



FREELANCE TRAVELLER

The Electronic Fan-Supported Traveller® Magazine and Resource



Featured Article:

After-Action Report:

TravellerCON/USA 2015

by Jeff Zeitlin

A Note About Production

Freelance Traveller is prepared using Microsoft Office Publisher 2010 running on a Windows 7 Ultimate x64 system. The program is reasonably easy to use, and produces good results with moderate effort; it also supports advanced typographic features such as typographic quotes and apostrophes, small caps, ligatures, swashes, and stylistic alternatives (if the advanced features are implemented in the font). Generation of the PDF files is built in to this version of Microsoft Office; no additional products are needed.

The title and heading typeface is ZapfHumanist BT, a Bitstream adaptation of Hermann Zapf's digital redesign of his 'hot lead' typeface Optima, chosen as a 'tie-back' to the title typeface of the original edition of *Traveller*. The black-and-orange of the section headings is also a tie-back to *Traveller's* origins, though we felt that the 'correct' red was too dark. The heading sizes vary from 12 to 16 points. Body text is set in Palatino Linotype, also designed by Hermann Zapf, and is set at 11 points for most body text, giving approximately the same text spacing as Times New Roman at 12 point (which was the original *Freelance Traveller* body text), but a lighter 'color'. Palatino Linotype also 'balances' better as a body text typeface to Optima as a titling typeface.

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Critics’ Corner: *Mongoose Publishing, from the Paizo website; Gypsy Knights Games, from their website, DB Game Design, from the product.*

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From the Editor



As editor, my job is ideally to go over the articles and work with the authors to make them better. As copyeditor, I also end up correcting misspellings, punctuation, typos, and (in some cases) grammar. Copyediting is what takes up the most time while I’m actually assembling an issue. Second to that is article selection—deciding what to include, and what I can’t this month. Those two jobs are, by and large, why I decided to shift to an every-other-month schedule—it was taking almost the entire

time between issues to do those two jobs, and leaving me practically no time to work with authors to make their articles better. I’m looking for that to change, beginning with the next issue. I fully intend to begin—effective December 1, 2015, just to set myself a goal—at least acknowledging every submission, and where I think it can be improved after a read, to actually send the author a critique and suggestions. Please take these in the spirit intended, and let’s make FT better for all! ☺

Supplement 11: Animal Encounters

Reviewed by Megan Robertson

Supplement 11: *Animal Encounters*. August Hahn.
Mongoose Publishing <http://www.mongoosepublishing.com>
128pp., hardcover or PDF
US\$24.99(H)\$14.99(P)/UK£16.99(H)£9.71(P)

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This book takes a look at a long-neglected aspect of *Traveller* which is, after all, a space exploration game: the creatures that you may encounter on other worlds. If you take the premise that life has developed on multiple planets (which given the sheer number of 'habitable' ones is pretty obvious), that life is not going to be identical wherever you go. Indeed, having exotic (to our eyes) lifeforms is part of the 'otherness' of visiting different planets during the course of your game—and if so inclined you can weave them into your plotline, anything from specimen-collecting or hunting trips to being attacked by some savage beast you didn't even know existed.

When not playing engineers or the ship's chef, I quite often play a 'xenobiologist' whose very reason for being out in the black is to study the flora and fauna on the worlds he visits. If your game is one about exploration or colonisation, you are going to need to know about the creatures on the planets you investigate. Even if your game involves trade, or war, or going for a holiday, it may become important. Robert Heinlein, in his book *Tunnel in the Sky* gives a wonderful example when a survival instructor says "Beware of the stobor". His students spend ages looking for a stobor before they realise that it's not an actual creature but the concept of an unknown animal that might well be dangerous that they are being warned about!

The introduction begins with a discussion of what an 'animal' is and how animals behave... they are not cute, furry, people! Animals react to circumstances, they are not sentient, and respond to scary situations with a flight or fight response rather than a reasoned one. As general points of animal psychol-

TRAVELLER

Supplement 11:
Animal Encounters

ogy are discussed, ways in which to make use of them within your game are suggested in a neat and useful manner.

Next comes A Walk on the Wild Side, a chapter which provides a comprehensive animal creation system. Based on a series of tables in typical *Traveller* fashion, it is designed to enable you to create believable alien animals with little effort, complete with all that you need to use them in play. Animals evolve to fill particular niches, so you need to decide early on in the process what sort of terrain your creature will be found in—this may, of course, be dictated by other aspects of the adventure you are planning. The creature will fall into one of several classifications (avian, reptile, insect, mammal, and so on), and will have appropriate modes of locomotion and behaviours to go along with it. Like many such systems, you can have hours of innocent fun just rolling up animals even if you have no specific use for them right now. Whilst this book is about animals, you do have the option of 'fungals'—now most people

Critics' Corner

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lump fungi in with plants rather than animals, but there is certainly biological evidence to view them as a third kingdom, and here they might be able to move around. You can use the same section if you want a few self-mobile plants... why not, this is alien biology we're talking about, after all!

Now, there are lots of interesting things you can do with the animals you create, but this being a role-playing game combat is never far away, so the next chapter is *When Animals Attack*. It provides numerous tables to allow you to set up animal encounters based on terrain type. Of course, these encounters do not need to involve conflict if that's not what you want. Wherever you plot takes the game, there will be some options for random encounters—or you may choose to set them up in advance as part of your story. This section is also replete with little snippets of ideas and events that add more life to the proceedings—interactions, events and so on, all helping you to create the air of 'otherness' that re-

minds the players that their characters are not in their home town any more. This is, due to the multitude of options, the largest part of the book.

Finally, *The Galactic Menagerie* provides an array of ready-designed critters for you to let loose, or at least to serve as examples for your own designs. There are also some charts to allow you to modify creatures depending on the environment in which they are to be found—so you can have a tropic rain forest or open plains version of a given animal, similar enough that the relationship can be discerned but different enough to be distinct... and of course, fitting in with wherever it is that they live.

Overall, this provides a good and comprehensive if mechanistic way to come up with animals to be found on all those worlds that are out there for your Travellers to explore. A few examples of how to take a creature from fiction and slot it in to the system, so that you can generate the essential statistics to use it in your game, would have been a useful addition... and I do wonder what they all taste like and how you cook them! 🍴

Raconteurs' Rest

After-Action Report: TravellerCON/USA 2015

by Jeff Zeitlin

First, an apology, because there are no photos this year, except for the awards—my camera/phone was acting up, and if I looked at it cross-eyed, it would complain about the battery being low...

Day One—Friday, October 9 (and general comments)

I actually got onto the road close to the time I expected to, and arrived at the hotel (the Lancaster Host Resort, same as last year) at about 1430. We weren't able to get into the con room; they were still cleaning up from the previous group. They did give us one of the smaller rooms just to wait around in and maybe get some pickup games and chatting go-

ing, so after dropping my stuff off in my room, I headed down to meet, greet, and chat.

We got into our regular room a little later than planned, but the Friday Evening session got started, dice and books and handouts were broken out, and *Traveller* started being played in earnest. I was chatting with some of the people who weren't playing, and wandering around looking at the vendor tables, when Megan H. (the Queen of the Con) mentioned some of the freebies that I hadn't collected when I signed in. I collected, and noticed that we still had some of the *Freelance Traveller* thumb drives from last year, so I set up my laptop, and let folks know that if they had one of the drives with them, I'd update them through the October 2015 issue (which had been posted only about a day before). So, more chatting, a couple of updates, and a little wandering around made for a pleasant evening.

Raconteurs' Rest

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This year, the awards for the PFI and SEH were courtesy of John Devine, who gets my profuse thanks because “life is like that, sometimes”, and it most definitely has been like that for me, recently, so I wasn’t able to get to the plastics place that I used last year to make them up. What John did was far nicer than what I had in mind, anyway, so from my point of view, that ended well. I took pictures, and then my phone started griping about battery.

The vendors present were John Devine, who had a selection of *Traveller*-themed T-shirts (“You have not LIVED until you have DIED during Character Generation”, for one) and other miscellaneous stuff—including a pen/penlight/laser pointer/tablet stylus (the first one was free swag, any additional ones you



want were at almost token cost); John Watts of Gypsy Knights Games, with a good selection of the Clement Sector material—I walked away with a lighter wallet, and a *much* heavier load of *Traveller* books—and Noah Ternullo and Fred Goldin of RPG-Suite.com, who have negotiated a license (with Mongoose) to bring out some *Traveller* software. They had some early versions to show off; the software looks very promising. I wish my phone hadn’t been acting up and gnawing on the battery; the screen shots were impressive, and the morning and afternoon periods on Saturday had clusters of people visiting their table and playing with the demos.

As last year, we had five roleplaying tables and two miniatures tables, and while slots on the schedule were well-filled, there was also ample opportunity for pick-up games.



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Day Two—Saturday, October 10

After enjoying a quick-but-tasty-and-filling breakfast in the hotel's "other restaurant", I went down to the room, which had just opened (I was dining with Keith F. and Megan H., the other two-thirds of the ConCom). Some games were just getting started, so I checked the sign-up sheets and the descriptions in the Con book, and elected to join Mel W.'s "Mustering Out Blues". M.O.B. is a Book 1-3 Classic *Traveller* adventure, where the idea is that you roll up characters on the spot, and Mel runs an adventure "off the cuff", no advance planning, and even things like world building was done "on the fly". Play was fun, but what really pulled everyone in was the world-building *as a group* rather than by Mel's fiat. The adventure definitely went well, with a few surprises along the way, and we came to a natural end a little early, and spent the rest of the session doing a post-mortem on it, where sources of some of the ideas were discussed, as was how successful the session was because of the way it pulled everyone in and got us involved in a way that gave us an emotional stake in the collaboration. We broke for lunch at 1200, and most of us scattered to various local eateries or take-out; it turns out that there's a pretty nice noodle place just down the street from the hotel, so I had an Indonesian noodle *satay* with chicken.

The afternoon session didn't have any games that really "pulled" at me, so I set up the laptop again for updates, wandered around a bit, and observed. This year brought a couple of games using the Fate Core rules; while I couldn't really get a feel for the rules of Fate, I did get the sense that the games moved a bit faster.

Dinner was in the hotel's restaurant, "Legends", and was tasty. I opted for a salad this time, as I recalled that last time I'd eaten there, the meals were *heavy*—good, but deceptively substantial, and with large portions.

By the time I got back downstairs, the slots for all of the adventures for the evening session had been filled (dammit!), so I missed out on a couple of adventures that looked promising—and the one I'd *really* wanted to get in on had a waiting list as long as the player list. That one was Ken P.'s "A Noble Ending", an assassination job on a maglev against a noble, and when I was standing there peering over shoulders, it looked fun, even when the party suffered some attention from Murphy. Things broke up around 2300, and people drifted off to the Con suite or to bed.

Day Three—Sunday, October 11

There was only a morning session with two roleplaying games and two miniatures games (counting *Brilliant Lances* as a "miniatures" game, even though it's counters) on the schedule; most of us were more-or-less at loose ends or packing up to get on the road back to respective homes—some from as far away as Texas. I got packed up and loaded into the car early, and joined in to Bill P.'s *GURPS Traveller Starships* miniatures game. There was room for up to nine people; we ended up with four playing. The scenario was one in which there were three groups of three ships each, with different objectives for each group: The Imperial scouts (two classic Type S and a *Donosev*) had collected some data, and needed to get it home; the Vargr (two corsairs and a Close Escort; I missed names, but two of our players were sharing the Vargr force) were looking to "acquire some assets"; and the Sword Worlders (two Type T and a Close Escort) were simply looking to mix it up with someone. Being the type of person I am, I chose to play the scouts. I should note that none of us were told who we were or what our objectives were until we had settled in and were ready to start. I quickly decided that discretion was very much the better part of keeping my *>mumble<* in one piece—valor be damned—and made a bee-line for the exit without doing anything that might be considered provocative. The Vargr team offered an alliance against the Swordies, saying that I didn't have

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Raconteurs' Rest

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what they were looking for, but I maintained radio silence, and didn't even use active sensors to see who was what and where—just kept the passives, and set a course. Since I didn't respond to the Swordies lock on one of my ships, and took care of the one missile that they threw at me with point defense, they sorta lost interest in me, and mixed it up with the Vargr, which was a pretty intricate dance. After I accomplished my mission on about the sixth turn, I “kibitized” for both sides, and used some mathematical tricks I knew to speed up some of the calculations that were needed for the shooting (e.g., “That does 5d6×50 damage; >roll< Ummm... 13, times 50 is... >I interrupt, “six-fifty”<). All in all, fun was had.

In retrospect, we should have awarded the SEH and PFI at the end of the Saturday night session, instead of Sunday; too many of us were not at the Sunday session. Nevertheless, we got a couple of good nominations for each.

Bracken W. took the SEH (posthumously) for truly heroic action in a game: he was a teleporter, and the ship he was on was in trouble from the Bad Guys. He made some mech and electronic rolls, and was able to jury-rig a laser pistol into a bomb. He then teleported to the opposition's ship, blowing the

roll just enough so that he arrived starkers, but with the ‘bomb’—and knowing that he didn't have enough psi points left to guarantee making it back. He used the surprise of his arrival—and of his being starkers—to get a lead running to Engineering, where he set the bomb to go off and tossed it at the ship's fusion reactor. He was nearby when his bomb went off, and set off the reactor, but there was enough ship between him and the explosions to survive, and as he couldn't teleport back, he headed for an escape pod, with the Bad Guys in hot pursuit. He just barely didn't make it—but he was able to hit the release button while giving the baddies a middle-finger salute, so *nobody* got to use the escape pod.

Harry B. took the PFI for dying twice, practically simultaneously. The part had been negotiating with what can only be described as “intelligent dragons”, and he'd just about sewn up an agreement that was about as good as it could be, when one of the other members of the party decided that the dragons must be psionic and therefore Zhos, and started shooting. Chaos ensued, during which Harry got chomped by the dragon he'd been talking with before the shooting started. That happened just as the party's ship's weapons came on line, and someone shot the dragon, drilling through him—and into Harry.

All in all, much fun was had, much swag was acquired, and I'm looking forward to next year. 🎲

Active Measures

Primary Attribute

by Michael Brown

Players' Information

The PCs were unlucky enough to have been on-world as a powerful hurricane struck. The storm packed winds of well over 200 kph and caused a 6-meter storm surge. Fortunately, the tempest blew through with few casualties, although it left many structures damaged or destroyed.

As the adventurers are taking stock of their situation (and maybe counting their blessings), they are

contacted by the research center to which they made a delivery before the storm. The Starzen Institute for Biological Research is well-known locally as a leader in the biomedical sciences. The call has an undertone of urgency, and the group is offered Cr500 to simply show up and speak with the director.

Director Reine Westin is quite anxious when the adventurers arrive. Declaring that time is short, she gets to the point. She explains that the storm did the compound considerable damage, with research projects scattered, equipment destroyed, and dozens of research animals killed. The Institute's work may be

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set back years, but that's not the worst of it. While cleaning up and taking inventory, the institute staff discovered that some of the animals—several specimens of *arbelis*, an animal native to the world but hard to acquire—weren't killed, but in fact had escaped during the storm. They were carrying a specialized retrovirus designed to repair neural connections; the scientists were studying its potential as a treatment for brain injuries and dementia. According to the notes the researchers salvaged, however, the virus had the unintended effect of boosting the animals' intelligence! The storm struck before an in-depth study of the development could get underway.

Westin can't allow knowledge of what happened to get out, for several reasons: the *arbelis*' newfound ability to learn and reason puts the surrounding population at risk. The creatures were valuable even before they started becoming smarter; rival labs would stop at nothing to acquire them. And several unethical experiments conducted years ago (before Westin took over, she hastens to add) made a negative impression on nearby civilians.

