Ubiquitous Obliquity

#2

May 15/August 12, 1998

Boilerplate

(Gratuitous Narcissism)

Forewarned

Right. So I'm on to my second stab at this. My last issue proved the maxim that a little bit of knowledge is a dangerous thing. I'd gathered from context that it was supposed to be a space station theme issue... but I didn't manage to gather that it was for a *specific* space station. Oh well. No major civilizations were destroyed.

Last time around I mentioned that I was building a ~TL10 future history, of which Tsiolkovsky High would be a part. This is still in progress, but it has been moved to the back burner. Since I wrote that issue, I started up a new PBEM game entitled "The Ashes of the Phoenix" set in a TL12 version of David Pulver's Phoenix Sector from *GURPS Space Atlas 4*. To the end of that game, I whipped out my spreadsheet (unused since I last taught Physics 1 at Caltech) and designed some starships for the game using *GURPS Vehicles*. Of course, the characters have yet to come across most of these ships, but vehicle design using *Vehicles* seems to be one of those addictive little things.... (One does learn quickly to use a spreadsheet, unless one is sure that one can do everything exactly right the first time through.) To avoid having the submission thick with only vehicles, I've also included a robot and an alien race designed for that game.

One of these years I will have to get an article that will convince you all I'm not completely focused on outer space science fiction.

In real life, I played the role of Charlie Cowell, and also stage managed a production of *The Music Man* at a local community theatre, which was stressful enough that I thought I'd never do a show again. Well, I have... it was a 1-week wonder, where I had nearly half of the lines and first saw the script a week before the (single) performance. That was a lot of memorization in a short period of time. I probably won't be doing another show for a while, but you never know.

In other personal news, my sister got married on August 8, and I played violin and viola in the service. What's more, I will have moved by the time you get this (and I've included the new address in *Boilerplate* to the left). This house was purchased.... This being the SF Bay Area and me being less than two years out of graduate school, my parents are helping me with the down payment, but I don't feel *too* guilty since it was their idea.

Everybody have fun. As always, if for whatever ill-founded reason you want to read about my games or my 1st edition AD&D conversion, visit Omar's Home Page at "http://www.wco.com/~rknop/Omar".

The Phoenix Federation Navy

The Federation Navy is described briefly on page 9 of *GURPS Space Atlas 4*. For my TL12 version of the Phoenix Sector, I've engaged in a bit of military escalation. The high end starship in the Navy are the *Planet* class battleships. I have not yet attempted even a first pass at designing one of these guys with *Vehicles* for my campaign, but when I do so they'll be large for battleships (perhaps even worthy of the name "dreadnought"). Suffice to say that they will be huge, well armored, and well armed. They'll have docking bays for a great number of fighters, and perhaps even large enough to dock a *Polaris* class corvette or two.

The core of the navy is comprised of the *Vengeance* class cruisers (destroyers according to *Space Atlas 4*, but they grew for my campaign) and the *Polaris* class corvettes. I've made a pass at designing both of these ships, although I only include my design for the *Polaris* class corvette here. This latter design is probably used not only by the Navy, but also by the Rangers and the Patrol.

In addition to the classes of starships mentioned in the book, since I was trying to create something of a cinematic space opera type campaign, it was important that there be one-man fighters. I've dubbed the standard Federation STL fighters *Meteor* class. In addition, before designing the docking bay of the corvettes and cruisers, I designed a standard shuttle, which is roughly the same size as the fighter (but not nearly as fast or strong). My current working design for both of these vehicles is included here. I also designed a couple of antimatter missiles, one which a fighter can carry a good number of, and a larger one that would be launched from the main Navy vessels.

I probably ought to send e-mail to Hunter Johnson. Page 9 of *Space Atlas 4* says that the headquarters of the Federation Navy is on Watchtower, in the Chelsea system. However, there is no Watchtower in the Chelsea system. There is a Watchtower, a rockball in a 10 AU orbit around a K0 star, in the Sheol system, which claims to have a Naval base.

The Ashes of the Phoenix

The game for which I've built these ships is a *GURPS Space* game based on the Phoenix Sector of *GURPS Space Atlas 4*. This being GURPS, I made a few modifications to the world before beginning the game. I wanted this game to be a high-powered, cinematic, space opera sort of game, so realism isn't tantamount. When I do get around to running the Greater United Nations game, that will be harder (probably "semirigid"), as well as lower technology, science fiction.

In my game, the tech level of the Phoenix sector is pretty much straight TL12. This is in contrast with the "default" TL10 of *Space Atlas 4*. Both the Phoenix Federation (including the alien D'ken) and the Phoenix Domain are at this tech level. The mysterious Ilshani seem to have slightly higher technology (although they haven't come into the game as of yet, so it's very vague).

Two FTL drives exist. The jump drive is older technology, but faster. You can jump instantaneously along any of the standard Phoenix sector jumplines. Warp drives are newer technology. Jump drives tend to be huge, meaning only corvette sized or larger ships can have them. Smaller ships can have warp drives. Warp drives are practically limited to 1 pc/day. At higher speeds, nonlinear effects set in which require more and more power to obtain less and less acceleration.

So far, the game has been centered in the Phoenix Federation, specifically the planet of Chelsea.

The galaxy in which the Phoenix Federation sits is an anarchy. Basically, what this means is that local governments are most important. It allows me to use the Phoenix Sector as a campaign background without having to worry about where it sits in any larger hierarchy, but giving me the option to branch out into other to-be-defined sectors in the future.

Standard Weapons

In order to simply both the description of these vehicles here, as well as the construction of the Vehicles for the Federation Navy, a handful of standardized weapons have been developed which can just be plugged into the vehicles wherever there is space.

