawn rules treat all races pretty much equally when it comes to leaping and vaulting distances, Charles Vanelli’s “Jetboots” article provided differences based on race. Table 3 looks at the

TABLE 2. AVERAGE CRAWLING, CLIMBING AND SWIMMING SPEEDS BY RACE

RACE	CRAWL SPEED	CLIMBING SPEED	VERTICAL CLIMB	AVG. SWIM	LONG DISTANCE SWIM
Dralasite	3 m/t	3 m/t	1 m/t	13 m/t	1.3 kph
Human	3 m/t	2 m/t	1 m/t	10 m/t	1.0 kph
Humma	3 m/t	1 m/t	0.5 m/t	11 m/t	1.1 kph
Ifshnit	1 m/t	1 m/t	0.6 m/t	5 m/t	0.7 kph
Osakar	13 m/t	4 m/t	2 m/t	25 m/t	3 kph
Vrusk	8 m/t	3 m/t	1 m/t	8 m/t	0.8 kph
Yazarian	3 m/t	3 m/t	1.5 m/t	9 m/t	0.9 kph
Sathar	5 m/t	2.5 m/t	1.2 m/t	12 m/t	1.4 kph
S’sessu	5 m/t	2.5 m/t	1.2 m/t	12 m/t	1.4 kph

TABLE 3. AVERAGE LEAPING DISTANCE BY RACE

RACE	STANDING HORIZONTAL LEAP	RUNNING HORIZONTAL LEAP	STANDING VERTICAL JUMP	RUNNING VERTICAL JUMP
Dralasite	2 m	5 m	1 m	2 m
Human	2 m	5 m	1 m	2.5 m
Humma	15/25 m	25/50 m	10/15 m	15/20 m
Ifshnit	1 m	3.4 m	0.8 m	1.4 m
Osakar	3.5 m	10.5 m	3.5 m	8.5 m
Vrusk	2 m	6.5 m	1 m	2.5 m
Yazarian	3 m	8.4 m	1.4 m	3.4 m
Sathar	2.4 m	5.4 m	1 m	3 m
S'sessu	2.4 m	5.4 m	1 m	3 m

Humma characters can normally make a 15 meter standing leap or a 25 meter running leap. But if using their spring charge ability, which is tiring, they can make a 25 meter standing leap or a 50 meter running leap.

average distances that a character can jump by race.

Humma characters can normally make a 15 meter standing leap or a 25 meter running leap. If using their spring charge ability, which is tiring, they can make a 25 meter standing leap or a 50 meter running leap.

AVERAGE STANDING HORIZONTAL LEAP

This is the distance in meters that a character can leap horizontally from a standing start.

AVERAGE RUNNING HORIZONTAL LEAP

This is the distance in meters that a character can leap horizontally, allowing a straight-line run of at least 15 meters before leaping.

AVERAGE STANDING VERTICAL LEAP

This is the height in meters that a character can leap/vault over an object from a standing start. This height is measured from the ground to the lowest point on the character's body at the apex (the highest point) of a jump. The sum of this distance and the character's height (with arm extended) is used to figure out how high a character can reach when attempting to grab an object above him.

AVERAGE RUNNING VERTICAL LEAP

This is the height in meters that a character can leap, allowing for a straight-line run of at least 5 meters before jumping. (See the description of the Standing Vertical Leap for more information.)

USING THE MOVEMENT RATE MODIFIER

As noted earlier, the Movement Rate Modifier (MRM) is the average of a character's Strength and Reaction Speed scores. Strength (STR) score represents power of the character's muscles while Reaction Speed (RS) measures a character's quickness.

To calculate the MRM, add the STR and RS scores together and divide by 20; round the results up or down to the nearest whole number. The MRM number, usually from 1 to 10, indicates how fast a character is – but only as compared to other members of the same race.

High MRMs represent fast characters, while low scores indicate a character is slower. This score is used to help calculate walking, running, hiking, crawling, swimming, and leaping speeds. It should be recorded near the character's movement rates.

For example, Ohhmama the Dralasite has an STR score of 55 and an RS score of 41; the sum of those two scores is 96; divided by 20 the result is 4.8. Rounding up means its MRM score is 5.

Yayla the Yazarian has an STR score of 38 and an RS score of 51. The sum of her two ability scores is 89; divided by 20, the result is 4.45. That number is rounded down to a 4, which becomes Yayla's MRM score.