This means that the animals must be tracked and captured with the utmost secrecy. Westin offers the heroes Cr5,000 for each one captured (out of her personal funds, although she doesn't tell them this) to do so and return them to the center unharmed. If the group haggles, she reminds them that time is short; the longer they delay, the farther away the *arbelis* get and the smarter they become. However, she offers to discuss additional terms after they've completed their mission.

Fortunately, the Institute recognized the *arbelis*' value and implanted them with microchips that allow for tracking using an Institute-issued tracking device; Westin lends the heroes the last surviving one. She also lends them several dart guns with tranq rounds specially calibrated for the *arbelis*. Finally, she cautions the group against being bitten.

Studies on the virus had only just gotten underway and there's no data on whether it is transmissible or how it would affect a human.

Referee's Information

2D *arbelis*—small arboreal animals similar to Ter-ran monkeys—escaped the Institute. They use the foliage as cover from predators (-2 DM on attempts to spot them.) They are also capable of making extraordinary leaps to neighboring trees, another evasion technique. While ordinarily harmless, a cornered *arbelis* defends itself with surprising ferocity. They are highly solitary creatures that normally only gather to mate; but the Institute's specimens are capable of working together due to the increasing intelligence.

The referee can substitute monkeys, if desired.

Arboreal Terrain					
	Mass	Hits	Armor	Wounds/Weapons	
Herbivore/gatherer	6 kg	4/7	none	1D teeth	A9F3S1

The *arbelis* are still being affected by the virus. They initially have an INT rating of 4 (as measured in humans). Every hour, the referee throws 9+; success adds 1 point to the rating. The increases stop once the creatures' INT becomes 12 (C). In the meantime, it becomes apparent they're becoming smarter as they escape ever more complex traps; formulate sophisticated offensive tactics; even use deception against their would-be captors.

The tracking device gives the PCs +2 to find the animals. The dart guns are similar to body pistols (Book 1) and use the same statistics and tables, although the rounds only do 1D damage. On a successful hit, an *arbelis* falls unconscious for 30 minutes unless it throws its stun hits (4) or less.

The referee should map out an area of several square kilometers centered on the Institute, which includes abundant tree cover and hiding places. The nearest town is a community of 3,000; its outskirts are situated no more than 1.5 kilometers away. Using a hex grid will allow the party's movements to be more easily tracked.

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Active Measures

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Each hour, the referee should throw 9+ to locate an *arbelis*, with the following DMs: using the tracker, +2; +Hunting skill; per point of *arbelis* INT greater than 6, -1.


If the tracking throw is a natural "12", two *arbelis* are found. On the first throw of a natural "2", the townspeople have gotten word of the creatures' escape. This is the last straw for them, as they've never liked having the Institute around. They quickly organize hunting parties to find and kill the little creatures while 2D×10 other townsfolk march on the Institute in protest (see below.) Hunting parties are encountered on 7+; number 1D+2, are armed with hunting weapons, and react to the PCs at -4. Harming citizens under circumstances other than clear-cut self-defense means stiff legal penalties. Naturally, Westin won't pay for dead animals or legal entanglements.

If the team successfully catches all the *arbelis*, their mission still isn't over. Upon returning to the Institute, they find it blocked by the protest group. The team must navigate the crowd in order to get inside. Simply plunging through the throng might result in injury; it takes the adventurers 2D combat rounds to get through the crowd; throwing their DEX or less each round or taking 1 point of damage. They might think of other routes into the building; the referee must determine their chances of success.

If the PCs seem to be having too easy a time of it, a complication in the form of a rival could be intro-

duced: a spy from a rival organization was posted at the Institute. She had planned to get some of the *arbelis* for her employer when the storm hit and the little beasts got away before she could act. Now, she's also out looking for them, armed with a dart gun like the PCs'. Although she makes the same 9+ throw to find them, she doesn't have a tracking device and therefore doesn't enjoy the +2 bonus. She will, however, get the heroes' tracker at the first opportunity. She's highly skilled and has no problem taking down any adventurer that gets in her way. If she captures all the *arbelis*, she hightails it for the nearest speeder and then to her employer's headquarters in a neighboring province. Finally, if she hasn't been dealt with by the time the PCs return to the Institute, she might make one more attempt at the *arbelis* while the heroes are dealing with the hostile throng.

An alternative complication could be that the 'spy' is instead an operative for a sophonts-rights organization, and believes that the *arbelis* infected by the virus may be no longer classifiable as animals. If she captures all the *arbelis*, she will return to the organization's headquarters on this world, and (unless stopped) within a week, high-tail it off the world with the *arbelis* to get them tested and publicize the experimentation that the Institute has been doing.

If the group is successful in their mission, Westin pays off as promised, imploring them to keep quiet about what they know about the *arbelis*. If they break their silence, the referee should determine the flow of subsequent events. 

The Prep Room

Encyclopaedia Galactica

by William Johnson

A warning is given to nearly every game master in every type of role playing game, which is especially true of *Traveller* with its galaxy-wide scope: Don't try to create everything; only create enough to satisfy the needs of the next game or two. However,

I like creating stuff, so I have always ignored that advice. When it comes to *Traveller*, though, I have really gone overboard.

Encyclopaedia Galactica is the written background and source material to my science fiction wargaming and role playing campaigns. I have been compiling the Encyclopaedia for ten years on and off, and the project has now become an interesting

The Prep Room

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hobby in its own right. The background is culled from a variety of sources and stitched together to make a coherent whole.

Rationale

Initially, I wanted to play role playing games and wargames within a science fiction setting, preferably using the *Traveller*¹ and *Ground Zero Games*² rule sets. Because I wanted to use both role playing and wargaming within my imaginary universe, I decided at the outset not to include game stats, characteristics and skills for *Traveller* or wargaming qualities within the Encyclopaedia. This has given me an unexpected bonus, in that my universe is now generic and can be used with any roleplaying or wargaming rule sets.

However, I didn't particularly like the given settings for either game. I wanted my own universe. As a solo gamer, I wanted to generate as little as possible of the background from my own imagination. So I set about looking for background material from whatever sources I could find. I included the A. Bertram Chandler books³ which had such a realistic feel to them, based as they are on the author's actual experiences as a merchant sailor, and including an Australian flavour, which was "alien" to my own British viewpoint. Thus the major story arc for my games would be the upcoming war between the Rim Worlds and The Empire. I had also read the E. E. "Doc" Smith books about The Service of the Empire and the D'Alembert family⁴, which included a nobility similar to that present in *Traveller*. So these became included in the background. For early human history the background given in the *Ground Zero Games* books looked like a link between the present and the D'Alembert time period. So I decided to set the universe after the end of the Smith books and before the Rim Worlds rebellion.

Then along came *Firefly* and *Serenity*⁵ and these just "had" to be included. Luckily an unexplored (up to that point) area existed where the independ-

ent colonies could be set up and the Alliance became an alliance of Power Blocs in the area.

As a guide to the future of the Empire that I had created, elements of Isaac Asimov's *Foundation Trilogy*⁶ were also incorporated into the fabric of the universe.

Another consequence of this being a solo project was that I wanted extra detail and so I decided to incorporate as many images as possible. As someone once said, a picture is worth a thousand words. These images include planetary maps from *Heaven & Earth*⁷, logos for corporations and organisations, portraits for people, plans and images for star ships and whatever pictures I could find for commodities, sports, religions etc. All this was with the aim of making the gaming easier to play. It did, however, make my universe non commercial as many of the images I used were copyrighted. The majority of these images were found using Google Image Search. Some, however, needed to be altered and there a graphics program like GIMP or Photoshop came in very handy.

Over the years my gaming has also altered the history of the area and has been incorporated into the Encyclopaedia. Thus the Encyclopaedia becomes a living thing, a record of my gaming and SF interests.

How It Was Done

Initially the Encyclopaedia was a hand-written affair using coloured paper in a series of ring binders (one for most items and one for star systems). Different subjects had different colours, so people were on blue paper, companies on yellow paper and worlds on green paper. This made finding information a little easier, but the ring binders were cumbersome to carry around, and linking from one item to another was difficult.

After some research I decided that the best way to create this source material for my universe was with a wiki, like Wikipedia. I adopted the Tiddly Wiki⁸ format because it suited my style. It is a standalone program, not requiring access the inter-

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net, it could be carried on a USB stick enabling me to take it to work and do a bit on the encyclopaedia in my lunch break, and I found it easy to use. The basic facts for the Encyclopaedia Galactica were gleaned from the various source materials with a careful reading of each reference book. Notes were taken of every person, animal, organisation, world, city, star port, restaurant, vehicle etc. mentioned in any of the books with any details shown in the book, together with any dates that were given by the author. These notes were then included in the Encyclopaedia, before the next source material were read.

A universe of *Traveller* star systems was created from a long forgotten DOS based program that generated the North and South Hemispheres complete with hemisphere (sector) maps, and planetary statistics. The program assigned random names to the worlds. These random names were replaced where necessary with names from the source materials. The star maps were then annotated using GIMP (A Photoshop like program) with the names of the systems, plus the outlines of various areas such as the Bermuda Hundred, the Vargr Extents and the Rim Worlds. This map is kept updated as new systems are detailed and named, and copied to the jpg format for viewing within the TiddlyWiki.. Planetary and system maps and details were then generated from the Heaven & Earth⁷ program. If I was to start this project again from scratch I would probably use Heaven and Earth to generate the whole universe for me.

A list of potential planetary names was obtained from a list of the names of planets, planetoids, asteroids and comets found on the internet. These names were allocated to sectors based upon the power blocs assigned to each sector. So if I needed to name an otherwise un-named planet all I had to do was look up the “spare” names in the sector concerned.

Templates were set up for planet and sophont entries, and later added to with starship, starship class, corporation, organisation and commodity en-

tries. Thus essential details wouldn't be omitted from these entries.

The Tiddlywiki format allows the linking in of other documents, images, videos etc. I created a set of folders/directories within the Encyclopaedia Galactica folder to contain and manage these various items. The folder “Files” for example contains some text documents referenced within the Tiddlywiki, such as a description of the Directions Within the Galaxy or Stellar Evolution. In addition this folder contains reference information such as the computer generated listings of all the systems in each hemisphere. Another folder contains all the images, subdivided into Maps, People, Vehicles, Commodities etc. A third folder contains the videos referenced from the Encyclopaedia Galactica.

Items found on internet websites and the downloaded *Freelance Traveller* magazine, were generally copied and pasted into the Encyclopaedia, not only to save time and ensure accuracy, but also so that the phrasing was not mine and this added verisimilitude to the Encyclopaedia in that it appears to be created by a team of contributors.

Problems and Solutions

Inevitably there were problems with this approach. One problem I encountered early on was to keep the chronology straight. I therefore added a timeline, but I did this too far down the process of creating the encyclopaedia. I recommend anyone starting a project like this to make the timeline one of the first items created and to keep this as complete and up-to-date as possible.

Early on I adopted three guidelines with the Encyclopaedia that I have tried to stick to ever since.

Firstly, everything can be adapted to fit – it is my own universe to play in after all. Thus if any information or detail didn't exactly fit my “vision” of the universe, I would change it to fit. For example, the various faster than light drives in A. Bertram Chandler's books were very attractive to me and so the Ehrenhaft and Mannshen drives were adopted and made to fit with the *Traveller* jump travel schema. I

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The Prep Room

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had early on devised a timeline for the Stanley Dynasty, but this timeline didn't fit with the timescale of the Rim Worlds books and the *Firefly/Serenity* videos, and so the Stanleys were made to have shorter lives to fit in with the other timeline. This didn't fit with the inclusion of anagathics in *Traveller*, and so the Stanley Doctrine was changed to ban the Stanleys from using anagathics, and a reason invented for this – i.e., the desire to prevent the rise of a long-lived dictator-style emperor.

Secondly, anything already written is now fact and should not be changed, unless required by the first guideline. For instance, one article I wanted to incorporate into my background was Jeremide Alex is Sincavage from *Freelance Traveller*⁹. His background included a reference to “The Massacre of Corridor”. Rather than replace this with a disaster of my own invention, I left the reference in the article and assigned it to a pre-existing war in my background, namely the Third Solar War from Ground Zero Games' background.

Thirdly, wherever possible, every fact should link to at least two other facts, so that the encyclopaedia becomes a large interconnected network of information. This is where the wiki format became a positive asset. After a certain critical point the number of items in the Encyclopaedia had grown to where I couldn't possibly remember them all. This was what I was working towards—I now had a universe that I could explore, and “discover”. This needed a means of information exploration and that is where the links between items came into its own. As long as every item linked to another item and was in turn linked to by a different item, then the information could later be found, serendipitously. To ensure that this happened is the reason for the linking to at least two other facts.

Finally if you wish to explore my sandpit, either to play in it yourself, or to use it as a basis to create your own world, then a copy is available at my dropbox¹⁰.

From this copy you will see that it is still a work in progress, and probably will remain so for the rest of my lifetime. I have a folder in the images folder labelled unused images, containing images I have found that I believe may be useful in future. There are entries still to be made (called “Missing Tiddlers”) and entries needing linking into the network (called “Orphan Tiddlers”). Every so often I have a go at creating the missing entries and linking the orphans into the scheme, so the errors don't accumulate too much.

Notes

1. Part of the Classic *Traveller* Universe. See <http://rpggeek.com/rpgfamily/423/traveller> for the imperial services, and other empire wide organisations.
2. Ground Zero Games Future History background to their *Full Thrust*, *Star Grunt* and *Dirtside* wargames rules. This gave me the early “Power Bloc” history and a reason for different sectors to have a different feel. See <http://www.boardgamegeek.com/boardgame/3893/full-thrust>
3. The Rim Worlds/John Grimes novels by A. Bertram Chandler—see http://en.wikipedia.org/wiki/A._Bertram_Chandler and <http://www.rimworlds.com/concordancecategoryindex.htm> for the action in Sectors 29 to 31.
4. E. E. “Doc” Smith's Family D'Alembert/Circus of the Galaxy series. This gave me the reason for the nobility in the game, and the “orange slices” mapping of the empire. See http://www.en.wikipedia.org/wiki/Family_D'Alembert
5. The TV series *Firefly* and follow-on movie, *Serenity*. See <http://www.fireflywiki.org/Firefly/HomePage> for the action in sectors 1, 2 and 18.
6. *The Foundation Trilogy* by Isaac Asimov. See http://en.wikipedia.org/wiki/Foundation_series
7. The Heaven and Earth system generation program is available from http://www.downport.com/wbd/HEAVEN_&_EARTH.htm
8. The Encyclopaedia Galactica was built using classic TiddlyWiki, <http://classic.tiddlywiki.com/>
A newer version of TiddlyWiki called TiddlyWiki 5 is available: [http://www.freelancetraveller.com/](http://tiddlywiki.com/#HelloThere>HelloThere%20GettingStarted%20Upgrading%20Features%20Community%20RoadMap%20Docs9. <i>Freelance Traveller</i>, a free internet-only magazine for the <i>Traveller</i> system, <a href=)
10. https://www.dropbox.com/sh/6bgj9xkg5l1ydtb/AABvaiVPpM1wthHjL2k_yLEKa?dl=0



Grand Safari

Reviewed by "kafka"

Grand Safari. John Watts.