There are two standardized antimatter missiles:

Long Range Heavy Antimatter Missile

This missile is the heavy duty, strategic, ship-destroyer nuclear missile of the Phoenix Federation arsenal. It is basically an intelligent vehicle capable of delivering up to a 1 megaton antimatter warhead at slower than light speeds. (Starships carrying these missiles are how you deliver them at FTL speeds.) The missile is versatile; it may be outfitted with a small tactical warhead, or a large strategic warhead. Because smaller missiles exist for tactical warheads, more often this missile will be used with larger warheads. The TL12 nuclear power unit in this missile can power the missile for 10 years. If you are willing to wait the travel time (given the 16g acceleration of the missile), this missile is suitable for interplanetary bombardment all by itself. Indeed you could bombard neighboring star systems.

The missile has its own reactionless drive, which is maneuvered to its preprogrammed target by its robot brain. (If the robot brain is sentient, one had better make sure it has a disadvantage such as On The Edge or Fanatic.) There is a neutrino communicator built in, so that those with the proper authentication codes (hopefully only Federation Navy personnel) may command the missile to abort its mission or change its target after it has already been launched.

The standardized 250mm bore size launch tube for this missile weighs 1,2000 lbs, is 24 cf in size, and costs $8,750.

Propulsion Systems: TL12 Super Reactionless Thruster (thrust 4,000lbs).

Weaponry: TL12 Antimatter Warhead (Yield 0.0001kton - 1 Mton), modest size, 150mm diameter

Instruments and Electronics: TL12 Neutrino Communicator, Medium Range; AESA, forward facing, Range 50 miles (Scan 17, +6 in space); IFF system; Small computer (Cplx 6, Compact, Hardened, High Capacity, Robot Brain (DX 11, IQ 9), Software: Computer Navigation, Datalink, Targeting, Robot Skill Astrogation-12, Robot Skill Electronics Op (Sensors)-16, Robot Skill Piloting-14)

Power Systems: NPU (Power 250 kW, Endurance 10yr)

Surface and Structure: Standard medium weight robotic structure, no streamlining; Advanced Laminate Armor (DR 100), Advanced Ablative Armor (DR 300); Sealed Hull

Surface and External Features: Basic Emission Cloaking, Intruder Chameleon

Statistics: Empty Mass 257lbs; Total Volume 2.96cf (cylinder 250mm diameter x 5.6ft long); Total Surface Area 15.5ft; Body HP: 23; Structural HT: 12; Power Usage 214kW; Price $97,000 + cost of warhead; sAccel: 15.6g=341 mph/s

Micronuke Antimatter Missile

This smaller, tactical nuclear warhead. It was designed for the Meteor class long range STL fighter. It's a small, light, intelligent missile, outfitted with a robotic brain and a reactionless drive, capable of chasing its prey for several hours before its energy cell runs out. It may carry any of the micronuke sized antimatter warheads.

The standard 150mm bore diameter launch

tubes for these micronuke missiles weights 120lbs, is 2.4cf in size, and costs $2,000.

Propulsion Systems: TL12 Reactionless Super Thruster (thrust 400lbs)

Weaponry: TL12 Micronuke Antimatter Warhead (Yield 0.0001kt-0.1kt, modest size, 15mm diameter)

Instruments and Electronics: TL12 Neutrino Communicator, Short Range (2,000mi); AESA, forward facing, Range 10mi (Scan 17, +6 in space); Small Computer (Cpx6, Compact, Hardened, High Capacity, Robot Brain (DX 11, IQ 9), Software: Computer Navigation, Datalink, Targeting, Robot Skill Astrogation-12, Robot Skill Electronics Op (Sensors)-16, Robot Skill Piloting-14)

Power Systems: TL12 Power Cell (5.4x105 kWs=150 kWh)

Surface and Structure: Standard light weight robotic structure, no streamlining; Advanced Ablative Armor (DR 100); Sealed Hull

Surface and External Features: Intruder Chameleon

Statistics: Empty Mass 29lbs; Volume 0.5cf (cylinder 150mm diameter x 0.5' long); Total Surface Area 4.3sf; Body HP: 3; Structural HT: 12; Price $48,400 + warhead; Power Usage 22.6 kW; Endurance 6.66 hours; sAccel 13.4g=293 mph/s

Beam Weapons

Standard beam weapons come in a variety of sizes for different sized ships. The "backbone" beam weapons of the arsenal are X-ray lasers and the newer fusion beams. In addition to these beams, large ships will also be outfitted with a gravity beam, and the most modern ships will be equipped with an antiparticle beam.

The high rate of fire of X-lasers coupled with the armor-piercing ability of laser autofire makes them effective weapons against armored vehicles. However, sometimes it's fun to just vaporize your opponent with the sheer raw power of a good heavy fusion beam.

Beam Weapons Table

Name	Malf	Type	Damage	SS	Acc	1/2D	Max	RoF	Wt.	Cost	Power
Light fusion beam	Ver.	Spcl.	6d×231	25	22	17,000*	51,000*	1	1,000	720,000	1,080,600
Medium fusion beam	Ver.	Spcl.	6d×666		26	96,000*	288,000*	1	17,000	9×10^6	10,320,000
Heavy fusion beam	Ver.	Spcl.	6d×2100		30	304,000*	912,000*	1	170,000	9×10^7	102,120,000
Light Compact X-Laser	Ver.(Crit.)	Imp.	6d×18(2)	25	23	13,000†	39,000†	8	560	430,000	12,650
Light Long-Range X-Laser	Ver.(Crit.)	Imp.	6dx18(2)	30	27	51,000†	153,000†	8	2,200	420,000	40,000
Medium X-Laser	Ver.(Crit.)	Imp.	6dx130(2)		30	180,000†	540,000†	10	100,000	2.7×10^7	1,700,000
Heavy X-Laser	Ver.(Crit.)	Imp.	6dx227(2)		32	310,000	936,000†	10	310,000	8×10^7	7,800,000
Antiparticle Beam	Ver.		6d×1054(2)		27	47,000†	141,000†	1	42,000	2.5×10^7	31,650,000
Gravity Beam	Ver.		6d×40		31	216,000†	648,000†	1	200,000	7.2×10^7	27,000,000

Notes: * Range is ×10 in space. † Range is ×100 in space. All ranges are in yards, weights are in lbs, costs are in $, and powers are in kW.
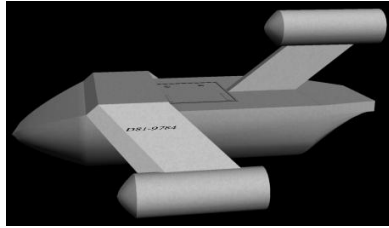
The Meteor Class Fighter

This is the basic fighter used by the Phoenix Federation Navy. It's designed for one purpose: to project force over in-system distances. It's small (and thus relatively hard to detect), it's fast (i.e. accelerates well at STL speeds), and most significantly, it carries 50 micronuke antimatter missiles, in addition to a respectable X-ray laser.