TABLE 4. MOVEMENT RATE MODIFIER (MRM) CHART

		-----CHARACTER'S STRENGTH (STR) SCORE-----																
		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
-----CHARACTER REACTION SPEED (RS) SCORE-----	20	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6
	25	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
	30	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7
	35	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7
	40	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7
	45	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7
	50	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8
	55	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
	60	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
	65	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8
	70	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9
	75	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9
	80	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9
	85	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9
	90	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10
	95	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10
100	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	

TABLE 5. WALKING, RUNNING, HIKING, CRAWLING, AND CLIMBING SPEEDS BY RACE

RACE	BASE WALKING SPEED	BASE RUNNING SPEED	BASE HIKING SPEED	BASE CRAWL SPEED	BASE CLIMBING SPEED	BASE VERTICAL CLIMB
Dralasite	0 m/t	15 m/t	2.5 kph	¼ Walk	1.5 m/t	0.5 m/t
Human	5 m/t	25 m/t	4.5 kph	¼ Walk	1.5 m/t	0.5 m/t
Humma	5/20 m/t	30/45 m/t	5.5 kph	¼ Walk	0.5 m/t	0.0 m/t
Ifshnit	0 m/t	11 m/t	1.6 kph	¼ Walk	1.0 m/t	0.2 m/t
Osakar	20 m/t	55 m/t	9.5 kph	¼ Walk	3.5 m/t	1.5 m/t
Vrusk	10 m/t	30 m/t	5.5 kph	½ Walk	2.5 m/t	0.5 m/t
Yazarian	6 m/t	26 m/t	3.6 kph	¼ Walk	2.6 m/t	1.1 m/t
Sathar	6 m/t	16 m/t	2.6 kph	½ Walk	2.1 m/t	0.8 m/t
S'sessu	6 m/t	16 m/t	2.6 kph	½ Walk	2.1 m/t	0.8 m/t

Table 1 provides the average MRM number for an average character. To help determine a character's MRM score, consult Table 4, which is the "Movement Rate Modifier (MRM) Chart." To use it, determine the character's STR score and cross-reference it with the Reaction Speed (RS) score. The number at the intersection of these two entries is the MRM score, which has already been rounded up or down to the nearest whole number.

BASE WALKING, RUNNING, HIKING, CRAWLING, & CLIMBING SPEEDS

Then use the character's MRM score to calculate walking, running and other movement speeds by consulting the appropriate Base Movement Values by Race tables. These "base movement values" allows characters of the same race, who are physically alike, to have the same movement rates.

Those characters who are different may be slower (if they have a low MRM score), or faster (if they have a higher MRM score) than their peers.

For example, Ay Norus the Pledge, a Humma, has a STR score of 62 and an RS of 51. He has an MRM score of 6. He can walk at a rate of 16 meters per turn or "hop walk" at 31 meters per turn, while B'borak the Plebe has an average MRM score of 5 and walks at a Humma average rate of 15 meters per turn or hop walks at 30 meters per turn. When pursued by a Quickdeath, B'borak is caught first and eaten.

BASE WALKING SPEED

To determine a character's walking speed, add the character's MRM score to the base score. Note: a Humma has two walking speeds listed; the second figure is for when conducts a spring charge attack.

BASE RUNNING SPEED

Add the character's MRM score to the base score to determine his running speed. Note: a Humma has two running speeds listed; the second figure is for a special fleeing move that is similar to a spring charge.

BASE HIKING SPEED

To determine a character's hiking speed, divide the character's MRM score by 10 then add that number to the base score.

BASE CRAWL SPEED

A character's crawling speed is normally one-fourth of their walking speed. Due to their physiology, Vrusk and Satharoids (Sathar and S'sessu) can move at half of their walking speed.

BASE CLIMBING SPEED

To determine a character's climbing speed, divide the character's MRM score by 10. Take the result and add it to the base score. The new number is the speed at which a character can climb in meters per turn.

For example, Taila Shurn, a Human woman, has an MRM score of 5. To determine

her climbing speed, divide 5 by 10; the result is 0.5. That number is then added to Base Climbing Speed number for Humans, which is 1.5 meters per turn. Taila can climb a rope at a rate of 2 meters per turn.

BASE VERTICAL CLIMB

To determine a character's vertical climbing speed, divide the character's MRM score by 10. Take the result and add it to the base score; the resulting figure is the speed at which a character can climb in meters per turn.

BASE SWIMMING SPEEDS AND LEAPING DISTANCE BY RACE

The Alpha Dawn rules treat all races pretty much equally when it comes to leaping and vaulting distances. Charles Vanelli's "Jetboots" article changed this formula and these rules are based on his work.

Table 6 now looks at swimming speeds, both in meters per turn and an hourly, long-distance rate, plus jumping (leaping) distances.

BASE SWIM SPEED

Add the character's MRM score to the base score to determine the swimming speed in meters per turn.

BASE LONG-DISTANCE SWIMMING SPEED

To determine a character's long distance swim speed, divide the character's MRM score by 10, take that number and add it to the Long-distance Swim number. The resulting figure is the speed at which a character can swim in kilometers – or even meters – per hour.

STANDING HORIZONTAL LEAP

This is the distance in meters that a character can leap horizontally from a standing start. Except for Humma, add the character's MRM divided by 10 score to the base score to determine his leaping distance. Add the Humma's whole MRM to the leaping distance.