Gypsy Knights Games <http://www.gypsyknightsgames.com>

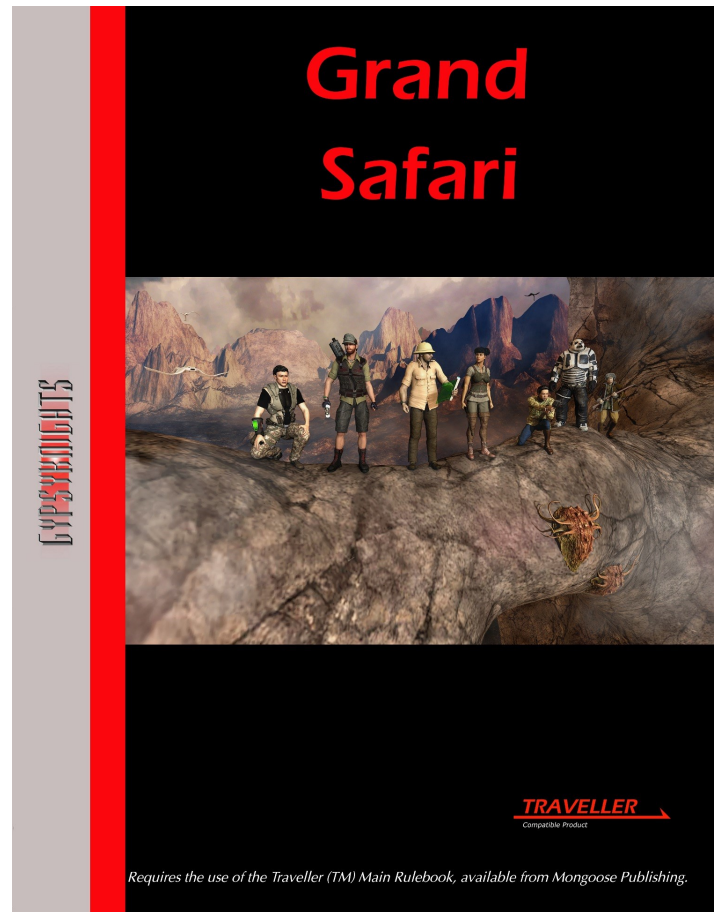
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As usual, there will be no spoilers in this review of adventures. Safari adventures somehow get very short shrift in SFRPGs, possibly because the original Traveller safari adventure, *Safari Ship*, did it very well or possibly the genre hit a brick wall with *Jurassic Park*. That said, *Grand Safari* breaks the mould and really creates a fun and interesting dynamic for safari-type games.

It begins with the premise that players all wish to join an exclusive exploratory club; in the OTU, this could simply be a specialized group of Scouts with higher than normal Social Standing – in short, a gentle-sophont association. First, players are tasked with a series of tests, which are rendered as dice rolls, but give lots of leeway for role playing behind the rolls. Having the players “test” their abilities gives them an excellent bridge to playing the safari component. It is truly a safari adventure in that players are awarded a scale of points for killing, capturing, or photographing (holographing?) the different fauna or flora that are the respective objects of interest. Superb plot twists ensure that no two missions are identical, and the environment is magnificently described, painting a picture of Man vs. Nature on alien worlds that offer a significant challenge that may be as difficult and unique as what they seek to capture. And, each of these worlds present interesting, varied fleshed-out NPCs not seen in a *Traveller* adventure in a very long time. With different environments also come new vehicles. The artwork, while still Poser, represents a fundamental quantitative leap from previous offerings. Furthermore, Watts has seamlessly integrated previous supplements in a complete package without giving



away too much away, allowing the referee to run the adventure well even if lacking one or more supplements (though perhaps not as effectively, IMHO).

Furthermore, additional adventures set in this untamed frontier are included, making this an invaluable purchase. Complete system details round out the package. This is truly a phenomenal investment. One could criticize this volume for having a little too much white space, but given the very small size of GKG, that is hardly surprising. The white space is not due to the lack of filler material; it is perhaps that this adventure might be better served if it were digest sized (although, I do like my A4) but that would probably lead to an increase in the number of pages and hence expense.

All in all, this is an excellent adventure sourcebook that certainly puts other *Traveller* products to shame by raising the standard to that of a professional sleek standard comparable or even surpassing some Mongoose titles, and firmly moving GKG from small press to a fully professional outfit, with exciting products. The adventures contained within do

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play out as something that can be inserted into any *Traveller* universe, but work best with the ATU of the Clement Sector. The pregens are nicely balanced with great backstories – there is even a uplifted panda in there and many, many, many thanks for the excellent character art. All too often this (character art) is overlooked; however, it has been my experience that players often select characters from their “look” even not looking at the stats. This book is worth its weight in platinum and is chock full of little gems. With products like these GKG hopefully

will be able to make the successful transfer from POD to occupying retail space for they have made the successful transition from the small independent publisher to small skilled and unique publisher. Undoubtedly, this trend will only continue as the quality of their products keeps increasing at an exponential rate. Criticisms of this work could still emanate from only their small size and small operating budget – it is hoped that more graphic designers and game writers will flock to this publisher to improve the overall presentation of this material. Perhaps, a kickstarter might be in order... ☪

Doing It My Way

Task Systems

Extending the Task Resolution System to D20 *Traveller*

by Jason Kemp

Open Game Content Note

This article originally appeared on the pre-magazine *Freelance Traveller* website in 2003. With the exception of the next three paragraphs (the Introduction), material appearing in this article is to be considered Open Game Content governed by the Open Game License v1.0a (see p. 59)

Introduction

In June of 1999, BITS (British Isles Traveller Support) (<http://www.bitsuk.net/>) published a set of writer's guidelines for their generic *Traveller* adventures. In order to make their modules compatible with as many products as possible, BITS used a generic task resolution system that worked with *Classic Traveller* (CT), *MegaTraveller* (MT), *Traveller: The New Era* (TNE), *Marc Miller's Traveller* (T4), and *GURPS Traveller* (GT). This generic task system can still be found as a download on BITS' website, <http://www.bitsuk.net/Archive/GameAids/files/BITSTaskSystem.pdf>

The release of *Traveller*²⁰ (D20 *Traveller*, also called T20), which implemented the D20 System as

its core game mechanic, drifted away from the concept of prior *Traveller* task systems. The skill check difficulty classes (DCs) seemed erratic, some being too easy and others being too difficult. Moreover, these DCs generally defied easy categorization, particularly in those areas of the rules that were not carried over from the D20 System. Until the referee gets used to the system and memorizes the haphazard skill DCs, he finds himself constantly referencing the rules, which slows down game play.

This article presents a means of extending a task resolution system into T20. The reasons for this are twofold: First, the use of universal difficulty descriptors allows the referee to easily produce reliable and consistent skill check DCs with a minimum of rulebook references, thus speeding play. Second, a number of excellent adventures have been released in previous versions of *Traveller*, and using such a system would ease the conversion process.

Task Difficulties

In T20, characters possess skills based on skill ranks selected at each level of advancement, which can be modified by a specific ability score, synergy bonuses from other skills, and the impact of various feats such as Skill Focus. When making a skill check, T20 characters roll a d20 and add the skill ranks and modifiers, comparing the final result to a skill check

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DC, with is either an opposed roll or a static value. Using this task resolution system, the general difficulty of a task can be described with a Difficulty Level, a one-word verbal description of how hard it is to resolve a specific task. Each Difficulty Level refers to a specific skill check DC, a static value detailed in the Task Difficulties table that follows. (The names of the Difficulty Levels are identical to the BITS descriptors, for ease of use during conversion efforts.)

Task Difficulties	
Difficulty Level	Skill Check DC
Easy	10
Average	15
Difficult	20
Formidable	25
Staggering	30
Impossible	35
Hopeless	40
Opposed	Set dynamically, usually by comparing the character's skill check to the result of an opponent's opposed skill check. A good example would be a 'Spot' check that is opposed by the opponent's 'Hide' check.

Spectacular Results

Task resolution typically defines the failure or success of a task. Sometimes, however, there are added benefits when a character succeeds incredibly well. Likewise, situations exist where a dismal failure produces results far worse than a simple failure might. In order to reflect either of these types of scenarios, there must be a means of defining spectacular results.

Spectacular Success: When a character succeeds in a skill check by a margin of ten or more, the character is assumed to have made a Spectacular Success, and may receive some additional benefit as a result of that roll.

Spectacular Failure: When a character fails a skill check by a margin of ten or more, the character

is assumed to have made a Spectacular Failure, and may receive some additional penalty as a result of this failure.

Modifying the Difficulty Level

A number of circumstances can modify the Difficulty Level of a task. While performing brain surgery is admittedly a Formidable task normally, certain conditions can improve or decrease a character's chance at success.

Performing a task under fire: Performing a task in a dangerous situation, such as in the midst of combat, typically increases the Difficulty Level of a task by sometimes one or usually two levels, making it significantly more difficult to perform. (For example, brain surgery is considerably harder in the midst of a gunfight as opposed to in a quiet surgical theater.)

Inappropriate location: Performing a task in an inappropriate location, such as making repairs in the field, can increase a task's difficulty by one level.

Lack of proper tools: Performing a task without the proper tools can increase a task's difficulty by one level. Some tasks can be performed without tools at all, while others require at least makeshift tools.

Lack of spare parts: Performing a task without the proper spare parts available, forcing one to improvise using inappropriate materials, can increase a task's difficulty by one level.

Crossing racial lines: When performing a task that would become more difficulty when working on other races or species, such as attempting to perform a medical diagnosis on an alien species for which you have not been trained, increase a task's difficulty by one level.

Using inappropriate technology: Some skills, particular Technical skills, are often dependent on the Tech Level at which they were mastered. Technology that is more advanced than the character's training is all theoretical to the character, at best. By the same token, the more advanced one becomes, the more dependent one becomes on technology, so the more primitive equipment is less likely to be of

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use to the trained professional. To reflect that tendency, the following two rules apply on tasks that require the use of technological implements:

- When dealing with technology more advanced than the character's level of mastery, the task's Difficulty Level increase by one level per tech level higher than the character's mastery, due to the lack of understanding advanced technology.
- When dealing with technology less advanced than the character's level of mastery, the task's Difficulty Level increase by one level for every four full tech levels lower than the character's mastery, due to the restrictions that come about from using primitive technology.
- A character's mastery can be determined by both the average tech level of the interstellar society to which they belong and the tech level of the character's homeworld. This should be determined by the referee based on the needs of the campaign. In the event that the character has training at various tech levels, the referee should use whichever is most advantageous to the character performing the task.
- In any event, if a task can be performed without the use of technology at all, the maximum increase in difficulty is one level, since a professional would most likely attempt the task barehanded rather than use tools that hinder more than doing it by hand.

Working with the Law: Tasks that are impacted by local law levels are often defined by their difficulty in a lawless (Law Level 0) or Low law level (1-3) society. In the event that the tasks are more difficult at stricter law levels, increase the Difficulty Level of the task by one level for worlds of a Moderate law level (4-7), by two levels for High law level (8-9)

worlds, and by three levels for Extreme law level (A+) worlds.

In situations where tasks become easier in a stricter law level (rarer, but they do exist), decrease the task's Difficulty Level by one level for worlds of a Moderate law level (4-7), by two levels for High law level (8-9) worlds, and by three levels for Extreme law level (A+) worlds.

Additional Rules

The following are additional rules for consideration in using this task resolution system. Using these rules is not required, but doing so may improve the effective use of skills, and rewards characters that specialize.

Aiding Another: When making a skill check to aid another, the assisting character grants a base +2 circumstance bonus for making a DC 10 on the roll, +1 to the circumstance bonus for every ten points by which the roll exceeds the base DC 10. (i.e., If the assisting character rolls a 13 on his assisting skill check, the aided character gets a +2 circumstance bonus. However, if the assisting character rolls a total of 33 on his assisting skill check, the aided character gets {+2 base, +2 for being 20+ more than the base DC 10 = +4 total} a +4 circumstance bonus.)

A character using the Leadership skill can lower the base DC for Aiding Another to a DC 5 by making a Leadership skill check at a Difficulty Level equal to the difficulty of the original task. In this case, the additional circumstance bonuses are earned for every ten points that the skill check exceeds the base DC of 5.

Alternate Difficulty Levels: If the Referee does not desire to remain with a BITS-inspired Difficulty Level model, the Difficulty Classes table at the beginning of the Skills chapter in both T20 Lite and the *Traveller's Handbook* provide an alternate set of de-

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scriptors and more levels of variation, as shown in the following table.

"Official" T20 Task Difficulties		
Difficulty Level	Skill Check DC	BITS Equivalent
Simple	0	Easy
Very Easy	5	Easy
Easy	10	Easy
Average	15	Average
Hard	20	Difficult
Difficult	25	Formidable
Formidable	30	Staggering
Challenging	35	Impossible
Incredible	40	Hopeless
Nearly Impossible	40	Hopeless
Opposed	Special, as previously	

Extended Tasks: This rule helps define tasks that occur over an extended period of time, and typically require multiple checks. Examples of such tasks include competing in a speeder race, or warming up a starship (which might take a minute or two) while a melee combat take place nearby (occurring in rounds). To resolve an extended task:

1. Define the task's Difficulty Level, thus setting the skill check DC.
2. Then define the average amount of time the task will require, and determine how many checks would represent this measure of time.
3. Multiply the number of checks by the DC based on the Difficulty Level to arrive at a target number. (Alternately, the referee could set an arbitrary target number.)
4. Every round of action (or similar unit of time), roll a skill check and add the result to a cumulative total.
5. The extended task is resolved when the target number is achieved.
6. In opposed extended tasks, the first to reach the target number succeeds. If both reach the total in

the same round, the one whose accumulated total is higher succeeds. If both have the same accumulated total, then the higher total skill modifier determines who succeeds. If there's still a question, flip a coin to determine the winner or roll another opposed simple skill check, the highest result becoming the winner.

For example, assume that a starship pilot is contacted by crewmembers requesting backup in a combat situation. The pilot has to warm the ship up from its rest state, an Average task that takes about two minutes. An Average task has a skill check DC of 15, and two minutes is approximately twenty rounds of combat. From that, the referee determines that an extended task roll must reach (15 DC times twenty rounds) a total of 300. Not wanting the fight to last that long, the referee quickly drops the value to 200 before telling the players the goal. As the combat continues with the trapped characters, the pilot rolls his T/Engineering skill check every round, and adds the result of his check to a running total. When the running total equals or exceeds 200, the pilot can take the ship into the air and fly to the rescue of his comrades.

In another example, the characters are racing through the city streets in pursuit of an alien bearing a vial of virulent viruses, hoping to stop him before he can get away. The Referee determines that the chase is Difficult, and he imagines that it should be resolved in perhaps four skill checks, so he sets the target number at (DC 20 times four skill checks) 80. If the alien achieves 80 first, he gets away; if the players do, they catch up with him before he can get away. Each round of action, the two drivers roll their Drive checks as they whip through the city, and the Referee describes the action, building the suspense for the players. When one side reaches 80, the chase ends, with one of the two results. 🎲

Changes of Mind

by Andrea Vallance

Part 3

237th of 2029 (063-98): Offices of Imperial Intelligence, Alsuy

Sector Chief Nohmonaa looked up as her appointment arrived. *Frifru* Naaz Teequow, her presence sent a shiver down her spine. The title *frifru* was usually translated as 'baroness', though her rank was not Imperial. Nobody was exactly sure which peerage she'd gained the title from, or indeed if she ever gained it from anyone at all. But nobody dared dispute her use of it to her face, at least nobody that wanted to live. While she appeared to be in her early middle age, nobody was sure of her exact age. Definitely a lot older than she looked. Imperial records of her went back at least fifty years. She was certainly attractive, tall, willowy, long raven black hair, deep penetrating eyes. A beauty all right. If she hadn't been so disturbed by her, she may have asked her on date. Teequow was accompanied, as she always was, by her 'aide', Colonel Petris Fant. A stone-hearted sociopath known behind his back as "Psycho Fant", both for his nature and slavish dedication to his mistress. Again, Colonel Fant's rank was not Imperial. Granted by the forgotten dictator of a minor nation on an insignificant world somewhere unimportant. Meiz would not have wanted to date him. Not only was it against her nature but, while he had a certain masculine attractiveness, five minutes of conversation left you with the distinct impression he was actively imagining doing extremely unpleasant things to you.

She bid the pair sit as they entered. They did without a word. Meiz played host: "Refreshments?" The silence that followed put Nohmonaa on edge but that she imagined was the point.

Frifru Teequow got to the point. "So what is the job?"