Possession of several of these fighters gives a battleship or fleet commander a lot of tactical options for taking out an enemy. Upon contact with the enemy, the first thing he would probably do is scramble his fighters. There is no point keeping them locked up in fighter bays where a single nuclear missile from the enemy could take them all out. Fighters would probably *not* fly in close formation, again so that they all can't be taken out by a single large nuclear warhead. Rather, they would spread out, to bring their forces to bear on an enemy ship from as widely spaced directions as possible.

Against large ships, fighters are best used getting as close as possible before launching several antimatter missiles. That gives the enemy as little time as possible to detect and destroy the missiles before they can harm him. Against enemy fighters and incoming missiles, again the micronuke missile provides good options, but in these cases the X-ray laser may be of more use.

Although designed as a space fighter, TL12 contragrav technology makes it easy to get space ships to work also within an atmosphere. As such, these fighters make good delivery systems for tactical nukes against planet-based military targets.

Meteor Class Long-Range STL Fighter

Subassemblies: Body; full rotation pop turret (for sensor suite); 3 pods (for reactionless drives)

Propulsion Systems: 3 TL12 Reactionless Super Thrusters (thrust: 80,000lbs each); Contragrav Generator (lift: 40,000lbs=50ton)

Weaponry: Light Compact X-laser (faces forward, full stablization); 150mm Launch Tube (for micronuke AM missile)

Instruments and Electronics: Neutrino Communicator, short range; Radio, long range, Scrambler; Gravitic Communicator, long range, Scrambler; AESA, Range 1,000mi (Scan 29, +6 in space), in pop turret; PESA, Range 100mi (Scan 23), in pop turret; AESA, Range 100mi (Scan 23, +6 in space), forward facing; PESA, Range 50mi (Scan 21), forward facing; Gravscanner; IFF; Advanced Radar/Laser Detector; Minicomputer (one terminal)

Crew and Passengers: Computerized Controls; Normal Crew Station, short occupancy, G-seat, G-web; Limited Life System (4 man-days endurance)

Power Systems: Antimatter Reactor (power 40,000 kW); Antimatter Storage Bay (capacity 40g); Rechargable Power Cell (1e7 kWs; provides for X-laser for 23 turns).

Access, Cargo, and Misc Space: Access space for contragrav generator, AM reactor, Energy Bank; Missile Bay (room for 50 micronuke AM missiles)

Surface and Structure: Turret #1 Volume 13.6cf (30° slope on 4 faces), Area 34sf, 103 HP; Each Pod volume 32cf, Area 60sf, 181 HP; Body Volume 550cf (Superior Streamlining, 30° slope on 3 faces), Area 403sf, 1210 HP; Advanced Laminate Armor (DR 750); Advanced Ablative Armor (DR 2000); Sealed Hull

Surface and External Features: Basic Emission Cloaking; Intruder Chameleon System; Deflector Field; Force Screen (DR 250)

Statistics: Empty Mass 28,000 lbs; Laded Mass 29,000 lbs; Total Volume 560cf (Size +4); Total Surface Area 620sf; Structural HT 12; Price $5,100,000; Power Usage 16,000 kW; sAccel=8.2g (180 mph/s)

Ariel Performance: Stall Speed: 0; Aerodynamic Drag: 60; Top Speed: 5,000 mph: aMR: 4.5; aSR: 4; aAccel: 8.2g (180 mph/s); aDecel: 18 mph/s

Sherpa Class Space Shuttle

Subassemblies: Body, two Landing Skids (Pods?)

Propulsion Systems: 2 TL12 Reactionless Super Thrusters, each thrust 20,000lbs, in skids; Contragrav Generator, lift 40,000lbs.

Weaponry: X-Ray Laser, compact, faces forward, Output 2,000kJ, Damage 6d×6(2), 1/2D 4,000yd, Max 12,000yd, Acc 20, full stablization

Instruments and Electronics: Neutrino Communicator, short range (2,000mi); Radio, Long Range (50,000mi), scrambler; Gravitic Communicator, Long Range (100,000mi), scrambler; 2 AESAs, forward and backward facing, Range 100mi (Scan 23, +6 in space); 2 PESAs, forward and backward facing, Range 20mi (Scan 21, +6 in space); Inertial Navigation System; IFF; Advanced Radar/Laser Detector; Minicomputer, complexity 7, 2 terminals

Vehicle Access: Crew Door, near crew stations, forcelock; Cargo Ramp/Door, in back, 3yd×3yd forcelock

Crew and Passengers: Two Room Crew Stations, G-seat, gravity web; 10 Roomy Seats, G-seat, gravity web (seats may be removed for 600cf of cargo space); Grav Unit (27,000cf capacity, 0-3g)

Power Systems: Antimatter Reactor, power 8,000 kW; Antimatter Storage Bay, 8g capacity, 5yr endurance; Energy Bank, 10^6kWs (provides for X-Laser for 46 turns)

Access, Cargo, and Misc Space: Access space for contragrav generator, antimatter reactor, energy bank; Cargo bay (200cf); 44cf empty space in skids