RUNNING HORIZONTAL LEAP

This is the distance in meters that a character can leap horizontally, allowing a straight-line run of at least 15 meters before leaping. Except for Humma, add the

TABLE 6. BASE SWIMMING SPEEDS AND LEAPING DISTANCE BY RACE

RACE	BASE SWIM SPEED	LONG-DISTANCE SWIM	STANDING HORIZONTAL LEAP	RUNNING HORIZONTAL LEAP	STANDING VERTICAL LEAP	RUNNING VERTICAL LEAP
Dralasite	8 m/t	0.8 kph	1.5 m	4.5 m	0.5 m	1.5 m
Human	5 m/t	0.5 kph	1.5 m	4.5 m	0.5 m	2 m
Humma	6 m/t	0.6 kph	10 m	25 m	5 m	10 m
Ifshnit	1 m/t	0.3 kph	0.6 m	3 m	0.4 m	1 m
Osakar	20 m/t	2.5 kph	3 m	10 m	3 m	8 m
Vrusk	3 m/t	0.3 kph	1.5 m	6 m	0.5 m	2 m
Yazarian	5 m/t	0.5 kph	2.6 m	8 m	1 m	3 m
Sathar	8 m/t	1.0 kph	2 m	5 m	0.6 m	2.6 m
S'sessu	8 m/t	1.0 kph	2 m	5 m	0.6 m	2.6 m

character's MRM number to the base score to determine his running leap distance. Add the Humma's *whole* MRM to the leaping distance.

STANDING VERTICAL LEAP

Except for Humma, add the character's MRM score divided by 10 to the base score to determine his vertical leap height. Add the Humma's *whole* MRM to the leaping distance.

RUNNING VERTICAL LEAP

Except for Humma, add the character's MRM score divided by 10 to the base score to determine this distance. Add the Humma's *whole* MRM to the leaping distance.

SKILL BONUSES

RUNNING SKILL MRM BONUS

If a character learns the Running skill, not only will they have increased endurance and be able to run at top speed for a longer period of time, they will also be able to run faster. The Running skill will provide a character with a +5 MRM bonus.

So, a Vrusk female character that normally has a MRM score of 5 (her race's average) will have the equivalent of a MRM score of 10. She can walk at 20 meters per turn and run at 40 meters per turn and has a hiking speed of 6.5 kilometers per hour.

CLIMBING SKILL MRM BONUS

A character with this skill receives a +1 meter per turn movement rate when it

comes to rope climbing and vertical climbing. They can climb a ladder or stairs faster too with a +1 m/t movement rate bonus.

NEW/OLD SKILLS

Zebulon's Guide added several critical skills – Running, Climbing, and Swimming – to the Star Frontiers game. To convert these into the Alpha Dawn system, assume that they are Military PSA skills. They will provide benefits under the MRM system.

CLIMBING

Type: Military PSA

Success Rate: Automatic (STR or DEX)

This skill increases a character's climbing ability. The character now climbs a rope at a rate of 3 meters/turn and vertical surfaces at a rate of 2 meters/turn. Ifshnits can only move half this distance due to their size.

The character can use the proper equipment to climb and rappel like a mountain climber. Only one level of this skill needs to be purchased, but the character must spend experience points to purchase a first-level of this skill every six months to renew his training.

RUNNING

Type: Military PSA

Success Rate: Automatic (STA)

This skill increases the endurance of a character; he can now run at top speed for a number of minutes equal to his Strength score divided by 5, rounded up. *For example, a character with a STR score of 45 can run*

for 5 minutes. If characters walk for more than 10 hours, they move at half speed and their Dexterity scores and Reaction Speeds are reduced by half until they sleep.

The character then must rest for five minutes before running again. This skill must be renewed (as a first level skill) every six months, as if the character kept training.

SWIMMING

Type: Military PSA

Success Rate: ½ DEX + 10% per level

A character with this skill is a proficient swimmer. As such, characters can double their race's normal movement in the water. In addition, a skill check is required only in difficult circumstances (swimming in stormy seas, holding breath longer than usual, etc.).

If a character swims longer than one hour, he will lose five Stamina points for every 30 minutes he continues swimming. These movement rates can be affected by obstacles such as seaweed or coral (or alien equivalents thereof).

This skill does not allow a character to conduct any extended activities underwater, however (for that, a character needs the underwater operations skill). Be aware that characters without the swimming skill can still stay afloat and swim as indicated in the Alpha Dawn rules. They may not, however, be able to swim or stay afloat in anything other than favorable conditions.

CONVERSIONS FOR OTHER RACES

The movement rate modifier (MRM) can be used for other races that the referee may allow players to use in a campaign. For example, the Vimh are a character race that was created by R. Kevin Smoot and published in an issue of Star Frontiersman magazine.

Taking a Human character as a baseline, a Vimh character can walk at 10 meters/turn on foot or 15 meters per turn if moving on all fours; run at 20 meters per turn on foot or 30 meters per turn on all fours; and has an hourly rate (hiking speed) of 5 kilometers per hour.

Assuming a typical Vimh would have a Strength score of 45 and a Reaction Speed Score of 50. It would have an MRM score of 5.