There was little point in further attempts at 'niceties', so Nohmonaa pulled up the files. A holo-

gram of a young innocent looking man appeared on her desk. "Lord Sakuya Trace. He defected to the Protectorate a few months ago. We need him back."

Teequow steepled her fingers and leaned forwards. "And the complication is?"

The Sector Chief shuffled a little uncomfortably "Complication? None, just particularly urgent."

"You have at your disposal many, many, highly competent operatives, more than capable of dealing with even the most urgent situations. So, the complication, if you please."

"Several factors make this particular job suitable for your... talents. The need is exceptionally pressing, failure is not permissible, the job needs to be followed through regardless of the cost or any collateral damage, and all in all, it would be far better if the matter was handled..." she phrased it delicately, "...outside normal channels."

Teequow considered, thinking of pressing the point, but to what end? "So there will be no restrictions on how I carry out this job?"

"Lord Trace is often in the company of the son of one the Protectorate's Councillors, Lady Manish to be exact. It would be preferable by far if he remained unharmed. However if it happens, it happens."

The vaguest smile formed on Teequow's lips "Yes, preferable by far." There were few people that troubled *Frifru* Teequow's thoughts. Lady Councillor Manish was one of them. "I shall endeavour to avoid it. Now the refreshments you offered?"

Frifru Teequow's thoughts narrowed to the job at hand as Neiz's aide left "You have something personal of the subject?"

Sector Chief Nohmonaa grinned, she had been prepared for this. She retrieved a simple pendant from a drawer, "His mother gave him this at his confirmation."

Teequow let it fall into her hand unbidden. She closed her fingers around it and let her mind reach out to feel it "A Makerite? Unusual for one to defect?"

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"Yes, but he has." Just the slightest trace of irritation in the Sector Chief's voice.

Teequow closed her eyes and appeared to go into a trance, swaying slightly in her seat. Meiz felt deeply unsettled. She had dealt with psions before and none could be described as 'ordinary', but this one was something far out of the ordinary even by their standards. The room was silent for a good five minutes while Teequow just rocked, eyes blank. Finally she looked up, "You have a bathroom? And I shall require some jasmine tea."

Meiz found the sounds of the *Frifru* retching oddly reassuring. It was good to know she had some weaknesses. Teequow appeared pale when she returned. She sat and sipped the jasmine tea. "You have a comprehensive star chart, I presume?"

The Sector Chief nearly missed it, she was good, but Meiz could tell, she wanted this mission now, for her own reasons. No matter, if her interests and the Imperium's now coincided, all the better. "Of course."

Meiz watched with some awe as she scanned the night sky of various worlds. Her memory for detail must be impressive. Finally she stopped and looked up. "Here, this world, Kalu Marasiin. He will be here in two weeks. Accompanied by two men and two women."

"Are you sure?" The Sector Chief could guess who these people were.

Until this point, Colonel Fant had remained silent. "My Lady doesn't make mistakes." You could feel the anger as he hissed.

Teequow placed her hand softly on his knee. "I am sure the Sector Chief understands that, Petris." He continued to glare at Nohmonaa. The *Frifru* kissed him, then returned her attention to Nohmonaa. "Certain."

Nohmonaa brought up the holographic image of three women and two men "Will any of these people be among his companions?"

Her answer was surprisingly forceful. "Two of the women and one of the men."

This concerned Meiz. "You have any idea who the fourth might be?"

"No."

The Sector Chief did not like this new factor but there was little that could be done. "The details of those three and two others are in these files." She handed the *Frifru* a datachip. "Is there anything else you require?"

"Yes." She mentioned a name, a man's name. "I will require him."

Nohmonaa thought she was ready for anything but her answer had shocked her. "*Him?* Why?"

Impassive. "He will be there, better with me than otherwise." Nohmonaa found the phrasing unnerving.

"He's currently serving thirty years for his crimes."

No change, emotionless. "He is here on Alsuy, and his release is well within your powers."

Nohmonaa pondered, drumming her fingers on the desktop. She pulled up a file on her computer, studied it then touched the intercom. "West, draw up a section 36 release for Prisoner..." she read from the file, "...IMR 10548310. Currently held in Ishashmuu Detention Barracks." Back to Teequow, "I will have him delivered tonight. I assume you will want to leave immediately?"

242nd of 2029 (070-98): Enroute to jump, Trepidation, The Prouse Belt

Our last stop before Kalu Marasiin. An uninhabited system in Protectorate territory, safe from prying eyes. Afira, as always, had made short work of skimming the sole planet, a gas giant with the somewhat distressing name of Trepidation. With our tanks full, there was no reason to remain and we were heading out to the jump point when the alarm sounded. A ship, her beacon bleating a distress call. Sakuya had quickly got a fix; the boy was figuring his way around a sensor panel with surprising ease.

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"I'm certain, Siish. It's on the third moon. According to its transponder the *Angel Dethor*, an AK412 schooner." His attention went back to his display. "Registered from Hiryu in the Empty Quarter sector. Can't get anything more."

Odd, very odd. Jane certainly thought so. "The AK412 is a standard Protectorate design, so what is one registered from there doing here?"

Afira offered an answer. "Would make sense if she's Sesheryn. They use a lot of our designs still."

"Maybe, but why is a Sesheryn here?"

I could think of one possible source of answers. "Fakri might be able to shed some light. He's Sesheryn, remember."

"I hadn't forgotten Isabella. And it had already occurred to me. Ariaryn, bring him up here. The rest of you get your sidearms; I still don't trust him." Siish had had an arms locker installed on the bridge after our last 'adventure'; he wasn't going to be caught like that again. "You, too, Isabella."

Afira helped me as usual. I'd been spending a lot of time with Ariaryn and was getting better but the others still had concerns. "Fakri, now, yes? Getting awfully familiar with him."

I had to smile, she was right. I had been spending a lot of time with him. "I find his company pleasant, that's all."

"No, it's not, Isabella; you sparkle when you're around him. Everyone's noticed it."

Damn. I blushed; she was right. I was attracted to him. "I like him, he makes smile, he's got a brain in his head and he plays a mean game of *Zamkii*, much better than Siish or Ariaryn."

"He's leaving when we reach Kalu Marasiin. Keep that in mind, Isabella. Guard your heart, my sweet."

A soft sigh escaped my lips, "I know, and I am." I had to; she was right, could be nothing there.

Ariayn returned with Fakri after a few minutes.

"The bridge; I am honoured, *Kaptan*."

"You're here for a reason: You might be able to help us."

"Anything I can do, though it would help to know with what. My minder was less than informative as to why I was summoned." Ariaryn's lips curled ever so slightly upwards. He almost smiled. I think he was warming to Fakri, too.

"We have ship in distress. We think it might be Sesheryn. I was hoping you might be able to confirm that."

"If I might look at the sensor data."

"Ariaryn, take over sensors from Sakuya."

One person who was definitely not warming was Sakuya. Fakri still terrified him and he was clearly relieved by that. Ariaryn brought up the data as Fakri stared intently at the display. "Yes, she's Sesheryn. A Reeve's^s ship, this far from home. My guess she's on *Feoderate* business, odd." He studied the display closer. "There may be a coded datastream in this, you know?" He turned to face Siish straight on. "You are going to assist." Much more a statement than question.

There was a just the smallest note of offence in Siish's reply. "Naturally, Vu Agent. We Luriani look after our friends." Then his voice softened as he addressed Sakuya, "Do you feel up to investigating that with him?"

It was obvious that Sakuya did not feel up to it, but, "Yes, Siish, I'll do it."

Afira: "I'll come help."

Siish's mouth opened to say something, then closed. A pause, "Yes, I'll take the helm while you do."

242nd of 2029 (070-98): Trepidation III, The Prouse Belt

Afira had made a point of keeping her body between Sakuya and Fakri. She touched his hand, stroked his back lightly and occasionally ran her hand over his hair as he worked. It seemed to help. Fakri, for his part, realised what was going on. He

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made sure he kept his hands in sight and kept that physical separation. Siish piloted us towards the moon while he worked. There was never any doubt that we'd go in. Any ship in distress, but especially a Sesheryn. We'd just entered orbit when Sakuya finally piped up, "Yes, there's a hidden datastream here. It's coded and very well hidden. It'll take a bit to decipher."

"It'll have to wait a moment. I'll need a sensor sweep of her before we go down. I'll put *Raledenet* in low orbit over the site. Think two or three passes should do." His attention turned to Fakri. "No need for you to be there while we do that. But you may stay on the bridge; we'll need you later."

He stepped away from Sakuya; the boy's relief was palpable.

The third moon didn't have an official name, just Trepidation III. It was huge though; over 6,000 kilometres in diameter and with a cold dense atmosphere made up mostly of nitrogen with considerable traces of hydrocarbons. A primitive soup that might spawn life one day, may already have; nobody had done a detailed study, as far as the records showed. Siish brought *Raledenet* down low, skimming into the upper reaches of that atmosphere. Three orbits, three hours, more or less. Sakuya only focused on the sensors for a part of each pass, focusing his attention on cracking the code he and Fakri had found for the rest. Siish had just completed the third orbit.

"So, Sakuya, what can you tell me?"

"It's been there awhile, some kind of snow on it. It's cold, same temperature as the atmosphere." He put some images up on the main viewer. "Looks like it's crashed; damage around the drives, I think. And looks like the hull has been breached."

Ariaryn surveyed the images. "Those are laser burns, I'd say. She didn't crash; she was brought down."

Siish wanted information from me, too: "So, Isabella, any chance of survivors?"

"Very low to none, I'd say. Nobody would survive long down there. Might be some in the low berths though."

"Jane, any signs she has power?"

"No, Siish, cold and dead. Batteries might be possible, so maybe low berths are working."

He considered. "We'll need a team to go to her. Ariaryn, Isabella and," his attention fell to Fakri, "Vu. Your people, you might be able to see something we miss." Pause. "But they'll be armed, remember that." Obviously Siish's trust was still in short supply. "Sakuya, you've made progress on that code any?"

"Yes, Siish, I'm close." His voice was trembling, why? "If... if... umm... if..." stuttering, "If I could have his," he looked at Fakri, "help, I might be able to crack it before we get down."

I joined Afira to stay by Sakuya as he and Fakri worked. He seemed to be relaxing a little as he lost himself in the task at hand. I glanced up at the main display as we descended. Siish was bringing her in slowly, cautiously. Something was off, here, and taking chances didn't seem wise. "I'm going to put her down about two kilometres from her, but I'll do a fly over first. I'll need you back on sensors, Sakuya. How is that code coming?"

He didn't look up, still engrossed in code "About fifteen to twenty minutes Siish. Nearly there."

"It'll have to wait. You can get back to it while the others investigate. Ariaryn, Isabella, and Vu, get to the airlock and get ready."

I felt the gentle shudder as *Raledenet* settled onto her landing gear. We were all standing ready, oxygen masks and cold weather gear. The intercom crackled, Siish "Surface gravity 0.4G, it's a balmy minus four Celsius and there's an electrical storm. Be careful and I'm sending the sensor data on the crash site to your portacomms."

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Fakri looked as Aairyryn checked his combat rifle. "Is that really necessary? I'm not going anywhere; there's nowhere to run to on this world."

Aairyryn didn't look up as he replied, "Yes, it's necessary."

The airlock hissed and we got our first look at Trepidation III. The surface was lit by an eerie glow. It was raining and we could see lightning flashes from the storm. They were impressive. It took us about thirty minutes to cover the ground from our landing site to the wreck. The landing gear on one side had given way and she was leaning off to one side. She was cold, dark and forbidding. Aairyryn made us halt when we were about twenty metres from her. "Vu Agent, I'd like to go scout her first. I have your word of honour you will stay here with Isabella?"

"Yes, of course." Simple and to the point. Aairyryn nodded his acknowledgement and headed off.

We sat in silence for a few moments before he spoke. "One more jump and then you're rid of me Manish Wa."

I was slow to answer, "Yes." I don't think he detected the note of wistfulness in my voice.

"I will miss our time together; I have really enjoyed the past two weeks in your company."

"As have I, Vu Lul, as have I." Not sure why I repeated myself but I did know I wasn't looking forwards to his departure.

"You do know you can call me Fakri; I have overheard you using my first name." I couldn't see his mouth but his eyes told me he was smiling. "Accidentally, of course."

My mood lifted a little for some reason. "Thank you, Fakri. And please, call me Isabella."

"I believe thank you is appropriate; I'm afraid the oxygen masks preclude a traditional Sesheryn kiss."

I'm sure my eyes betrayed my smile at the thought. "Then, perhaps when we're back on the ship?"

I heard a chuckle. "Yes, perhaps, Isabella." A pause, then, "Isabella, would you be so kind as to pass me the PRIS please?"

I handed them to him. "I am sure Aairyryn will be making a full scan; he is more than competent."

"I am in absolutely no doubt of that, but he did not grow up around Sesheryn ships. I might pick something he'd miss."

I nodded my acknowledgement, and he slowly swept the site. "So, do you see anything out of the ordinary?"

He continued scanning. "Yes, I do." He handed the PRIS to me. "There, over by the thrust plates, directly under them in the extreme ultraviolet, what do you see?"

I scanned the area, then scanned it again and a third time just to be sure. "Nothing." I was puzzled.

"Exactly; there should be something there. It should have the rank of the Reeve but it's not there."

Still puzzled. "I thought Reeves didn't have rank? You were a Reeve or you weren't. They're all equal."

He was chuckling again. "Not exactly; some are more equal than others. It's all to do with the amount of respect they can command. It should all be detailed there under the thrusters but it's not."

"Mmm... A lot about Sesheryn I don't know, but it makes sense. But what does it mean that it's not there?"

He suddenly sounded serious. "I don't know, but it's not a good sign."

Aairyryn returned a few minutes later. "Her hull's been breached in four places, no signs of life and no recent movement around her. Other than that, seems clear to go in. You two ready?"

"Yes, but Fakri found something."

He looked over at Fakri. "What did you find?"

"It's a Reeve's ship, but it doesn't have their ranking. It should be written in the extreme UV near the thrust ports. But it's not there."

Aairyryn took his PRIS and scanned, "No, nothing there. And what does this mean?"

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"I don't know, it's sort of like finding a Wurlana ship without its history painted on, just not right."

Ariaryn considered, then took a deep breath. "Well, the only place we're likely to find answers is inside. So we should get going."

242nd of 2029 (070-98): The *Angel Dethor*, Trepidation III

We entered the dark ship through a breach in the engineering compartment. It was a mess; clearly something had hit this hard. There was snow on the floor, she'd been down awhile. We started to move towards the hatch to the main compartments when we saw it, a body.

"Isabella, check them please. Vu, see if you can find any power."

I knelt and turned the corpse over; a young man, late twenties to early thirties, half his face scorched and burnt. He'd been dead a good time from the state of him. I examined closer using my medscanner. "His skull is cracked; looks like he was thrown by something, probably an explosion. I'd say died of internal injuries. But the body's been moved post mortem."

"This class carries two engineers. Vu, any sign of power or another body?"

"Yes to power, batteries; No to bodies. I'll bring up the emergency lights if you'd like."

"Yes, bring the lights up. Can you tell me how much charge is left in the batteries?"

"I'd have to say almost full." That didn't bode well for survivors in low berths.

"We'd best move on, find out what happened." I found it odd the way Fakri seemed to accept Ariaryn's orders without question.

Beyond the hatch was the cargo bay and passenger compartment. We ignored them; if anyone was still alive in a low berth they'd be just as good or bad after we finished with the rest of the ship, and knowing what had happened might be a big help

dealing with any survivors. It was eerie moving in the dim red light, reminded me of the *Apuludukii* during her final minutes. Bad memories; I suddenly wondered what had happened to the other survivors, fourteen of us crammed into a little boat.

"Isabella!" Ariaryn's voice snapped me back to the present. I looked at him. "We need to climb, up to the bridge." A tinge of concern in his voice. "You're up to it?"