Surface and Structure: Skids (total) Volume 60cf, area 92sf, 272 HP; Body Volume 1100cf, Area 640sf (good streamlining, 30° slope on one face), 1921 HP; Heavy frame, standard materials; Advanced Laminate Armor (DR 200); Advanced Ablative Armor (DR 1000); Sealed Hull

Surface and External Features: Basic Emission Cloaking, Intruder Chameleon, Deflector Field

Statistics: Emtpy Mass 16,300lbs; Payload 1 (2 crew, 10 passengers, 4,000lbs cargo), Loaded Mass 22,700lbs; Payload 2 (2 crew, 16,000lbs cargo), Loaded Mass 32,700lbs; Total Volume 1,160cf (size +4); Total Area 730sf; Structural HT 12; Price $1,160,000; Power Usage 5,740 kW; sAccel empty 2.4g; sAccel Load 1 1.7g; sAccel Load 2 1.2g

Aerial Performance: Aerodynamic Drag 300; Top Speed 600 mph; aMR 4; aSR 5; aAccel=sAccel; aDecel 16mph/s

Sherpa Class Space Shuttle

What can I say? It's a TL12 naval pickup truck.

The Sherpa class shuttle is the basic STL small shuttle used for moving small amounts of people and stuff around. Although one person is adequate to crew the shuttle, there are two crew stations to allow for standard military redundancy. Ten additional crew seats allow for transportation of passengers, starship crew, or a squad of marines. The seats may be removed to allow transportation of a fair amount of cargo.

The shuttle is useful for ship to ship, ship to space station, and ground to orbit transportation. The contragravity generator means that the shuttle can easily land on planets with up to 1.25g (assuming a full load). The larger ships of the Phoenix Federation navy all have vehicle bays or hangar decks suitable for docking several of these shuttles.

As its name implies, the shuttle is designed for hauling people and equipment around. Although it's equipped with a reasonable thickness of ablative armor, it does not have heavy weaponry. Although its X-Laser is suitable for vaporizing civilians, it doesn't have much hope of penetrating the armor on a ship designed for fighting. The shuttle does have stealth features, as well as halfway decent acceleration, so while it won't do well in a head-on fire fight, it might serve as a vehicle to transport people and equipment in and out of touchy situations.

The Polaris Class Corvette

Together with the *Vengeance* class battleships, these ships form the backbone of the Federation Navy. On the large side for a corvette, the *Polaris* class ships might also be considered small destroyers.

These ships are good, general purpose small ships, sent on any number of missions which don't require the heaviest of firepower. Equipped with both a jump drive and an efficient warp drive, a *Polaris* corvette may go anywhere in or out of the Phoenix sector that any other ship may go. With a relatively good slower than light acceleration for a larger naval ship, these corvettes also make good in-system transport ships and fast-attack boats.

Polaris class ships have a space dock, which may serve as a hangar bay for either four Meteor class fighters, or four standard Federation shuttles, or any combination of the two. This space dock opens out into space at the aft of the ship. Although, as a space dock, it may be pumped out, normally a forcelock allows the maintenance of an atmosphere when the hangar doors are open.

A *Polaris* ship in good shape may be run by as few as one or two people. There are five crew stations on the bridge, any of which can be configured to control any of the ship's functions. However, a standard crew compliment for the ship is 34. This includes one Captain and two command officers (Commanders and Lieutenants), three pilots, three astrogators, six crewmen competent as sensor operators, communicators, and gunners, two mechanics/engineers, one medic and one assistant, one support person (cook), four fighter and/or shuttle pilots, and a standard complement of 10 Marines (including one officer or NCO). The captain and command officers each get a cabin to themselves; everybody

Polaris Class Corvette

Subassemblies: Body; Turret #1 (360° rotation, atop body); Turret #2 (360° rotation, below body); two Pods (for reactionless drives)

Propulsion Systems: Two Reactionless Super Thrusters (thrust 1,500,000 lbs each), in pods; Jump Drive (capacity 2×10^6 lbs, 3.6×10^9 kWs/jump); Warp Drive (WTF 1000); Contragrav Generator (Lift 2×10^6 lbs)

Weaponry: Light Fusion Beam, full stablization, unversal mount, in Turret #1; Light Long Range X-Laser, full stablization, unversal mount, in Turret #2; 250mm Launch Tube; 150mm Launch Tube

Instruments and Electronics: Gravitic Communicator, extreme range (10^7 miles), scrambler; Neutrino Communicator, very long range (2×10^6 miles); TL12 Radio, extreme range (2×10^6 miles), scrambler; AESA, range 10,000 mi (scan 35, +6 in space), forward facing; PESA, range 1,000 miles (scan 29), forward facing; Multiscanner, range 2,000 mi (scan 31); Gravscanner, range 200 mi (scan 25); IFF; Inertial Navigation System; Laser/Radar Detector; Area Radar Jammer, jam: 14; Deceptive Radar Jammer, jam: 10; Mainframe Computer, complexity 9, 20 terminals, Software: Personality Simulation, Routine Vehicle Operation, *et al.*

Misc. Components: Full Fire Suppression System; Tractor/Pressor Beam (ST 1000); Complete Workshop; Sick Bay, 3 automeds, 2 daignosis tables; Mess Hall (room for 50 people); Crew Forcelock (3yd×2yd); Cargo Bay Forcelock (6yd×6yd); Hangar Forcelock (6yd×6yd); Space Dock (capacity 5,500 cf: 4 Meteor Class fighters or shuttles)

Crew and Passengers: 5 Roomy Bridge Crew Stations, crasheweb, G-web, computerized controls (Captain, Pilot, Astrogator, 2 Sensor Op/Gunner/Communicator); 25 normal cabins; Total Life System for 50 people (includes food); 3 Grav Units (capacity 81,000 cf, 0-3g); Grav Compensator (capactiy 2×10^6 lbs, up to 2g)

Power Systems: Antimatter Reactor, power 10^6 kW (fuel 0.2kg/year); Antimatter Storage Bay, capacity 1kg; Energy Bank, 4e9 kWs capacity