To calculate a Vimh's base walking speed, simply subtract the average MRM score of 5, which would be 5 m/t for walking on two feet or 10 m/t if walking on all fours. You can do similar calculations to figure out the species' base running speed, hiking speed, swimming, etc.

AGE, SIZE, AND WEIGHT MODIFIERS

A character's movement rate can be altered by taking into account factors such as age, weight, and height. Yet walking and running speeds can also be calculated by basing it on a character's Strength and Reaction Speed ability scores.

Several articles about fleshing out your character have appeared in previous issues of *Frontier Explorer* and even *Dragon* magazines. One in particular was by Bill Logan called, appropriately, "Fleshing Out Your Character," in *Star Frontiersman* magazine issue 3, or one by Peter C. Zelinski called "Age and Aging in *Star Frontiers* gaming," that appeared in the April 1986 issue of *Dragon*.

These modifiers can also be applied in addition to the MRM system.

TEMPORARY BURSTS OF SPEED

In a desperate situation the referee may allow a character to gain an extra burst of speed "to move one more square" in a turn by making a Reaction Speed check. Since distances on maps in *Star Frontiers* can

be anywhere from 2, 5, 10 or even 25 meters across, if you are using the Ability-Based Movement Rate Modifier system given in this section, assume a character receives a 5-point MRM boost for that turn only.

However, every additional time that a character attempts to gain an additional burst of speed receives a cumulative penalty of -5 percent.

For example, the *Vrusk* archeologist *In'Da'N'Na* (*Indiana* to his friends in *PanGal*) is trying to outrace a huge glass sphere that is rolling at him in the narrow passage of an ancient *Tetrarch* temple. The sphere is moving along at 50 meters per turn and will catch him before he jumps clear through the exit unless he can somehow move faster.

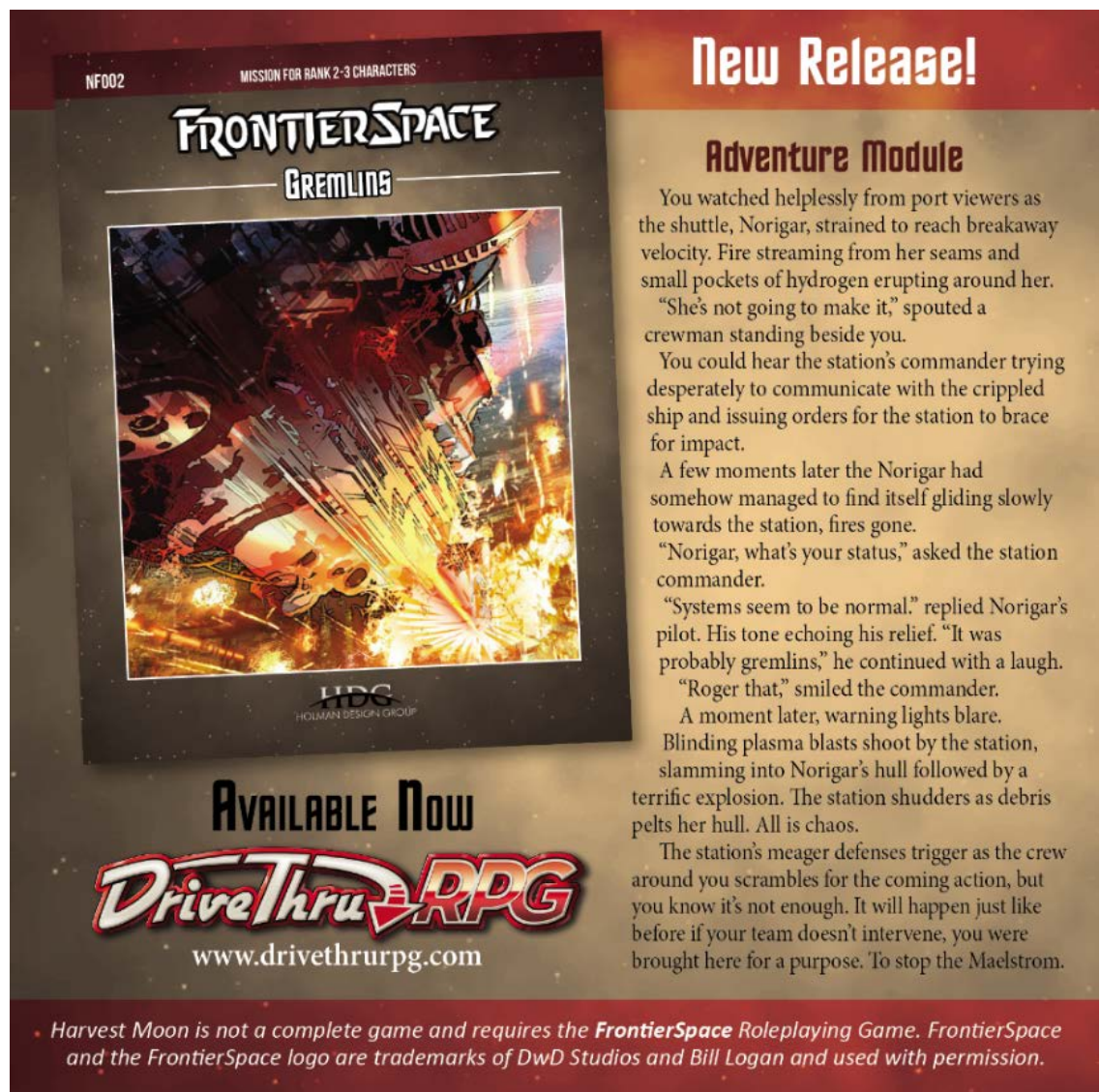
Since his ability scores are average for a *Vrusk*, *Indiana* rolls a 49 on his ability score check, which is just below his RS score of 50.