"Yes, fine, Ariaryn, you want me to go first?"

"No, I'll take point, Vu after me, then you."

We headed up, three decks then out on to the control deck. There were nine staterooms, the bridge and the boat bay here. Ariaryn halted when he reached the top. "There's been gunfire here, I can see at least four bodies."

"Well, whoever was shooting at them is long gone so may we proceed?" Fakri sounded impatient.

Ariaryn just grunted his disapproval as he hauled himself up out of the access way. "Okay I'm going to check for booby traps and unexplodeds, so you two stay put 'til I call you up."

It was chaos when I finally dragged myself up onto the control deck a few minutes later. I could see the obvious signs of combat, bullet holes, burn marks, and bodies. I scanned and could see at least five from the access way. Fakri offered his hand to help me out, surprisingly strong. He turned to Ariaryn. "So, shall we investigate?" Perhaps he wasn't taking leadership quite as well as I had thought; Ariaryn certainly wasn't appreciating it as he snapped back, "You're here to help, Agent, not take charge." He let that sink in but Fakri was right. "The hatch to the bridge has been welded shut, from this side. I'm sure there's some cutting gear down in engineering, I'll get it while you two check the bodies. There's seven in total here." He pointed. "Agent, I assume the Imperials taught you the basics of investigation?"

He smiled, "Yes, we covered the basics."

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A woman, human, middle-aged, shot through the head. Somehow, she seemed quite serene, dead on a nameless moon in a nowhere system; I wondered what she had died for.

"So, does your medscanner tell you anything we can't see for ourselves?"

"No, head wound, death would have been instant." I looked at the scanner again. "She has children." I said it matter of fact, five years, I'd become so immune to death five years ago. "Can you add anything?"

"Sesheryn, from the tattoo; married to a Reeve, from the ring, other than that, no. But I imagine we'll find her husband here somewhere. His ring will match hers."

We checked all the bodies and Fakri took images and measured bullet holes. But all of it told us nothing. If there were answers, they were on the bridge. And that would have to wait for Ariaryn's return.

It took him about ten minutes to get back. Another five to cut through the welds. The hatch swung open with ease; there was some kind of metal mesh curtain on the other side. The bridge was a shambles, looked like somebody had let off a few kilos of explosives in there. Ariaryn looked at Fakri. "So, any ideas why, yet?"

"No more than you, I'm afraid. What I want to know is why was the door welded shut?"

I swear the two of them would have stood there all day pondering. "Well, perhaps the answers are in there." It wasn't like me to snap, nor Ariaryn to hesitate; something about this ship was making us all edgy. I drew a breath. "I don't like this ship; it's making me nervous and I think it's getting to you two, too."

Fakri was perhaps less than convinced. "How can a ship make you nervous?"

"It just is, Fakri, I have no idea why but it is."

Ariaryn had been quiet. "She's right, something's wrong here and the sooner we get this over

with, the better, I think. So, shall we?" He indicated the bridge, pushed aside the curtain and stepped in.

242nd of 2029 (070-98): The Bridge, Angel Dethor

Ariaryn seemed stumble as he stepped in, Fakri reached to help steady him and fell, heavily, as Ariaryn grabbed at the hatchway for support. He missed and collapsed to the floor, he blurted, "Stay!"

I didn't quite ignore him. I braced myself, took a breath and stepped carefully in. It was like a wall of voices screaming in my head, I couldn't think and everything around me seemed to spin. I grabbed for the frame of the hatch as Ariaryn had, but I managed to connect and stay upright. A wave of nausea. I fought the urge to vomit, clinging to the frame for dear life as I frantically tried to focus and drive the noise from my mind. Finally my head started to clear. I looked down, both Fakri and Ariaryn appeared to be unconscious. I waited a moment longer for the screaming in my head to subside. It didn't stop, but I did manage to push it far enough away to be able to stand unaided. I reached down to check both of them. They were alive and softly moaning. I needed to get them out. There was a moment of hesitation, which one first? I grabbed Fakri, I told myself he was in more danger. He was heavy and it took a few minutes to manhandle him out the hatch. No time to rest, I bent and took hold of Ariaryn. Heavier still, I cursed as I forced him out. Then me, up and out. Only then did I collapse, to lay panting on the floor beside them. The screaming slowly subsided leaving only a splitting headache.

Fakri was the first to start to recover "What the *Larmri!*¹⁰"

It was the first time I'd heard him swear. "No idea."

"My head feels like it's about to explode. You have some analgesics in your medkit, I hope."

I opened it, retrieved a bottle of pills, took two for myself then handed it to him. "Raidon, powerful, no more than two."

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He uncorked his water flask, lifted his mask and swallowed before laying back on the floor. Ariaryn was coming around now, groaning. I handed him another bottle. "Byraalin, two, now, then rest." I knew exactly what he was going to do, and he did it. He got to his knees before he fell back to the floor "Take the painkillers, *dokhtor's* orders!"

He reluctantly took the pills. "We need to get back in there and find what in all the Gods' names caused that."

"Let the drugs take effect before either of you go doing anything." The pain was already dulling for me. "They shouldn't take long to kick in." I tried to lighten the mood. "I really don't want to pull you out again. You could both do with losing some weight."

Ariaryn snorted, he sounded offended. "I am not overweight!"

Fakri concurred. "Neither am I!"

"Lighten up, you two." Something was very wrong here. I stood and made my way to the hatch and peered in. "I can see three bodies in here." The bridge seemed different somehow now.

Fakri crawled over and looked. "Where? Can't see them." He rubbed his temples. "And you sure only two? Feels like I've been on a month-long bender."

"There, over there." I pointed. "And yes, sure, Raidon is addictive. Though you don't seem the bender type." I grinned; Fakri's mood at least seemed to be improving.

Ariaryn dragged himself over to join us. He gazed intently into the bridge, searching. "Isabella, I can't see any bodies either."

"There, over there, and there, and there!" I pointed and emphasized where each was.

The two of them just shock their heads. "I can't see them, Isabella, and I'm pretty sure your Fakri here can't, either."

I just stared at them both. "You honestly can't see them, can you?"

They both nodded. "Neither I nor Mman *Lul* here can see them. So, what is going on?"

"No idea. Agent, but I know I don't like it one bit." Ariaryn reached for his portacomm. "Ground team to *Raledenet*." The comm just crackled. He repeated, "Ground team to *Raledenet*, come in please." Still just static. Again, "Ground team to *Raledenet*, please respond. Siish, Sakuya, Jane, Afira, anyone can hear me, no?" Just the white noise of a dead channel.

Fakri sounded worried. "You gave a status report just before we cut into the hatch?"

"Yes, and now, nothing." He paused to think. "We need to leave."

"I'm damned if I'm going to just run, Ariaryn!" Anger, why was I angry? "Look, whatever's in there doesn't seem to affect me as badly. I'll go in alone."

Ariaryn was not keen. "Too dangerous."

Fakri had the same opinion. "And if you collapse, how do we get you out?"

I thought a moment. "Tie a line around me; if I go under, simply drag me out."

Fakri went to say something; Ariaryn raised his hand to cut him off. "Okay, but first sign of trouble and we haul you out, Okay?"

"Yes."

I was a little nervous as they tied the line around me, a harness so as to avoid injury if it was required. No what I was feeling was a little anything and nor was it simply nerves. I was terrified at the prospect of facing that room again. But I was determined, too; I was going to do it, no matter what.

Ariaryn tugged at the harness and line as he tied the final knot. "Right, in, scout, and out again. You understand? First sign of anything, you get out of there."

He was not truly comfortable with what I was doing. "Yes, I understand, and don't worry, moment I think I'm slipping, I'll be out of there." That

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was honest, I didn't know what was causing the terror in that room, psionics I guessed, but I knew I couldn't handle it long.

Fakri was clearly nervous. "I've encountered a lot of strange things in my time." He put particular weight on the words 'a lot'. "Things I can't explain and probably don't want to, but whatever is in there is beyond anything I've met before. Be very careful, Isabella." The stress on those last four words left me no doubt he was more than worried.

"It will be fine, a quick in, check the bodies, look round and get out. No heroics or loitering. Trust me, I don't want to spend a second longer in there than I absolutely have to." I gave Ariaryn's knots a totally unnecessary tug to check them. Ariaryn did not make that kind of mistake. "So let's do this." I braced myself, took another breath, gently moved the curtain aside and stepped in.

The screaming hit me as soon as I was past that curtain. Not quite as bad as before; maybe the painkillers were helping. I held onto the frame of the hatch to steady myself again as I pushed the screaming as far out of my mind as I could. Another deep breath, then I moved towards the closest body. It was a man, human. No obvious wounds; curious. I ran my medscanner over him. Massive neural trauma. That's what had killed him. This was not at all reassuring. I thought about relaying this information to Ariaryn and Fakri but I was sure it would be followed by them hauling on the line to drag me out. So I kept quiet. I did a fast physical search. A handgun nearby but nothing 'out of the ordinary'. I snorted at that thought, everything in here was 'out of the ordinary'. Odd; that seemed to help push the screaming a bit further back. The next body. A woman, same neural trauma. Definitely not good, especially as the screaming was getting worse as I moved further in. I didn't bother with the search this time. I needed to press on while I could. The last one, male, older. I didn't need my medscanner to see the wound in his chest that had killed him. The scream-

ing was almost overwhelming me now. I heard Ariaryn yell, "Enough, I can see you swaying. You're not coping. Get out now."

"No, just a quick check. Fifteen seconds tops." That's when I saw it, the ring, matching the one on the woman in the other room. I reached to touch it. The moment I made contact it felt like my brain was being ripped apart cell by cell. My mask filled with my own vomit, I collapsed onto all fours. I felt the line go taut as Fakri and Ariaryn put their full strength to it. A box, in other hand a box. A glowing pulsing light. Every neuron in my brain was being shredded, I wouldn't last until they pulled me back. Instinctively I reached for that pulsing glow. My finger made contact and for the brief instant before I lost consciousness, my body and mind burnt with unimaginable agony.

242nd of 2029 (070-98): Askiiimir

Three figures, two men and one woman stood in silence waiting for the shuttle up to their liner. Suddenly the woman yelped and doubled over as in pain. One of her companions reached to steady her "What hurt you, *Frifruue*?"

Frifruue Teequow looked up at her lover, her voice calm and reassuring. "It's alright, Little One. But the Uhuln has bonded to a woman."

The second man looked on with disgust, for both his companions.

Colonel Fant was deeply concerned as he held his lover. "But, My Lady..."

She cut him off. "Do not concern yourself; even the most powerful psionist would take months to attune themselves to the Uhuln."

246th of 2029 (074-98): Raledenet, in jump en route to Kalu Marasiin

I woke in bed, my head still ached. I rolled over to be greeted by Afira's smile. "So, back with us, yes?"

I groaned, "How did I get here?"

"Vu, he went in and pulled you out. How are you feeling?"

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"Like somebody's driven a dreadnought through my head." I glanced around; I was in my own room. "Could you grab my medkit, please? I need some painkillers."

A small giggle escaped her lips, most uncharacteristic of her. "As a *dokhtor*, don't want to check what you've been taking while you've been out, first?"

She did have a point. "Yes, of course." She handed me a datapad. I looked; through and quite competent. "Ariaryn's done a good job."

"Wasn't Ariaryn who took care of you. Vu did, seems he's a qualified paramedic in addition to being a spy. He was quite insistent on it, in fact." Another giggle.

This irked me, for some reason. "He's not a spy, he's a Ministry of Justice Special Agent, quite different. And what's with the giggling?"

She beamed. "He's as smitten with you as you are with him, Issee."

"No! Never!"

One of those Luriani deep belly laughs. "He is and you are, no point denying it."

I slumped back into my bed. "Maybe, give you maybe." I hated to admit she was right. "But nothing can come of it."

The smile on her was one tinged with sadness. "I know." She hugged me.

I sighed resignedly. "Falling in love's an *aneer*, sometimes, Afira."

"I know that, too; Siish, me, real *aneer* there." She kissed me on the forehead. "Mind you, *aneer*, you could, you know. Do you good. When was the last time?"

My turn to laugh. "Far, far too long. Augustine, over a year ago now."

She looked a little shocked. "Really! And you a *dokhtor*, you know that can't be healthy."

I just giggled and pushed her playfully. I regretted it instantly. "Ouch!!!" Seemed my head wasn't the only thing that still hurt; my entire body

ached "Enough talk about that. Now pass me my medkit, I need some more *oi aneer*¹¹ painkillers!"

Fakri came into see me later; Afira had told me he'd been checking on me several times a day. I was touched and Afira was right, I was falling for him. I forced such thoughts from my head. He was a Special Agent for the Imperial Ministry of Justice and he would be gone in a day or two.

He sat the edge of the bed. "You're looking better; how are you feeling?"

"Sore as all *larmy*, to borrow your colourful term, but I believe I owe you my thanks for pulling me out."

He looked a little awkward. "Nothing, honestly, just returning the favour."

"Nonetheless, I am very grateful." I don't know quite what came over me, maybe too many painkillers, but I leant over and kissed him on the cheek. He looked very awkward; I just smiled, "I believe it's the custom of your people. Or so I'm told."

My smile was returned, "Yes, yes it is." There was a moment of awkward silence between us, so I broke it. "So, what happened down there?"

He thought for a moment. "Well, when you went down, I ran in to try and get you. Exactly the same thing as before happened, head spinning, unable to stand and then it just stopped, instantly all went away. I got to you and got you out. Pretty simple really. Ariaryn was about two seconds behind me." He reached over and picked up a box, that box, the one the Reeve had. "You had this clenched in your fist, took both of us to pry it from your grip. What is it?"

I took the box. About eight centimetres by five centimetres by three centimetres, a dull silver box. It felt warm in my hand. "No idea; it was in the Reeve's hand. Mind you, it had a glowing light on it when he had it. I touched that." I studied the box, there was no sign of the light.

"Clearly that was the off switch, then."

"Yes, but what the hell is it? It feels warm."

Raconteurs' Rest

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"Warm? I didn't feel that." He extended his hand. "May I?" I handed it to him "No, cold. So it only responds to you." He pondered, then laughed "You're the doctor, you might to run a few tests on yourself."

"I most definitely shall." My thoughts turned back to the ship. "And after that, what did you find on the ship?"

He shrugged. "Honestly, not a lot. A few more bodies, no survivors; the computer had been shredded with explosives so we couldn't retrieve any data. However your young Lord Trace did manage to decrypt the datastream. It's a set of coordinates on the mainworld of the Khingir system; you ever been there?"

"No, didn't even know there was a Khingir system. You?"

"No, none of us have. It's a backwater world half way between the Imperium and Protectorate."

I was baffled. "Awful lot of mysteries in that ship."

He nodded, "Yes, far too many."

"So what's Siish going to do?"

"Report it to the appropriate authorities; pretty much what I would do, too."

That was Siish, by the book. "Yes, he would," I smiled, my brother, it was good to have family. There was one thing that was still puzzling me. "So, tell me, Fakri: just how did you get my 'second' to let you look after me?"

There was a strange look on his face, a mixture of bashfulness and impishness. "I can be very... persuasive... when I want. And besides, I think Ariaryn is starting to warm to me."

Notes

Notes numbered 1 through 7 appeared with previous parts of the story.

8. The Reeves were the officials of the Sesheryn Feodarate. They formed what passed for a government and administrative service.

9. Portable Radiation Imaging System, an advanced personal imaging system capable of scanning a wide spectrum of electromagnetic radiation from infrared to gamma rays.

10. A Sesheryn word meaning the underworld or hell, derived from the Luriani term *lamry* for the place of torment of those who break faith with the Luriani Gods. Normally used as an expletive.