Access, Cargo, and Misc. Space: Access space for Jump Drive, Warp Drive, Contragrav Generator, Antimatter Reactor, and Energy Bank; 10,000cf misc space (halls, etc.); 10,000cf of cargo bays

Surface and Structure: Turret #1 Volume 35cf, Area 64sf, 387 HP (fair streamlining); Turrent #2 Volume 77df, Area 109sf, 654 HP (fair streamlining); Each pod volume 660cf, Area 455sf, 2729 HP (fair streamlining); Body Volume 94,000cf, Area 12,000sf, 74,600 HP (fair streamlining, total compartmentalization); Advanced Laminate Armor (DR 1000); Advanced Ablative Armor (DR

4000); Sealed Hull

Surface and External Features: Basic Emission Cloaking, Intruder Chameleon, Deflector Field, Variable Force Scren (DR 250)

Statistics: Empty Mass 1,220,000 lbs; Loaded Mass 1,544,587 lbs (Payload= 34 crew, 4 fighters, 200,000 lbs cargo); Total Volume 95,700cf (size +8); Price $118,000,000; Power Usage 350,000 kW; Structural HT 12; sAccel 1.9g=42mph/s
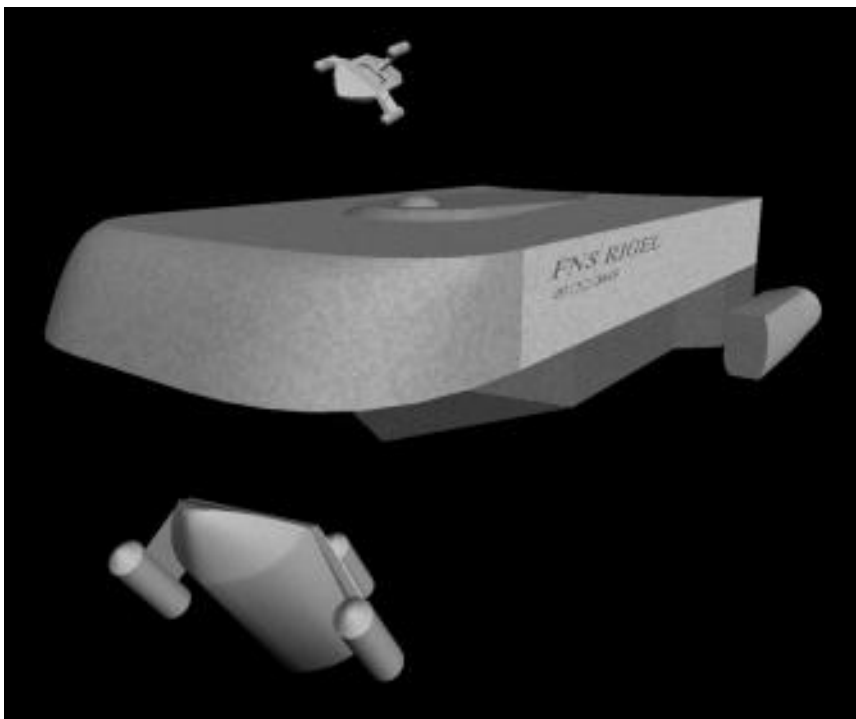
The Polaris Class Corvette (continued)

else is stuck with a roommate.

The bridge has five stations. One is for the Captain. The Federation's philosophy is that the Captain should be able to control anything on his ship should he want to. However, he should not be required to perform any function at any given time, so that he may keep his head clear of minutiae in order to keep a good clear tactical overview of the situation at all times. The Captain's crew station, consequently, is usually configured for tactical and status displays. The two command officers sit at the Captain's station during their shifts (assuming a 3-shift rotation). There is one crew station each for the pilot and the astrogator, although again each crew station may be reconfigured to be anything. Finally, there are two crew stations for crewmen who serve, as necessary, as gunners, sensor operators, or communicators.

Plagiarism is the Sincerest Form of Flattery

This robot was created on the fly. Following a brief gun battle near an out of the way hangar at Locke starport, one of the characters fled the scene to avoid being picked up by the Patrol. Although he is your basic cinematic Space Hero, probably perfectly capable of escaping any sort of ultra-tech security system, he made a blunder and got a security/monitoring robot on his tail. Since the game was a PBEM, I had time to break out *GURPS Robots* and design a robot before telling the player the results of his actions.

I lifted the name and basic design of this robot from Larry Niven's story "Cloak of Anarchy". The primary function of the robot is to fly around whatever area it was designed to secure, and to keep an eye on things. It's radio combined with its enhanced sensors allow it to transmit video of anything it observes back to a Patrol station. It's built in electron pistol (probably most often used as a stunner weapon in the e⁻ pistol's electrolaser mode) allows it to subdue anybody whom it decides is violent and in immediate need of subdual.

TL12 reactionless drives make designing slick, quiet, small flying robots quite easy. Indeed, it almost seems like cheating. The one issue I had with this was figuring out what the robot's effective Dodge score ought to have been. This guy's got a very high top *Speed*, but it takes the robot 20 seconds to accelerate up to that speed. As such, it doesn't make sense to use the top speed as a basis for an ungodly high Dodge score. Using one second's worth of acceleration as a Dodge score gives a rather low value, suggesting that perhaps the design needs to be tuned up.

In any event, the character waxed the copseye who was chasing him, and made his escape after frightening several mechanics working on a *Sherpa* class shuttle.