Instead of running at 35 meters per turn, he can move at 40 meters for that turn.

The next turn, he must roll below 45 percent to get that same burst of speed; he misses his roll – now 40 percent or below – on the second turn and can only run at 35 meters per turn; on the third turn, he must roll below 35 percent to get that burst of speed (the -5 percent penalty keeps piling up whether *Indiana* made his ability check roll or not.) Will he make it or be flattened by the glass sphere that is nipping at his tail?

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New Release!

Adventure Module

You watched helplessly from port viewers as the shuttle, *Norigar*, strained to reach breakaway velocity. Fire streaming from her seams and small pockets of hydrogen erupting around her. "She's not going to make it," spouted a crewman standing beside you.

You could hear the station's commander trying desperately to communicate with the crippled ship and issuing orders for the station to brace for impact.

A few moments later the *Norigar* had somehow managed to find itself gliding slowly towards the station, fires gone.

"*Norigar*, what's your status," asked the station commander.

"Systems seem to be normal," replied *Norigar's* pilot. His tone echoing his relief. "It was probably gremlins," he continued with a laugh.

"Roger that," smiled the commander.

A moment later, warning lights blare. Blinding plasma blasts shoot by the station, slamming into *Norigar's* hull followed by a terrific explosion. The station shudders as debris pelts her hull. All is chaos.

The station's meager defenses trigger as the crew around you scrambles for the coming action, but you know it's not enough. It will happen just like before if your team doesn't intervene, you were brought here for a purpose. To stop the Maelstrom.

Harvest Moon is not a complete game and requires the **FrontierSpace** Roleplaying Game. *FrontierSpace* and the *FrontierSpace* logo are trademarks of Dwd Studios and Bill Logan and used with permission.

BONES AND MORTAR

A TRAVELLER STORY

BY MICHAEL R. LAUSIER

Captain Keating settled into his chair with a sigh. Dealing with Vargr always put him in a bad mood. "I can't pay more than ten thousand credits for the grain. Cost to transport alone will eat all my profits. Besides which, it is not as if your people plan to eat it." He gave a smile which minimized a show of teeth. The level of required insult to show dominance was a tricky matter. "Unless you plan to use it yourself?"

Rrolkatea bristled slightly. The fur on his back and arms puffing at the implication. The canine Vargr did eat plants, but only in desperation or medicinal reasons. "I suppose ten thousand is reasonable" he replied, not trying to hide his teeth at all. "I shouldn't expect a runt to have much to pay with. Perhaps next time your larger litter-mates should chip in on the cargo."

Captain Keating didn't bother correcting him about the crew not being siblings. It wasn't important to point out the error, especially now that the deal was done. "Very well, I will expect the delivery this evening." He remained seated and deliberately avoided eye contact as the Vargr rose to leave. The raised tail and twitch of his ears told that he too felt the deal went well.

Captain Keating radioed down to one of his crew. "Pal, get the bay ready. Cargo's due in a few hours." Pal's real name was a little dance only the six limed Hiver could do, but for the ease of its human crew mates it chose "Friend" as a name. Its translator took "Pal" and "Friend" as the same, so the crew used the easier of the two.

"Understood, Captain" the artificial voice of Pal's translator replied.

Keating switched off the comm and put on a jacket as he left the ship. The starport was open to the atmosphere and this world was a bit chilly. He headed for the nearest bar. The most likely location of his absent crew members. They weren't alcoholics or even overly social, it was simply that after weeks on board the ship, the need to unwind was big. Besides, the starport bar was where to get a feel for the locals without being expected to follow local customs.

The bar was crowded despite the early hour. The patrons consisted of an even mix of Human crew and local Vargr. Keating spotted his crew near the back and headed in.

Devin glanced over his shoulder nervously walking down the street. He wasn't nervous for any reason in particular. Vargr tended to do this to him. He rarely traveled to non-human worlds. Hell, the Imperium didn't have many where intelligent xenos outnumbered humans, and the few that did he tried to avoid. Devin glanced up and accidentally made eye contact with one of the damned wolf-men. He quickly put his eyes back on the ground. Sweat broke on his forehead and he tensed, waiting for the confrontation. He didn't really need to worry. The Vargr in question barely noticed the scrawny human reeking of fear, but Devin continued to sweat as he scuffled quickly down the road.