11. The use of the copula *oi* (to be) marks a verb as the present particle form, where (like Anglic) it can be used as a verbal noun or adjective, e.g., *awar* to live; *oi awar* living. 🌟

Confessions of a Newbie Referee

Timothy Collinson

#19: Jealousy

TravellerCon USA is going on as I write and I'd soooooo like to be there. Partly because of all the great games of *Traveller* I'm sure they're having, partly because of the opportunity it would represent to try running some adventure I think might work, partly because it would be something of an escape from day-to-day life, partly because it's in the States and it would be great to go back after far too many years, but mainly because I'm sure, were I able to go regularly, I'd start to get to know some great fellow minded Travellers as I have done at the UK equiva-

lent. So I'm very jealous of you guys and trust you're having a great time! I look forward to reading all about it.

But I'm jealous of other *Traveller*-related things as well. Such as the referees who have a great command of the rules and know just what's needed at any particular moment. They don't need to look things up constantly or (appear to) rehearse endlessly beforehand. Just to run a minor combat efficiently I spent considerable time running simulations of it in the months beforehand. I'm also in awe and quite jealous of many referee's ability to conjure scenes or NPC voices from thin air; or to react – often in char-

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Confessions of a Newbie Referee

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acter – to whatever is thrown at them by PCs; who really add to the sense of being there without a lot of notes or (apparent) stress.

I'm particularly jealous of those referees who have a regular gaming group and get to see ongoing characters and real development across the weeks and months of play. For all sorts of reasons there's never to my knowledge been a nearby game I could join and, until recently, I've not really had the ability or the confidence to try running my own.

Putting together a third edition of bibliography, I can also be quite jealous of those who own a book or periodical issue or an item that I've not seen and probably can't purchase due to its rarity. Partly this

stems from obsessively trying to be 'completist' I think the term is, partly due to being a librarian and by definition a 'collector', but also partly due to wanting the bibliography to be as helpful as it can be to those using it. In fact, this last was why I started the thing in the first place as I tried to guide a friend into what might be most useful.

I try to overcome my jealousies by reflecting on how fortunate I am to have been part of the UK TravCon for seven years, or by trying to become a better referee, or by beginning to ask friends if they might be interested in a regular game, or by simply enjoying the books I already own (I can feel quite guilty about that one!). But I should also reflect on the simple privilege of having known such a great game and community across so many years. ☼

Critics' Corner

Venture Class Frontier Courier

Reviewed by Jeff Zeitlin

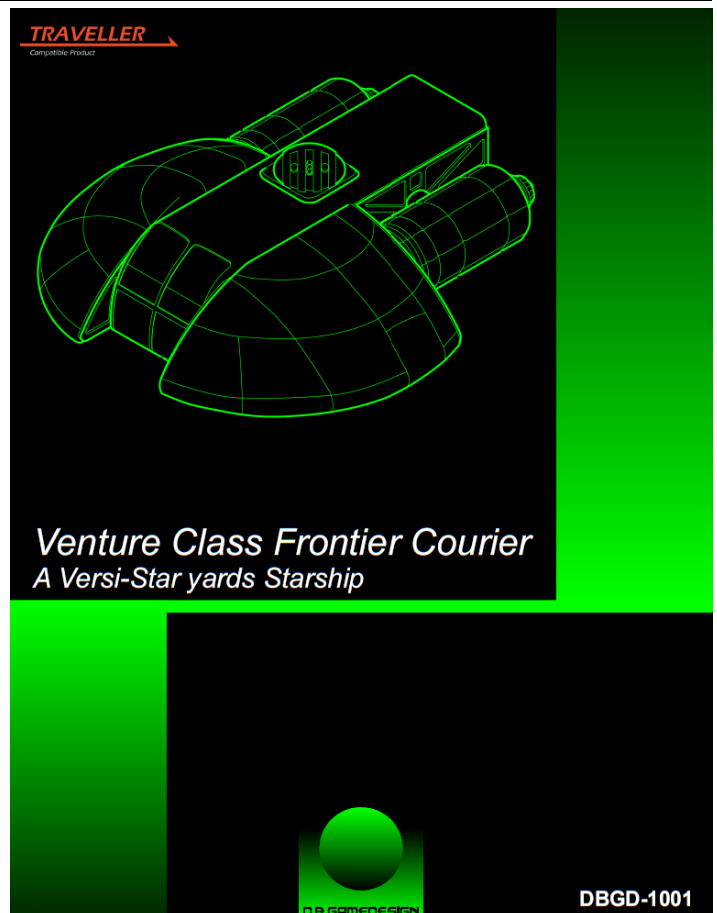
Venture Class Frontier Courier. David Blalock and Arthur Pollard. D.B. Game Design

<http://www.dtrpg.com/browse/pub/2418/DB-Game-Design>
12pp., PDF (plus plans only at large scale in separate PDF publication)

'Pay what you want' (both this product and plans-only)

Reviewer's note: This review will discuss both products mentioned above - the 12-page folio describing the ship, and the large-scale deck plans.

The *Venture*-class Frontier Courier is billed as a small low-cost general-purpose non-military starship. It can be classed as a "crossover utility" ship, with the J2/M2 performance of the *Suleiman* (Type S), and cargo capacity lower than the *Beowulf*-class Free Trader, but likely adequate for frontier trade. The text claims a construction cost of a little over MCr52; the spec sheet shows a total just over MCr39. The ship definitely fits into a "small ship, weak/distant government" *Traveller* universe, and is suited to be a player-characters' ship. Whether it's a good ship is left to the judgement of the players.



The folio product, on the other hand, doesn't rate better than "better than mediocre"; while it has ex-

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tensive information on the ship, it suffers from some deficiencies of organization and presentation.

Looking at presentation first, the product is very text-dense, with the typography being set in two columns, apparently in 10-point Arial or Helvetica single-spaced, with large outer margins and a very thin margin between columns. This makes it difficult to read if the zoom level is lower than about 75% on a laptop screen; on smaller tablets, the difficulty would be compounded. The spec sheet and deck plans, however, are nice and clear. There are three small views—forward, port side, and port forward three-quarter isometric—to give an idea of the shape of the ship; they do little to break up the dense “wall of grey” of the text. The spec sheet also shows a silhouette comparison of the *Venture* and the (now-retired) U.S. Space Shuttle.

The product would have been more readable if a serif font such as Times or Palatino had been used instead of the sans-serif font chosen; setting the line height to 11 points instead of 10 would also have made it more readable—and in a PDF product, page count really isn't important (my conceits to the contrary as editor of *Freelance Traveller* notwithstanding). Slightly smaller outside margins and a larger inter-column margin would relieve some of the “grey wall of text” problem as well. More artwork—perhaps some “character-eye” views of various parts of the interior—would have been welcome.

Looking at product organization, the authors provide a few short paragraphs of prefatory material, and then launch right into discussion of design details, without giving even an overview of the ship's layout. Two pages of this is followed by the deckplans, which are presented as a shaded plan view, showing details of the internal arrangement such as chairs, bunks, fresher fixtures, consoles, and so on, with an inset showing only the rooms, numbered or labelled, with a key to the numbered rooms. Each deck (there are two) is followed by a page with each numbered area carrying a short par-

agraph of description. The spec sheet follows this, and a half-page of adventure hooks rounds out the product content (the remaining four pages are the front and back covers, a page of OGL, and a half-page of “legal mumbo jumbo” and credits).

I would have preferred to see a bit more prefatory information, covering some of the in-game design history, intended mission, and perhaps a discussion of advantages and disadvantages versus the *Suleiman* and *Beowulf*. This should have been followed by the spec sheet, and the deck plans follow that. The two pages of deckplan description should have been combined with the design details, and the whole following the deckplans.

Having said all that, it's time to look at the content itself. There are a few notes that imply cheap construction and cost-cutting applied to the crew areas, such as modular consoles that need extra maintenance to keep in good operation, a minimal crew “ready room”, and no crew galley, with at least part of the putative savings applied toward making the passenger area more comfortable and attractive (a galley with both autochef and manual cooking surfaces, a garden with a sitting area and soaking pool, and a VR simulator). In general, though, it appears that much of the cost-cutting was managed through cheap construction and designing with priority given to cost minimization over crew comfort and crew efficiency and by having some components pull “double duty”, which strikes me as possibly foolish as should those components fail, they will “take down” two systems instead of one, and might not leave the ship with adequate backup.

There is a fundamental design flaw in this ship: The main airlock's outer door seems to be blocked by the port engineering module, leaving no way to get into or out of the ship except via the cargo holds.

Generally, though, the text does a reasonably good job of “painting a picture” of the ship, and in many ways it matches the stereotype of the frontier tramp trader, to the point where even a brand-new, shiny *Venture* might well present an image of cheap shabbiness and “living paycheck to paycheck”.

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The three adventure hooks—and really, there should have been a few more to fill out the page—provide varied opportunities for using a *Venture* as the PCs' ship. All three feel like adventure setups from the early days of *Traveller*, however, and a well-prepared referee can undoubtedly come up with something that would suit his/her particular party better, drawing on thirty-plus years of *Traveller's* evolution without dipping into clichés.

Kurishdam

Ilurians

by Michael Brown

300,000 years ago, the Ancients seeded tribes of primitive humans from Terra across known space. Forty-six known subspecies of humans now exist in the Third Imperium and beyond. All adapted to alien environments over time or were altered by the Ancients to survive in their new homes. The Ilurians are an example of the latter. Modified for life on a world with a cold climate, they are a true product of that environment, but have still managed to take their place among the trillions of Imperial sophonts.

Canonicity

The Ilurians' sole mention in *Traveller* canon is an entry in *Supplement 5: Lightning Class Cruisers* (GDW, 1980). A list of ship names includes several which include the names of several human races with the suffix *High Lightning* attached (ex: *Azhanti High Lightning*, *Vilani High Lightning*, *Geonee High Lightning*, etc.) One of these vessels is named *Ilurian High Lightning*. Therefore, the Ilurians are established in canon as a minor Human race.

Referee's Notes

The world—referred to in the text as Iluria—has been left deliberately vague to allow the referee to determine its best role in his or her campaign and to avoid the possibility of contradicting *Traveller* canon.

The large-scale plans are duplicates, on 24×31.5 sheets, of the two deckplan pages of the folio, with no description. They're clearly meant as a companion to the folio suitable for use with 25/28mm miniatures if printed at natural size.

Overall, better than merely mediocre, as I said at the beginning, and by definition worth what you choose to pay for it. If you tend to use miniatures to illustrate tactical situations, by all means get both the descriptive folio and the large-scale plans (and print out the latter); if you don't, get the folio only. 🌟

The Club Room

Similarly, historical timelines have been left vague, again to prevent conflicts with canon and to allow for customization by the referee.

Prehistory

When the Ancients (Droyne) arrived in the Iluria system, they decided to seed a planet of the system—one with a harsh climate—with human life, after first adapting them to survive there. The Ancients then left the world and the proto-Ilurians behind. Their interest appeared to be only the humans and their new world; there are no known Ancient sites in the system.

Over the subsequent millennia, the Ilurians tamed their unforgiving planet, living strictly as nomadic hunter-gatherers. Around -65,000, some tribes developed a form of agriculture featuring a particularly hardy native plant, and domesticated some of the native animals, but only a minority of Ilurians—perhaps 10%—settled down afterward. Ilurian society remains largely mobile to this day. Such mobility worked to the ancient Ilurians' advantage, as wandering helped settle previously-unexplored areas of the planet and ensured genetic diversity as various tribes met and intermarried.

The use of fire by the Ilurians should be addressed. The Terran transplants had full knowledge and control of it. The ancient Ilurians thus certainly had this knowledge, but their strict physical adaptations (see below) meant that fire wasn't used for

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warmth. Rather, it was only used for cooking and warding off predators. Even so, the nomadic Ilurians abandoned habitual use of fire due to their weakness to heat (see below). Only the 10% that had settled down kept their ability to control fire, despite their biological limitations. These individuals in due course became important and influential members of society for their willingness to risk heatstroke in the performance of their duties. The “fire-keepers” became a class similar to the Vilani *shugilii*.

History

The Ilurians’ lives changed forever when they were contacted by the Vilani, who conducted limited trade with them, but also reinforced social and racial inequality. When the Consolidation Wars came (-5400 to -4045), all pretense was dropped and the Ilurians were treated little better than vassals. The only thing that kept their culture from being completely swept away by the conquering Vilani was the fact that their world was considered inhospitable, even with technological aids, so colonization wasn’t a priority.

Thus it was when the Terrans (who had forced the collapse of the Vilani Imperium) contacted the Ilurians, the tone was much friendlier. Trade flourished, and several mutual agreements between the Ilurians and the Terrans ensured the natives were well-treated. It was during this period that the Ilurians left their planet in substantial numbers for the first time, benefiting from Terran chillsuit technology (see below) and starships.

When the Long Night fell, the Ilurians who had emigrated had a choice: be stuck on unfamiliar worlds far from home amidst a declining empire, or make their way back to Iluria. Thousands opted for the latter, making the journeys in whatever ways they could. Their stories are legend among the Ilurians, especially that of the nephew of a revered leader, whose Odyssean efforts to get home became an epic saga. Meanwhile, the native Ilurians bore wit-

ness as the Terrans all but abandoned them. Along with the Terrans went the trade and the cultural exchanges. The Ilurian leadership felt betrayed; that feeling of betrayal over time manifested as anti-Terran sentiments. Terran concepts and influences were brutally purged from Ilurian society and a fundamentalist movement took hold.

By the time the Scouts contacted the Ilurians in the early days of the Third Imperium, the anti-Terran sentiments that had taken root during the Long Night had become full-blown isolationism. Several elements of Ilurian society wanted nothing to do with the newcomers, but the leaders decided that the need for trade outweighed the desire to be left alone. Agreements were hammered out, with the proviso that the Ilurians had the right to refuse engagement with the Imperium at any time. The Imperium, in turn promised never to turn their backs on the Ilurians, as the Terrans did; and not to treat them as vassals, as the Vilani did. Still, Ilurians suffered social unrest as isolationists—who wouldn’t let their prior treatment by the Vilani or Terrans go—agitated for their leaders to disengage from Imperial society. Violent protests punctuated the demands in several cities before the insurrectionists were pacified by the grant of some minor concessions.

During the Solomani Rim War (996-1002), the Ilurians allied themselves solidly with the Imperium. While isolated malcontents aligned themselves with the Solomani out of contrariness (and soon came to regret their choice), many Ilurians served in Imperial units—especially on frozen worlds where they had the environmental advantage—or in support roles. After Terra was taken, Ilurians maned a garrison on the planet’s Antarctic continent.

The Ilurians today are generally staunchly pro-Imperial. While the Isolationist faction still presses for the complete dissolution of the bonds between Iluria and the Imperium (sometimes violently), the bonds between the two have never been tighter.

The World

Iluria has been left deliberately vague for the reasons stated above in Referee’s Notes. The referee

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should decide its location and physical features. Even the name is subject to change. The only unalterable requirements are its frozen environment and breathable atmosphere.

Physiology

Ilurians are utterly adapted for a frigid environment. In fact, they are so well adapted, they have difficulty operating in temperatures most humans find comfortable.

Ilurians are bilaterally symmetrical, with typical humanoid morphology. Their features are distinct; they have higher, narrower noses and larger jaws than other humans. Their heads are also slightly larger than other humans' although a close examination is required to detect this. These features are also adaptations to the cold.

Their builds are on average short and stocky, with relatively short appendages; this reduces the body's surface area and aids in heat retention. Their bodies except for their faces and the palms of the hands are covered in soft, short fur with hollow follicles which trap a layer of warm air next to the Ilurian's body. The fur is generally light colored, with blond, silver, or white the most common colors. A mutation occasionally creates an Ilurian with darker fur; these individuals are typically ostracized. The Ilurian foot is a more radical departure from human norms. The feet are constructed wide and splayed, with much coarser fur on the soles. This aids in walking across snow and gives some traction on icy surfaces. Ilurians can use footwear such as boots and shoes, but prefer to go barefoot when possible.