The Copseye TL12 Security Robot

Brain: Small Brain (complexity 6); Reflex Booster +3; Software: Skill Program, Beam Weapons: e⁻ pistol, 4cp, skill 16, complexity 4; Datalink

Sensors: Basic Sensors; Infrared Vision; Laser Range Finder; Night Vision; 360° Vision; Bioscanner

Communicator: Basic Communicator; Voice Synthesizer; Radio, 500mi Range; Cable Jack; Bullhorn

Propulsion System: Reactionless Thurster with Vectored Thrust (motive power 2 kW, thrust 40lbs)

Weaponry: TL12 Electron Pistol (Damage 17d+1 imp, SS 11, Acc 10, Rof 3~, Shots 30/C, 1/2D 990, Max 2,640, LC 2; also functions as electrolaser pistol)

Miscellaneous Components: Siren, Spotlight, GPS, Inertial Compass, Projector

Power System: Energy Bank (2 rechargable D cells, Power 30 kWh. Good for 15h continuous operation without use of e⁻ pistol, or for 300 shots of the gun.)
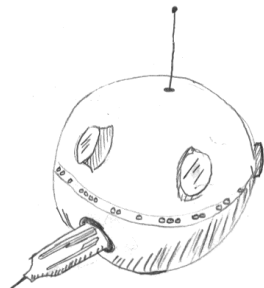
Area: 4sf

Structure: Heavy Frame, 6lbs

Hit Points: 12

Armor: TL12 Metal Armor, DR 20, PD 4

Statistics: Design Weight: 31lbs; Price $10,450; Body ST: 159?; DX: 14; IQ: 9; HT: 12; Acceleration: 0.29g=~3 yd/s/s=6.4mph/s; Top Airspeed: 65

You have the right to remain silent. Anything you say can and will be used against you...

Ulicts

Ulicts are large, bipedal insect-like creatures which, despite numerous differences, remind humans of giant ants. They have a segmented body, two narrow but powerful back legs, and two forearms that end in hands with what can pass for fingers. The typical Ulict stands between 7.5' and 8' tall. Their body is covered with a ebony colored carapace that is yielding rather than rigid, providing natural armor. Aside from large protuberant monochromatic black eyes and a pair of short olfactory antennae, their faces appear mostly featureless, and as such their expressions are completely unreadable to members of other species. Sharp claws which protrude at the elbows and knees provide vicious natural weaponry for hand-to-hand combat.
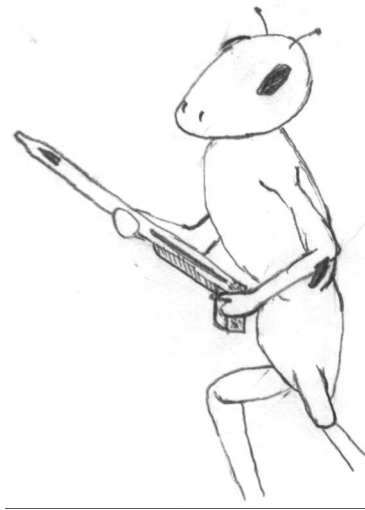
Advantages and Disadvantages

Ulicts have ST +3 (30 points), IQ -1 (-10 points), and HT +1 (10 points). The have the racial advantages Soft Carapace (PD 1, DR 2; 31 points), Sharp Claws (25 points), Composed (5 points), Single-Minded (5 points), Acute Taste & Smell +3 (6 points), and High Pain Threshold (10 points). The have the racial disadvantages Hive Mentality (-20 points), Inconvenient Size (-10 points), Callous (-2 points), and Racial Reputation (Dangerous uncaring potentially violent single-minded brutes, -10 points). The net cost for an Ulict character is 66 points.

Psychology

Although the Ulict race does not form a true hive mind, the Ulict mind is hardwired to function first and foremost as a member of the hive. One would think nothing of laying down his life to protect the hive. Each member of the race is capable of individual initiative, but initiative is normally only employed to carry out orders and instructions as quickly and efficiently as possible. An Ulict knows his place within the hive, and doesn't think to question it. Those few who do exhibit independence or excessive ambition are seen by the rest of the race as dangerously deviant, and are typically destroyed. An Ulict

Origins

This race was created in collaboration with Keith Bilafer, the player in my *Ashes of the Phoenix* game who is playing an Ulict character. This race may be based on a standard *Traveller* race known as Phraints. I am not very familiar with the classic Sci-Fi roleplaying game (I was playing mostly AD&D back then), so I cannot say how similar Ulicts are to Phraints. However, Keith first described the character as one he had played years ago in a *Traveller* game. We modified the nature of the race for purposes of my game and my campaign.

Keith's character has a number of other secrets, however, to the point that it took some creativity to keep his character from getting to out of balance even for the high-powered cinematic game that I'm running. Most of the other characters in the game are built on 250-300 points (and all are outwardly human).

Ad/Disad Rationalization

The Ulict size is on the small side of the stated border for being eligible for the "Inconvenient Size" disadvantage. However, I decided that for my campaign, the disadvantage does apply to the character. It is as much inconvenient shape as inconvenient size. Although aliens of all sorts may be found in the Phoenix Sector of my game, the vast majority of the population is comprised of Humans and Malikithi. The Ulict body shape is quite different in detail from either of those races. As such, standard equipment (including building and spacecraft accommodations) designed for "most people" might be uncomfortable at best for an Ulict.

The Ulict's carapace was downgraded to "soft" (PD 1 instead of 2) in order to keep its racial point cost from getting too far out of line. One thing that distresses me about GURPS is point costs for natural

armor. In both the *Compendium I* and in *GURPS Robots*, armor costs the same number of character points at all tech levels. At TL3, when people are bashing at you with swords and daggers and such, a DR of 5 or 6 represents substantial natural armor which can go a long way to protecting you from most attacks. On the other hand, when you're up at TL12 where somebody can pull a holdout blaster out of his shoe and blast you for more than 30 points of damage all in one go, it hardly seems fair to charge so much for piddily amounts of built in DR. On the gripping hand, this natural armor will still protect you in a fist fight when you get dragged out of the shower naked and thrown into a brawl, so it doesn't make sense to underprice it. I have not come up with a good solution to this quandary.