He reached the post-board for the starport. The tech level here was fairly high; the board was a large holoscreen which he scanned. All the current ships docked here and in orbit, as well as cargo to haul or sell, and any other legal ship business could be found here. Ship destinations and empty staterooms were his interest today.

The *Harpy*, bound for Xaphan. A few stops in between; that might be a problem. A few extra months could cost everything. At least it was scheduled to leave port tomorrow. Devin placed a hand protectively over his breast pocket. The chip inside held all the information he had collected so far.

He was fairly certain the artifact was on Xaphan. The Vargr he had spoken with had been part of the crew rumored to have seen it in action. No one could agree on the exact planet the rumors had originated from, but his contact had been very clear on his description of its operation. Devin did not see any reason to doubt his contact's word on its location. The primitive technology on Xaphan would explain why word of its existence had spread so slowly.

Once word reached the right ears though, the Imperium would have scholars swarming out there to study it. Fortunately for Devin, he had been in the right place at the right time to overhear. Maybe with some luck he might be the first scholar to officially study it and therefore gain the right to lead the team the Imperium sends.

Devin turned from the board to find the *Harpy*.

The *Harpy* sailed silently through empty space. Its thruster plates warping space behind it slightly causing forward thrust. It had emerged from jump space about a week before and was on course to rendezvous with the port on Xephan.

Captain Keating knew the Imperium kept this starport operating to serve as a fuel and repair port for any of its passing ships. The surrounding stars were a bit too far apart to cross without it. Xephan was destined to become a busy world once the colonies spinward grew more, but for now it seemed a waste of funds. The locals fell back to barbarism during the long night. Everything this base needed other than raw materials had to come from off world.

Oh well, that worked to his advantage. He had traded the grain a few worlds back for a load of some modern entertainment equipment, as well as the power generators to run them. He had taken a pretty big hit in the trade, at least he felt he did, but this market was ripe for these goods. He should more than make the loss. Acquiring a passenger for several jumps also helped. The cost of the stateroom lined his pocket a bit. There weren't many people coming to this little slice of Limbo. It didn't qualify as Hell. Hell would be more exciting.

Pal rested on a stool in engineering. All six of its limbs were currently occupied repairing the equipment in front of it. How Humans even managed to work on such complex equipment, let alone create it, with only two manipulators was beyond it.

Pal focused all six of its eye stalks on the circuit board. It had not taken Pal long to learn the workings of Human technology. They were slightly behind the Hivers after all, but differences in thinking made solutions to the same problems different between the two species. Pal felt it had learned enough to return home and claim victory in its chosen task. Of course, there was no prize or real reward for the victory, but, like all Hivers, Pal had chosen a task to complete. Victory meant respect from fellow hive members and perhaps more resources for its next chosen task.

However, Pal was not yet ready to return home. These Humans had turned out to be much more interesting than it expected. The past few years Pal had been observing them very closely. It had tapped into the ship's security cameras and used them to watch the various doings of the crew and passengers. Pal was aware of the Human concept of "privacy" but what purpose it served or why anyone would desire such a thing was beyond its ability to understand. After all, the information it gathered watching passengers in their staterooms told Pal more about Human mating rituals than any book he could find anywhere, and that was only one aspect of humanity.

These last few months had added another item of interest for it. The one named "Devin" kept a journal on a storage chip. Pal had observed him every night making entries. It seemed he (Pal was fairly certain it was a he) was seeking an ancient piece of technology created by the race known as "The Ancients". Pal did not know the nature of this object, but desire to learn had drove it to search Devin's stateroom twice while the Human was in the galley eating. It seemed the man kept the chip hidden well, or on his person at all times. Pal hoped the opportunity to ask would arise. It knew coming forward and simply asking would reveal its observations and anger the Human, but not asking was about to drive Pal to desperation. After all, this was Devin's destination. If it didn't ask soon, the opportunity would be lost.

Ariel disembarked the *Harpy* and headed directly for Belial's Chambers, a bar known for its cheap booze and party atmosphere.

She had spent most of her life around this sector of space. Even her military career in the Imperial Marines was spent stationed on starships patrolling the spinward edge of it. She now worked aboard the *Harpy*, double duty as both security and navigation. She preferred the former but was skilled at both. The Chamber's main room was mostly empty, only a few off-duty starport personnel. The locals did not frequent the port, and port employees mostly worked daylight hours. That was fine with Ariel, she wasn't yet in the mood to bash some heads in. That would come later, after a few drinks.

Shortly after sitting at the bar she saw Pal enter. The starfish-like creature caused a few heads to turn. This was not a typical place to find one. Not just because the Hiver federation was quite a few sectors away, but bars in general. Alcohol did not affect Hivers and violence was avoided in all but last resort situations. Ariel would have considered him [no, it, she corrected herself, they were hermaphrodites] a coward and showed it little respect, but Hivers evolved a flight reflex instead of a fight or flight. She couldn't blame Pal for something evolution did.