Ilurians possess the same senses as other humans, with the same parameters.

The skeletal, immune, excretory, and nervous systems all conform to human norms. They have a somewhat higher muscle-to-body ratio, which allows them to carry the extra weight required by their physical adaptations. Ilurians have tremendous endurance, since one way for them to generate heat is to stay active.

The respiratory system is typically human with two slight differences: narrow nasal passages prevent atmospheric moisture from freezing and protects the lungs and brain from the cold. There are also many more turbinates (folds of tissue) within the nose. These structures are rich in capillaries, which help in warming inhaled air.

Speaking of capillaries, the Ilurian cardiovascular has three times the number found in other humans. The circulatory system is closed. The blood vessels utilize a countercurrent heat exchange mechanism, which allows them to utilize a natural mechanical heat transfer process to retain body heat.

The Ilurian digestive system is adapted to processing protein, especially high amounts of fatty foods, which generate heat as they are broken down in the gut, which in turn results in a higher metabolic rate. The high metabolism also demands a high food intake: an Ilurian must eat at least 5,000 calories a day. While they can ingest vegetable matter, such foodstuffs offer little nutritionally, and are therefore not a dietary priority.

The endocrine system sports a larger thyroid gland, which increases the output of the hormone thyroxin and in turn further increases metabolic rate. As noted above, the integumentary system is highly hirsute. Underneath the fur, the skin is dark, which facilitates heat absorption and offers protection from UV radiation. Skin tones range from dark brown to blue-black.

Ilurians can interbreed with other humans with little trouble; the resulting children tend toward Ilurian physiology, although they are not as furry and do not have the Ilurian parent's full tolerance to cold. Ilurian children have shorter gestational (6-7 months) and maturation times; an Ilurian is physically an adult at 14.

The Ilurians' tolerance for frigid temperatures works against them in other climes. They are so well adapted to the cold that they cannot tolerate temperatures other humans find comfortable. In particular, Ilurians run the risk of heatstroke if they are exposed to temperatures above 15°C for any length of time.

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Temperatures above 10°C cause them discomfort, although some Ilurians have become acclimated to this level of warmth. Ilurians who must operate in temperatures above 15°C must wear chillsuits (see below) to avoid heatstroke, and most who need to operate for extended periods in temperatures above 5°C will choose to wear them.

Ilurians are capable of psionics, although due to the Imperial prejudices against them and failing to find them of any real utility (see below), they usually don't seek to develop such talents.

Psychology and Culture

The ancient Ilurians grouped together as defense against Iluria's hostile environment with bonds tighter than those of their Terran ancestors. This was necessary; to become separated from one's companions on Iluria—especially during one of the planet's frequent snowstorms—meant death. In fact, the Ilurians' closeness over the millennia has transformed into monophobia, or the fear of being alone. To an Ilurian, the larger the group, the better. They are even perfectly at home in crowds.

The basic social unit on Iluria is the Assembly, or large, extended family, which can include hundreds of interrelated individuals. Each Assembly is headed by a small group of elders, with the oldest member of the Assembly designated the Chief Elder, whose word is law. Within the Assemblies, group marriage is practiced, with all participants having equal duties in raising children.

Prehistoric Ilurians quickly found that whatever had no usefulness simply existed to kill them. Therefore, the concept of utility is strong in the Ilurians. They view everything—even acquaintances—in terms of how useful a person or item is. This attitude can be quite brutal; if an item or person has no practical use, then it doesn't merit attention.

Laws on Iluria are few but strict; most are designed to enhance survival. Broken laws on Iluria threaten the survival of the entire Assembly and are

swiftly and harshly punished. Major crimes such as murder are punished by isolation—a fate worse than death to an Ilurian.

The Ilurian language follows their practical nature. Idioms and figures of speech do not appear in the Ilurian vocabulary. Non-native speakers often perceive an Ilurian as being very blunt. The language also has a large nonverbal component, in order for the speaker to be clearly seen and understood from a distance and to help stay active. The nonverbal component carries over even when the Ilurian is speaking another language; thus, Ilurian speakers are also very demonstrative.

Ilurian society is egalitarian. Each member of society is expected to contribute to the whole in a dangerous environment, regardless of their function, from housekeeper to starship pilot. Traditional gender roles don't exist. Exceptions are made for the injured, the disabled, the elderly, and children; but others who cannot or will not contribute are shunned, even banished.

Technology

Iluria is at an average Imperial tech level, although most tech is imported. They can use any equipment designed for humans.

Ilurian PCs

Playing an Ilurian should pose no difficulty for players. Despite their differences from other humans, their psychology and culture is relatable. The only physical accommodations that need be made are their constant dependence on chillsuits.

Physically, Ilurians receive +1 STR and +2 END. Ilurians with SOC A+ have the option of being considered a member of the "fire-keepers" (see above). When playing an Ilurian, players should keep the following points in mind:

- Ilurians can't tolerate high temperatures. An unchillsuited Ilurian takes 1 point of damage per 5° C per 5 minutes the temperature is above 10°C.
- They spend all their time in groups, and in fact have a racial phobia of being alone. The size of the group doesn't matter, but larger is better.

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- Everything is viewed in utilitarian terms. If an Ilurian thinks something (or someone) is useless, they'll have nothing to do with it.
- Ilurians pull their own weight and despise those who won't. Laziness is anathema to an Ilurian.

Ship's Locker

Chillsuit (TL10) Cr12,500. A specialized form of vacc suit fitted with a helmet, advanced coolant sup-

ply, and insulated tubing designed to keep an Illurian's body at an optimum temperature. While chillsuits can be worn by other humans, the amount of cold they generate is dangerous. Chillsuits provide the equivalent of Cloth armor while worn, and come with a rechargeable battery sufficient to drive the coolant pump, and a small tank of coolant. The suit's endurance is 24 hours for the power source and one week for the coolant. Weight 2 kg. ☼

Doing It My Way

Dreamwalkers: Where Psionics Meets the Unconscious

by Jeff Zeitlin

What Are Dreamwalkers?

Psionics, and specifically telepathy and telepathy-related talents, in *Traveller* have generally focussed on targetting characters that are awake and possibly able to oppose the psion's efforts. This, however, effectively puts the target 'off-limits' for at least part of every day, while the target is sleeping—or while the psion is sleeping. The existence of a rare psionic talent, the dreamwalker, represents the exception. Dreamwalkers are able to observe, and sometimes influence or manipulate, others' dreams.

What Is Dreamwalking?

Dreamwalking is a psionic-enabled outgrowth of what has been called "lucid dreaming" or "controlled dreaming", which involves the awareness of the dreamer that s/he is dreaming; with training and practice, the lucid dreamer can learn to control the dream. In dreamwalking, the *dreamer* need not be aware that s/he is dreaming; it is the *psion's* awareness that matters. There are four types of dreamwalkers, Observers, Visitors, Benders, and Weavers. See the next section for information on the various types of dreamwalker. In *Classic Traveller*, dreamwalking is a level 5 activity for Observers and Visitors, or a level 6 activity for Benders and Weavers. In *Mongoose Traveller*, dreamwalking uses the

Read Surface Thoughts check for Observers and Visitors, and the Send Thoughts check for Benders and Weavers, but both checks are at a cost of 4+range, rather than 2+range. Use the standard range limitations for psionics in whichever version of *Traveller* you play, but limit the range for dreamwalking to about 15,000km if it would normally be more; beyond that distance, speed-of-light 'lag' is too high to allow the dreamwalking link to form. The distance is measured by the most direct route, and disregards non-psionic obstacles; the maximum distance between a dreamer and a dreamwalker on Terra would be about 13,000km, if the two were on directly opposite points of the surface.

What Can Dreamwalkers Do?

There are several types of dreamwalkers, divided by their capability to perceive or interact with dreams. The least capable, Observers, can only observe the target's natural dreams, while they're happening. Their viewpoint is that of their target, and they have no sensory input that the target does not dream about—that is, if the dreamer does not "hear" anything in the dream, the Observer will not "hear" anything, either. In all types of dreamwalking, the dreamer's emotional state is part of the information available to the dreamwalker.

The next level of dreamwalker is the Visitor. It has been established that, even though natural laws may not apply to dreams (or apply in different, possibly unique ways), the 'environment' of a dream is

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in fact self-consistent, and generally extends beyond what the dreamer directly perceives. The Visitor may perceive more of the environment than the dreamer does, possibly from a 'third person' viewpoint, and all sensory input consistent with the dream environment is available. The Visitor, however, is not perceived by the dreamer, and may not affect the dream or the dream environment.

Still more capable is the Bender. Benders can interact with the dream and the dreamer, affecting the events within it, though they can only do so in ways consistent with the environment's rules, and that the dreamer will perceive as 'normal' for the dream and its environment. Attempting to make any change from the natural progression of the dream, however, risks jolting the dreamer into wakefulness, which ends the dreamwalk. If the Bender does not attempt to interact directly with the dreamer, but only makes subtle changes to the dream and its environment, it is possible for the dreamwalker to remain hidden from the dreamer. Interacting with the dreamer directly 'creates' a representation of the dreamwalker within the dream, and the dreamer becomes aware of the dreamwalker's 'presence'. Naturally, this poses a high risk of waking the dreamer.

The most capable dreamwalkers are Weavers. Weavers can control the dream environment *in toto*, able to change both the events and the 'rules' of the dream environment. Weavers can remain hidden from the dreamer when making even significant changes to the environment, and there is a lower risk of alterations jolting the dreamer into wakefulness. As with Bending, however, directly interacting with the dreamer makes the dreamer aware of the dreamwalker. Weavers may, under some circumstances, be able to induce and manipulate dreams in a sleeping person, or 'daydreams' in a character that is awake but drowsy, bored, or distracted.

Subjective Time vs. "Real" Time

Time, like physical law, appears to be malleable in dreams – while the length of most dreams is in

the range of 5-45 minutes as measured by REM sleep duration in sleep labs (daydreams may be shorter, down to a few seconds), to the dreamer, they can seem to last hours or even days. Subjective time is the time that a dream *seems* to last; "real" time is the amount of time in-game, as perceived by characters not involved in the dream, that REM sleep lasts. Time-based effects of in-dream activity on the dreamer (e.g., reading and memorizing text) use the *subjective* time; time required for a dreamwalker to manipulate a dream is measured in "real" time.

Creating Dreamwalker Characters

Dreamwalking is closely tied to telepathy, and only telepaths are dreamwalkers. A telepath may be a dreamwalker by referee fiat (and that fiat should extend to the type), or, if random generation is preferred, roll 18+ on 3D6, DM +Psionic Strength. For random generation of dreamwalker type, roll 1D up to three times: for the first roll, 1-4 means that the character is an Observer; 5-6, roll again. On the second roll, 1-4 means the character is a Visitor; 5-6 roll again. On the third roll, 1-4 means the character is a Bender; 5-6 the character is a Weaver. It is technically possible for a dreamwalker character to not be able to exercise it due to insufficient Psionic Strength or experience. Because of the nature of dreams, dreamwalker characters should also have "social" skills such as Psychology, Non-Verbal Communication, Streetwise, Liaison, Interrogation, and so on.

Dreamwalkers in Campaigns

In a campaign in the standard setting where the PCs are Zhodani, dreamwalker characters are automatically drafted into the *Tavrchedl'* (see *Freelance Traveller*, August 2014, for a *Tavrchedl'* career), and are still considered 'on call' after mustering out.

In campaigns where psionics are viewed negatively, such as within the Third Imperium in the standard setting, dreamwalkers will be hated even more viscerally than psions in general, and where a telepath might well need to be proven to be such before being executed, dreamwalkers may well be executed on suspicion only.

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In campaigns where psionics are viewed neutrally or positively, it is still likely that dreamwalkers will be perceived as ‘scary’ (dreams are a product of the subconscious; dreamwalkers can therefore get access to your innermost secrets), and will have controls imposed on them by the authorities.

Obviously, the details are left to the referee, and can and should be adjusted to fit the campaign.

How Dreamwalking Works

In order for a dreamwalker to see a dream, the dreamwalker must have some direct familiarity with the dreamer. The greater the familiarity, the easier the dreamer is to contact, and the greater the range at which contact can be made. Meeting the dreamer and having a few minutes’ conversation (e.g., at a cocktail party) is generally enough to be able to see a person’s dreams if the dreamer and dreamwalker are in the same city. Subjective dreamwalking time spent with a dreamer increases familiarity, and thus the range at which s/he can later be contacted.

Observers, Visitors, and Benders must be in a quiet place, with no distractions, conducive to sleep, in order to make contact. They do not need to be asleep themselves, but if they are, the chance of actually making contact – which can only happen while the dreamer is actually asleep and dreaming – goes up. Roll the task check described in “What is Dreamwalking”, above, to connect to a current dream, DM +2 if the dreamwalker is asleep.

Weavers must be in a quiet place with no distraction, but it need not be conducive to sleep, and being asleep confers no benefit for a Weaver. Roll the task check described in “What is Dreamwalking”, above, to connect to a current dream or daydream. If the Weaver wishes to attempt to induce a dream or daydream (for a sleeper who is not then dreaming, or for someone who is awake but bored, tired, or distracted), the same roll applies, but with an additional DM -3.

If an Observer makes contact with the dreamer’s dream, the referee should narrate a scene/vignette

(not merely a static scene) for the dreamwalker, which may or may not be relevant to information being sought. The scene may last as long as necessary in subjective time, but will only last a few seconds or minutes in “real” time. The dreamwalker may ask questions about the scene; the referee should answer them only to the extent that the dreamer would have perceived – for example, if the dream has the dreamer walking along a corridor with a vague feeling of being followed, and the Observer asks who was following, the referee should reply that the dreamer simply didn’t know; there was just that feeling of being followed. It is possible that the dreamer is having a lucid dream (that is, the dreamer was aware that it is a dream); in such a case, the referee can also tell the dreamwalker whether this is a repeating dream.

A Visitor should be handled like an Observer, but the referee may answer the Visitor’s questions with detail that should logically have been available, even if not in the direct perception of the dreamer. In the example dream above, if the Visitor asks who was following, the referee should reply that the Visitor couldn’t actually see who was following, just a vague shadowy figure, but it is possible that it was any of a list of individuals that might have reason to follow the dreamer (and give at least a partial list).

A Bender or Weaver should be treated as a Visitor if they make no attempt to modify the dream. To modify the dream, the dreamwalker should describe the modification to be made, then roll the task check described in “What is Dreamwalking”, above, but do not impose any additional Psi cost. If the task check fails, the dreamer wakes up immediately.

Modifying Dreams

Benders and Weavers can modify the dreams that they ‘walk’ in. However, there are limits to the modifications:

Benders can only draw on the dreamer’s experience for modifying a dream. If the dreamer doesn’t have an applicable experience, the modification will fail, and the dreamer will awaken. For example, if the dreamer has never been exposed to gravity other

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than the natural gravity of her homeworld, the Bender cannot modify the dream environment into one where the gravity differs. The dreamer's previous dreams count as 'experience' for this purpose, so if the dreamer has had previous 'flying' dreams, the current dream can be modified into a 'flying' dream. Transitions into the modified dream must be 'reasonable' within the context of the dream; if, for example, the rules of the dream don't allow changes of scenery without going past some sort of obvious demarcation, the modification must provide that demarcation in a way that fits within the context of the dream. The dreamer immediately becomes aware of the Bender's 'presence' in the dream, but may not realize that the Bender isn't 'part' of the dream (the Bender should roll the Send Thoughts task (no psi cost); on success, the dreamer doesn't realize that the Bender isn't 'part' of the dream).

Weavers can draw on their own experience as well as the dreamer's, and the imagination of both the dreamer and the Weaver can be drawn on as well. If the Weaver's modifications are consistent with the rules of the dream, and are 'in context' for the dream, the Weaver can remain 'hidden' from the dreamer. 'Out of context' modifications or transitions will reveal the Weaver, as with modifications by a Bender, above, and with similar consequences.