Ulicts in the Phoenix Sector

Ulicts are extremely rare in the Phoenix Sector of my campaign. There are no Ulict colonies within the sector, so any Ulicts who are present must have traveled in from outside the sector. As Ulicts are not exactly given to wanderlust, this should not happen very often. Although most educated people will have heard of Ulicts, few will have ever actually seen one. It might be the sort of race that parents tell their kids about when trying to frighten them into brushing their teeth or what-not. As such, when an Ulict character walks around downtown, he will probably garner a good collection of stares and people hurriedly getting out of his way.

Gender Balance

Since the game hasn't had to deal with an actual Ulict hive, I've left deciding about this up in the air. Probably, most Ulict workers are male. Females would be rare, and any given female would be a Queen.

condemned to death by his hive does not experience regret or fear; after all, if the hive deems that he must die, then that is for the best.

An Ulict away from his home hive is afforded greater initiative. Although these Ulicts are undoubtably uncomfortable and disoriented while separated from the rigid social structure for which they are hardwired, the outside observer would never know it. An individual Ulict away from the hive is either lost, or on a specific mission for the hive. In the former case, he directs his hyper-focused attention on regaining contact with his hive. In the latter case, the Ulict will run roughshod over the niceties of interstellar culture in order to accomplish the task to which he was assigned. It is the rare Ulict who, even away from the hive, would consider deviating from his orders. If an individual is stuck in a situation where his orders no longer make sense, but his task is incomplete, he will do his best to complete the nonsensical task anyway.

Although they have a reputation for being violent, soulless killers, Ulicts do not engage in unnecessary mayhem. Nonetheless, they will not shy away from violence when something stands in the way of their goals. It is this uncompromising stance that has earned them an only slightly unfair reputation.

Ulicts are focused completely on supporting, promoting, building, and protecting the hive. As such, they have a work ethic that would make a Puritan weep. They do not waste time on such "trivial" pursuits as music, art, literature or the like. Recreation is a meaningless word for an Ulict.

Ecology

Geneticists who have managed to study the Ulict genome suspect that somebody tampered with the genes of some ancestor of the current Ulict race. However, no hard evidence has been gathered to date which unambiguously proves that Ulicts are anything other than a "naturally" evolved race.

It is unknown exactly which planet is the Ulict homeworld. Ulicts are most comfortable on terrestrial worlds with a gravity near 1.0g. Their favored climate tends towards the sub-tropical and humid. Some xenologists have argued that the sparse and efficient design of Ulict spacecraft, coupled with their reliance on biotechnology, indicates that the Ulicts evolved on a mineral poor planet. Others counter that the non-nonsense goal-oriented psychology of the race is what gives rise to their Spartan designs. The race is able to adapt to all but the coolest

of terrestrial worlds.

Ulicts are omnivorous in nature. For reasons of efficiency, most hives have left aside traditional agriculture in favor of bioengineered food matter grown and stored in laboratory vats. The fact that Ulicts are concerned only with the nutrition and food value of their diet, and not with taste or other unimportant qualitative factors, simplifies the task of the Ulict diet engineers.

Politics

Each Ulict hive or colony functions like a single, hierarchical entity. The hive is ruled absolutely by a Queen, and to some extent the good of the Queen is the good of the hive. However, the Queen, being an Ulict herself, is normally not subject to the selfish desires that might corrupt a human with similar absolute power. Although the Queen recognizes her individual importance, everything she does is to promote the good of the hive as a whole.

It is theorized that before the Ulict homeworld had achieved global communication, there were many Ulict colonies scattered all over the planet. Battles between hives competing for resources were probably common, although it is sure that one hive never held a grudge against a former enemy hive. Now that the Ulict race has both global communication and space travel, each planet controlled by Ulicts is the residence of just one hive, or at most a few hives. Ulicts are not fond of sharing their home planets with other sentient races, and have a disturbing disregard for treaties when resources controlled by other species on the planet are seen as needed by an Ulict hive.

Ulict hives limit their growth to the point where they are most efficiently using the resources of a home planet. Long term preservation of these resources seem to be considered in these limits. When another planet has been identified and claimed for colonization, breeding of Ulicts increases, along with production of starships and other materials needed for the trip to the new planet. When a Ulict colonization party lands on a new planet, it forms a new hive which does not seem to have any special ties to the hive it originated from.

Each individual Ulict hive is an independent political entity. Although they have little or no interest in Galactic politics, most have seen it as efficient to maintain a minimal amount of diplomatic contact with other races.

As administering a whole planet-sized hive is a bit much to ask for one individual to do, the Queen doubtless has a number of trusted high officials. These high officials might themselves be female, as Ulict workers are accustomed to obeying females. This might also present a potential crack in the harmonious rigid hive structure of the race: a highly ranked female might challenge the Queen of a hive for her position. If she gathered enough followers, it could mean a brief civil war within a hive.

Red Ulicts

The Ulict described here is the typical worker Ulict, also known as a Black Ulict. These are the only sort of Ulict that is ever encountered away from a hive, and is the sort of that comprises the vast majority of the race. However, in addition to Queens, other races about the Galaxy speak in hushed tones about the alleged Red Ulicts. These other members of the race are believed to be powerful psionics, and a force to be reckoned with should somebody ever make the misstep of attracting the wrathful ire of an Ulict hive.

Feedback
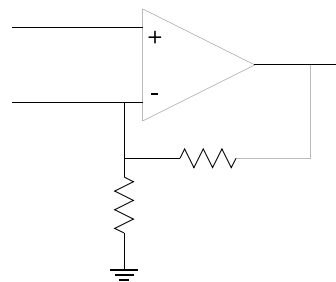
Tabby: It seems that every B-move star has an Enemy, who is either unknown, or supernatural, or of the sort. Of course, the statistics (at 3 so far) are limited. Is this a hazard of the job? Perhaps somebody should sue B-move stars' agents for not warning them.

Dan Smith: The map look good... but I fear, perhaps because I am the clueles new guy, that I may have missed some context somewhere.