Pal approached her and its translator interpreted its movements and spoke "Hello, Ariel. I have information you may be interested in. I must speak with the Captain, but with his approval, I believe I may have a job."

Captain Keating swore out loud. He stomped down the hall toward his quarters. He could not believe someone had outmaneuvered him. Just a month before the *Harpy's* arrival, the *Ramora* had docked with a load of almost the exact same goods. He couldn't find a single buyer at his asking price. In the end he had to settle for barely enough to cover the basic ship costs. He needed to find a way to make up for his loss or else he probably would not have the next payment for the bank on the *Harpy*.

He rounded a corner and almost ran into Pal. "Greetings, Captain. May I speak with you?" it asked.

"Not now, Pal. I have a lot on my mind," Keating replied.

"But it may solve your monetary worries."

The Captain stopped. "Pal, I think we need to have another discussion about privacy, but, for now, go ahead."

"Well, Captain, it has come to my attention that the man named Devin has been asking around the port for a guide into the wild. He is not likely to find anyone. The locals don't deal with off-worlders and the port employees are busy with the dry season here. He is offering one hundred thousand credits. Have spoken with Ariel, and if you allow us to use the ship's aircraft, I will give you my half of the pay."

Fifty thousand would make up his loss and put a little padding in his pockets. "Why would you give up your half?" Keating asked.

"My people contribute all they produce and earn to our hive in return for food, shelter, and supplies. While I cannot say I consider you and your crew my hive, you have provided me with these things and I am interested in what Devin seeks. It is not hard for me to contribute as I would for my hive."

Captain Keating thought for a moment, "Ok, but I can't afford to lose my aircraft or train new crew, so I'm coming along. You two are off the clock for the duration as well, so if anything happens it is your problem."

Pal agreed and the two went to make preparations.

Ariel sat at the controls of the air-raft. The wind blowing through her hair as they flew along propelled by the thruster plates under the craft. At the moment, the top was down so they could enjoy the fresh air. Several meters below them, fields of xeno-grass raced by. Ariel adjusted course to avoid a large herd of animals. At the sound of the craft's approach the creatures lifted their heads to investigate, revealing multifaceted eyes atop large, frog-like mouths. As one they began to bellow warnings as they quickly raced away.

"It should only be a few more miles" Devin said, "Right in that forest somewhere."

"Whoa, wait a minute, Ariel. Land before we get to those trees. Those are mortar trees. It's not safe to fly over them in the dry season." the Captain said.

Mortar trees were a local flora that grew tall and straight. Its leaves were clustered near the top, and the very top were a cluster of hollow tubes. During the dry season, gas pressure would build up in these tubes until they burst, launching seed pods about the size of a Terrestrial coconut for miles. Upon landing, the pod would crack open, releasing a pyrophoric chemical. The resulting fires soften the seed, allowing germination, as well as clearing competition, and fertilizing the soil with ash. The starport kept the surrounding area clear of mortar tree saplings, and every dry season they made a fire break surrounding the whole port.

Ariel landed just outside the forest and the group headed into the trees. The trunks of the mortar trees were covered in a calcium based, flame retardant bark. The stark white color made the forest look like a boneyard.

The group traveled on foot for a while before Devin stumbled and caught himself on a tree trunk. A small, beetle-like animal scurried over his hand and he pulled back to squash it.

Captain Keating quickly grabbed his wrist, "Hold on! Those are pop beetles. They live inside the mortar trees and ingest some of the pyrophoric material. Crushing it would make it go off like a firecracker. You'd probably lose a few fingers."

Devin's eyes widened and he walked more carefully as they moved on.

A few miles into the forest the group found a circular clearing. Devin spoke up, "Ok, this is it. Hold back a minute and we can analyze our next move. The people who saw this in action say it is a functioning disintegrator. They didn't get closer than the edge of this clearing."

In the center of the clearing stood a tall, white tower. From a distance, or the air, it would have appeared to be a dead mortar tree, but from the edge of the clearing it could clearly be seen that the base widened before reaching the ground, the tubes on top were too small and numerous, and the surface was too smooth and glossy. This was clearly not a natural object. As the group walked the edge of the clearing, looking for clues about the object, a small flock of avian creatures flew overhead. A



IMAGE BY JERRY BOUCHER

beam shot from the top of the tower, followed by another, and another. One after another, the creatures vanished as the beam hit them.

Captain Keating's jaw dropped, "They were right, a disintegrator. I could make a fortune from the finder's fee," he muttered to himself. To Devin he asked, "How do we get to it? I don't want to go up in smoke here."

"I'm not sure. To be honest, I hadn't thought this far ahead. I have been searching so hard for this, that I guess I just figured getting up to it would be obvious."

The Captain frowned and stood deep in thought. Another flock passed and was shot into nothingness.