Andy Dawson: I have mixed feelings about vast quantities of expanded character attributes. On the one hand, they do give you more control, control which assuming that all perception, cognition, etc. is held just in IQ. On the other hand, the add to the complexity and complication. I sort of sit the rules fence. On one side, I enjoy lots of rules and details (witness me boot up my spreadsheet and open Vehicles). On the other side, I like to let the rules be light and go with description and "poetic correctness" in running games. Which side will I fall on? I probably won't fall.

Arthur Shipkowski: Nice writeup of Smallsville. I saw a similar sort of log (actually, a series of communications) about an alien community encountering Earth, on the Internet. (Somebody mailed it to me.) In this one, the aliens were surprised to find out that the Earthlings were made of *meat*. Granted, that was only written for laughs, while you were creating a campaign background.

Roy was a hoot. Did I mention that I was Roy in real life? That was before I died.

Re: dividing up the Electronics skill, I have reservations similar to Andy's dividing up of attributes, even though what you've done makes sense.

Food court: I was becoming worried that everything sounded too... normal. Happy friendly. Fortunately, Simon's Diner restored my faith. At that point, I realized that it was necessary that most of them be normal so that the whole thing wouldn't be a freak show, where any one abnormality was lost in a wash of adventure seeds.

David Pulver: Your description of Red Six did a good job of capturing the ambiance of the place. All very sordid. I sympathized with the second-person's reaction to Tasaandra.

Spike Y Jones: Nice glimpses of *GURPS Egypt*. I look forward to that book being released.

RYRO *GURPS Vehicles*, while I agree with some of your comments, I don't really agree with your overall assessment. The false accuracy is strange at times, but on the other hand, as long as you round off at the end, it doesn't hurt anything. And, even if in the middle if you round off some of the decimal places, your vehicle designs aren't going to suffer much. It is true, though, that if you are going to go back and tune your designs, you will end up much happier using a spreadsheet than repeating all the calculations by hand. At that point, the false accuracy can be hidden by setting the number of decimal places that your spreadsheet displays.

Obviously the detail involved in creating the vehicles is unnecessary for vehicles which are "minor characters" in a game. Indeed, it would be nice if there were general, quick guidelines for vehicle performance, without requiring a lot of detail. OTOH, for some reason I seem to get a kick out of designing vehicles.

Dann Webster: In many ways, you're future history is simply excellent. It's an interesting take on the history that (at least so far as I've thought about it) seems to be consistent, and plausible. (While I believe that humanity will take its religion to the stars, I'm not sure religion will drive the future, but heck, it's still a good future history.) One thing in particular I like about it is that it builds in avoidance of religious flame wars. I've been in games where all of the characters started bashing together on given religions. Everything was dropped in favor of the bashing for a time. There comes a point where you wonder if it really is the characters talking, or if it's the players venting their own frustrations. In your future history, religious tolerance is built in. Perhaps this isn't really a necessary feature, but it's a nice one for people who are just out to have fun gaming.

Jeff Pfaffmann: Nice description of Havoc. Is there more information about Nightbreed out there, or will you be writing more in future issues? The King who leaves three Dukes all with a mandate to rule when he isn't around sounds like "What if Shakespeare wrote science fiction?" A lot of good possibilities there.

Brett Slocum: Was that one of those giant 6250 bps tapes? I think I still have a couple of them knocking about somewhere, but I have no clue how I'd ever read them.

The integration of psionics into the GURPS Magic system seemed well thought out. You stated in the introduction that in some fiction, magic is an extension of psionic ability. Did you consider trying to do it the other way, that is, integrating GURPS Magic into the GURPS Psionics system?

I liked the history of Belkar and his world Lorimyr.

Mikel Jon Featherston: The whole Cidi Rebellion sounds pretty severe. One question I have is: why not more severe? The Cidi have the capabilities and resources available to them to stop countermeasures against them (such as shutting down services like air). They are able to redirect noxious gases to the quarters of station personnel. Might there be a segment of Cidi who would argue for a more proactive approach? It's not implausible, given what they can do already, that the Cidi might be able to stage a sort of coup, or at least begin to take active measures against the "big" residents of the station until they got what they wanted.

Lisa Steele: I like Wishcraft as an alternative magic system for historical fantasy. Also, I liked the extensive background rationalization you gave before presenting the outline of the system.

RYCT Arthur Shipkowski and drop capsules: that one wins my "favorite typo" award for issue #33! Holding ground indeed.

Tom Cron: Ford's America: a nice vision, but it does seem to be a little too good to be true. (Nothing wrong with a little utopianism here and there, however.) Let's hope, though, that this timeline adapts as well as Niven's utopian Earth did when they meet their first hostile aliens. Cartland SF: scary. I wonder what a James Hogan romance would read like?

Scott Paul Maykrantz: I was amused by the pen/sword thing.

Some of that stuff can't have happened in 1997. Way earlier. Must have been.

Once again, I greatly enjoyed your characters. Both the Stone Wode and the Wyrding were great as well.

Michael David: Andrew Darwin was good. It's always nice to see others' additions to worlds out of the GURPS books. What was the date of Dragon #120?

Lowell Stouder: The year in photos... Robert Gilson was way overdressed. Or was that really him? The face didn't come out too well on the print, so perhaps it was an imposter.

Robert Gilson: Have fun moving back and forth n times (where n is a large positive integer). Congrats on the engagement.

I liked the artifact/changeling/alien robot merged with the station. Have you given thought to the idea that for whatever reason, Athena wants to keep her true identity secret? Her public persona could be something along the lines of Adam Selene in *The Moon is a Harsh Mistress.* A very small number, her most trusted inner circle, could be in on the secret. There's something pleasingly Illuminated about a being with the power and far-reaching influence, never mind the age, of Athena being a secret.

Woah! Lots of blank space!

To make sure that the postscript file I sent to Bob is as long as possible, I've included a picture of the 200" Hale telescope taken by a friend of mine, and my drawing of my elven thief/mage character from an online game I play in.

It's up to you to figure out which is which.