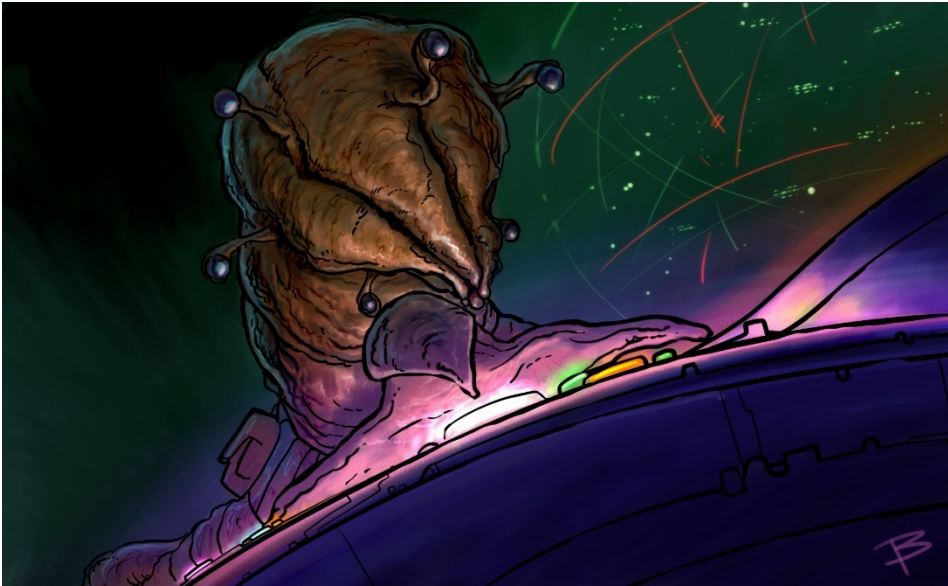
"Captain," Pal spoke, "I have noticed an odd thing which might help. The beams seem to decrease in strength with each shot when fired rapidly and the pause between shots increases. After the long pause between flocks, it started over. I believe it may only have a limited supply of energy that requires a recharge period. If we provided a target that needed a large amount of energy, it may provide us with an opportunity to reach the base of the tower."

The Captain thought for a moment, weighing the monetary loss against the potential gain. He then punched instructions into his wristcomp, programming the aircraft's autopilot to fly in hard and fast from the opposite direction. He told everyone, "Get ready to run."

As the beam flew from the tower, they all took off running. Pal used all six of its limbs to propel it. As they reached the tower, there was a sharp bang as Devin accidentally stepped on a pop beetle. He screamed as he tumbled forward and a beam from the tower hit him before he even hit the ground. In the blink of an eye, he was reduced to a cloud of atoms.

The others pressed against the tower to remain out of the gun's reach. An iris opened in the wall as soon as it was touched, revealing stairs leading down. "Come on!" The Captain yelled, "There must be a way to shut this thing off."

Ariel took the lead as they descended and entered a small room with a large, raised platform at one end. In the center of the room was a control panel covered with buttons and screens giving readouts in an unknown language. Above the panel was a holographic display of what appeared to be the surrounding stars. Ariel marveled at the clarity of it. Even the holograms she had seen in the marines weren't close, and those were the best the Imperium had to offer. She approached the display and reached out to touch one of the stars. The display immediately zoomed in on it. Strange symbols floated next to it and its planets. Other objects could be seen, such as asteroids, comets, and moons. Some of the objects were highlighted in red. Ariel touched one and the display zoomed in closer. It became obvious it was a starship. Ariel's face whitened, "Captain, this is the Issacson. I served under Captain Seavers



for eight years on it. I think what we are looking at is a real time display of the sub-sector."

"WOO HOO!" Captain Keating yelled. "This is worth a fortune! Pal, see if you can figure out the control panel. Ariel and I will see if we can find an access panel to shut down the weapon system."

The Hiver approached the panel and began to examine it as Ariel and the Captain

began to examine the wall behind the raised area of the room. A button began to flash on the panel. Two of the Hiver's eye stalks watched the Humans, two examined the panel, and the final two remained locked on the button. Curiosity overtook caution almost at once and it reached a manipulator forward to push the flashing button. A ripple of light and electric crackle filled the room as the humans

vanished. All six of its eye stalks turned to the spots where they had stood. It seemed it had found an internal disintegrator. Maybe a garbage disposal. It decided to rule that button out as an off switch and turned back to the panel.

One minute Ariel and the Captain were standing on the platform, then came a moment of disorientation and the feeling of being turned inside out, then they were on the deck of a starship.

Ariel recovered quickly and took a combat stance as she looked around. The bridge crew of the ship stood dumbfounded and staring. The familiar voice of Captain Seavers spoke, "What the...Ariel?"

Ariel turned to face him and her knees went weak as she realized they had just been teleported instantly onto the bridge of a moving ship over ten light years from where they started. She turned to look at Captain Keating as he doubled over, alternating between explosive laughter and screams of "I'M FLARKING RICH!!!!!!!"

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**THE
ESCAPE
PLAN**
EPISODE #9



A FEW SECONDS LATER