To modify a dream, the dreamwalker should describe the intended modification and roll the Send Thoughts task. The referee should roll the same task, separately. If the dreamwalker's task fails, the dreamer wakes immediately. If the dreamwalker's task succeeds, but the referee's task fails, the dream is modified, but not entirely as the dreamwalker intended, and the dreamwalker is revealed to the dreamer. The referee should describe the changed scene. If both the dreamwalker and referee succeed, the dream is modified as intended, and the referee should narrate the changed scene. A Weaver is not revealed to the dreamer unless he wishes to be; a Bender is always revealed.

What Can Be Learned From Dreamwalking?

It must be remembered that dreams do not necessarily reflect reality, but are influenced by wishful thinking, fantasy, imagination, and so on. Even if a dream is modified into a 'real' situation, information from the dream may not be accurate – for example, if in the dream, the dreamer sees the contents of a safe, those contents may not be the actual contents of the safe, but only what the dreamer *believes* to be the contents, or hopes to be the contents. For each fact that a dreamwalker wishes to ascertain from a dream, the dreamwalker should describe the nature of the fact to be ascertained: "I want to determine the contents of the safe." "I want to determine who the dreamer met." A statement of fact to be ascertained may actually be two or more facts – for example, "I want to determine how much money is in the safe" is actually two facts to be determined: first, is there any money in the safe at all, and second, how much.

Once the statement of fact to be determined is made, both the referee and the dreamwalker should use the Read Surface Thoughts task. The referee should use the sum of all of the character's relevant social skill(s) as a +DM on his roll; the character should use only the relevant social skill with the highest skill level; the referee should use the number of facts over one as a -DM on the roll. If both rolls succeed, the referee should report the fact(s) accurately, and indicate that the character is confident that it is correct. If the character's roll succeeds, but the referee's roll fails, the fact should be reported with partial accuracy (e.g., if the character wished to ascertain whether the meeting would occur in Vista Park, the referee would report that the meeting will take place 'in a park in the city'), and indicate that the character is confident that the information is correct. If the character's roll fails, but the referee's roll succeeds, the referee should report the fact accurately, but indicate that the character has little or no confidence in the accuracy of the information, and if both fail, the referee should report the fact with partial or no accuracy, and indicate that the character has little or no confidence in the answer.

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Dreamwalking by Benders and Weavers can serve other purposes than information gathering. Psionics-based therapy is part of the *Tavrchedl'* stock in trade among the Zhodani; dreamwalking offers the potential to reduce the treatment time in some cases, though the limited number of available Benders or Weavers generally means that this use would be limited principally to important people whose need is considered critical. It could also be used in "re-education". If your campaign has rules for handling psionic therapy or re-education, it is recommended that hours required be 'swappable' at one subjective hour with a dreamwalker therapist being the equivalent of one hour 'real' time with an equally-skilled non-dreamwalker therapist – but limit the number of subjective hours per night (sleep period, six-to-ten 'real' hours) that can be experienced in therapy/re-education dreams to no more than the smaller of the actual number of 'real' hours spent in sleep or half of the dreaming character's END.

The flexibility of subjective time in dreams also offers an opportunity for 'ordinary' education: a Bender or Weaver with knowledge of a desired skill, plus Instruction skill, can reduce the amount of 'real' time required to master a non-physical skill (e.g., Navigation, Computer, etc.). It can possibly also be used to teach the theory part of physical skills (e.g., 'rules of the road' for Vehicle skills), but much of physical skill involves what is called 'muscle memory', which cannot be instilled by dreaming. As with therapy and re-education above, limit the number of 'effective' subjective hours of dreamwalker-assisted learning to the lower of the actual number of 'real' hours spent sleeping or half the dreaming character's END. It will take the same number of total hours – subjective plus 'real' – to gain the skill or level as in the basic rules, but also limit the maximum skill level that can be attained if the entire 'course' is 'taught' through dreamwalking to one half (rounding down) of the lower of the dreamwalker's skill in the topic being taught or the

dreamwalker's Instruction skill (that is, if the dreamwalker has Computer-4 and Instruction-3, the maximum level of Computer that can be taught totally through dreamwalking is Computer-1 [half of Instruction-3 (1.5), rounded down]). An attempt to teach the physical aspects of a physical skill within a dream will succeed with the same time caveats, but will not carry over into the 'real' world the way pure knowledge will – though the theoretical knowledge of how to perform the action will carry over (e.g., a dreamer 'taught' to ride a bicycle in a dream will know how to 'push off' to start moving, but will not gain the agility or 'muscle memory' to actually keep his/her balance while riding until s/he actually rides a bike in the 'real' world for a while).

Even if the dreamer isn't a 'lucid dreamer', a Bender or Weaver can engage the dreamer's 'dream self' in conversation or debate, and can convince the dreamer of a proposition or to take specific actions in the 'real world'. In addition to any relevant dreamwalking tasks, roll the normal interpersonal tasks as though the attempt to convince were happening in the 'real world'. Note that the dreamer may remember the dream (see the task below). If the dreamer does *not* remember the dream, s/he will still be convinced (if the attempt to convince succeeded); s/he just won't necessarily know why s/he 'changed his/her mind'.

Psionics and Other Mental Activities Within Dreams

It's not unlikely that a Bender's or Weaver's player-character will see (or think s/he sees) possibilities for the use of psionics within a dream, perhaps on the theory that in the dream, the dreamwalker is at 'closer' range than in the 'real' world, and thus able to use a psionic skill that s/he couldn't use because of range limitations. *No!* The dreamwalker is not actually at closer range, and range limitations still apply.

Non-psionic activities, however, are a different question. It is distinctly possible that if the dreamer is naturally susceptible to hypnosis in the 'real'

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world s/he can be hypnotized in dreams by a Bender or Weaver. The dreamwalker must have the relevant skills (e.g., Psychology), and roll the relevant tasks. Post-hypnotic suggestions or 'trigger words' can be implanted, and will be effective in the 'real' world. The referee should be careful to limit the opportunity for abuse, but it *can* be used to create a 'Manchurian Candidate' or a sleeper agent like in the movie *Telefon*.

Task Summary

To initiate a dreamwalk: Use the Read Surface Thoughts task, imposing the full psionic strength point cost for the task and range. If the dreamwalker is asleep (lucid dreaming) at the time of contact, DM +2. If the dreamwalker is a Weaver, and is attempting to induce the dreamer to dream or daydream, impose an additional (cumulative) DM -3. This is the only task that applies to Observers and Visitors.

To modify a dream after initiating a dreamwalk: This task applies only to Benders and Weavers. Use the Send Thoughts task, with no psionic strength point cost. The referee also rolls this task. Neither the dreamwalker nor the referee apply any DMs. If the dreamwalker's task fails, the dreamer wakes. If the dreamwalker succeeds, but the referee fails, the dream is modified, but not exactly as planned, and the dreamwalker is revealed to the dreamer. If both the dreamwalker and the referee succeed, the dream is modified as planned, and a Bender is revealed to the dreamer. Weavers wishing to remain hidden should roll the following task.

To remain unnoticed by the dreamer after modifying a dream: Applies to Weavers only. Use the Send Thoughts task, with no psionic strength point cost. Must be rolled after every modification of the dream, until the Weaver is revealed to the dreamer, after which the Weaver can no longer be hidden.

To be taken as 'part' of a dream after modifying it and being revealed: Applies to Benders and Weavers. Use the Send Thoughts task, with no

psionic strength point cost. Must be rolled every five subjective minutes by Benders; must be rolled after each modification by Weavers, but only if the Weaver has previously been revealed.

To determine a fact from a dream: Both the referee and the dreamwalker should use the Read Surface Thoughts task. The referee should use the sum of all of the character's relevant social skill(s) as a +DM on his roll; the character should use only the relevant social skill with the highest skill level; the referee should use the number of facts over one as a -DM on the roll. If both rolls succeed, the referee should report the fact accurately, and indicate that the character is confident that it is correct. If the character's roll succeeds, but the referee's roll fails, the fact should be reported with partial accuracy, and indicate that the character is confident that the information is correct. If the character's roll fails, but the referee's roll succeeds, the referee should report the fact accurately, but indicate that the character has little or no confidence in the accuracy of the information; if both fail, the referee should report the fact with partial or no accuracy, and indicate that the character has little or no confidence in the answer.

To remember a dream modified by a Bender or Weaver: This task is rolled by the referee and the dreamer, not the dreamwalker. Formidable, <no skill>, INT, Instant. If both the referee and the dreamer succeed, the dreamer recalls the dream with the same amount of detail as if the dream had actually happened in the real world. If the dreamer succeeds, but the referee fails, the dreamer remembers the general sense of the dream and perhaps one or two short 'vignettes' from it, but not the entire dream. If the dreamer fails, but the referee succeeds, the dreamer has an uncomfortable feeling that s/he dreamed about *something*, but can't recall even the general sense. If both fail, the dreamer does not recall the dream at all. In any case, any therapeutic effects, education, or post-hypnotics carry over with no change. ☼

21 Plots Misbehave

Reviewed by "kafka"

21 Plots Misbehave. John Watts.

Gypsy Knights Games <http://www.gypsyknightsgames.com>

37pp., softcover or PDF

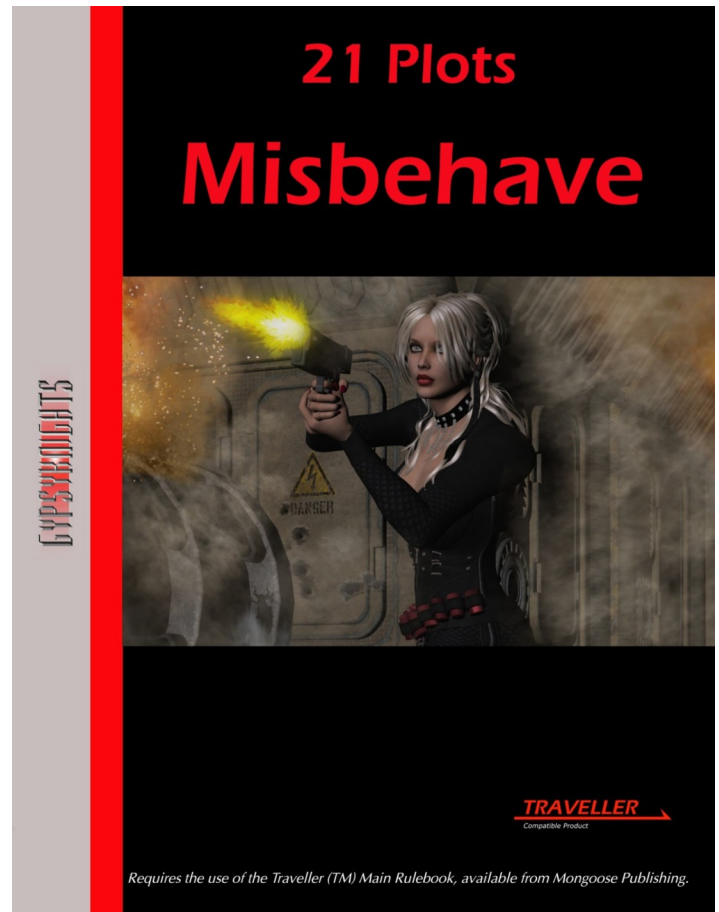
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This review originally appeared on *rpg.net* in January of 2014 and is reprinted here with permission.

21 Plots Misbehave is an interesting addition to the *Traveller* universe started by Gypsy Knights Games in that it begins to branch out and reference back to some of the more nefarious aspects of *Traveller* while staying within the open license. This book highlights the high times of lowlifes that marked much of the early years of *Traveller* – where working class stiffs are often called upon to do something not quite legal (by breaking unjust laws) yet at the same time not immoral. Could this then be called 21 Shades of Misbehavior? 'Fraid not... It retains a gritty character of many a *Traveller* adventure but it was without any of the darker corners that populate at least My *Traveller* Universe (and I do not think that I am alone in having a Mos Eisley bar in every port – the secret is to know what brings your characters there – to feed an addition to Deathsticks or make contact with the femme fatale Zhodani patron who will ask them courier something past the border). So, I have to conclude that this is a valid first step at pushing the OGL into greyer areas.

The adventure seeds are solid enough and the minor acts of "rebellion" remind me of *Dukes of Hazard* or *MacGyver* episodes rather a more sophisticated take like in *Heist* or some of the European, especially French or British crime dramas. Then again, that would skirt the edges of the license and Gypsy Knights Games has a very fine line to tread there. So, these adventures fit very nicely into any campaign either as one-shots or just filler between the action sequences of a campaign.

The organization of the book is the same as the other *21 Plots* books with a basic description then a D6 resolution thus allowing a referee to find 126



possible adventure outcomes by changing around the particulars. It is well integrated into the Clement Sector sourcebook but can be adopted into the OTU or other SFRPG without any difficulty. Absolutely, brilliant, and (thanks for listening, Gypsy Knights Games) there is an integrated index to all *21 Plots* adventures making this a must-have item – if you have purchased all the others. It is also a must-have because of the groundbreaking path it takes for newbies. For many can come to *Traveller* and not know its heritage also lies in 1970s SF, with a dash of the Golden Age of SF, as well as, the Age of Sail/Diesel and shows like *Firefly* more than *Star Wars* or *Star Trek*. *Traveller* is beginning to show its age again. Although, the 2300AD line has revitalized *Traveller* as a game of exploration, the grittier side has yet to find true expression in Mongoose or new Far Future Products (i.e. T5). It is so far good, in the sense the *zeitgeist* is running the other direction – as SF is rather puritanical compared to the 1970s which combined blasters with a strong moral imperative with

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good guys doing bad things in order to achieve a greater good. There is no art except for the cover rendered using Poser, as a result can look intimidating – but art is expensive – hopefully, once a compilation of *21 Plots* gets put together one can get some realistic gritty art (even with poser skins over live models). The writing is clear and concise.

So if you liked the *21 Plots* series, you are bound to like this one as well, especially if you like the Alternative *Traveller* Universe of the Clement Sector.

Active Measures

Muckraker

by Michael Brown

Synopsis: A mudslinging independent journalist creates headaches for the heroes.

Muckraker is intended for no more than 5 Classic *Traveller* characters of varied career backgrounds. The team need not have been working together prior to the adventure. A starship is required.

Players' Information

The team is in port taking on cargo and passengers. One of those requesting passage, a modestly-dressed man with a somewhat cocky air, offers to pay high passage rates for two jumps in any direction. Observant heroes see that he seems to be pleased with himself for some reason, but if asked about it, he simply asserts that he's happy that he's able to finally take a trip he'd been saving up for.

Referee's Information

Arslin Millei is a muckraking, semi-famous journalist of the lowest order. His mission in life is to find dirt on someone and exploit it for ratings and buzz. He normally targets celebrities and nobles. For whatever reason (a botched mission, negative rumors), he has now set his sights on the PCs.

He takes passage aboard their vessel in disguise under an assumed name, but some of the heroes might recognize him regardless:

There are enough tropes in this universe that it could migrate to *2300AD*; if you believe certain SF races are representative of different nations, you could port these adventure hooks without any problems. Thanks to Gypsy Knights Games, *Traveller* has just got grittier again. Here's hoping that we can push the envelope further into the shadows and recreate *Traveller* fandom that produced such great *noirish* fanzines such as *Signal GK* or even official products like *Hard Times*. Surely, we can go dark and still preserve the essence of what *Traveller* is all about... 🌟

Getting Off the Ground

To see through Millei's disguise:

FORMIDABLE; INT, Recon

The disguise was apparently applied by a pro. If anyone calls Millei out, he simply replies with "Yeah, I get that a lot. People say I look just like him." He'll tell them that's the reason for the disguise; he's tired of people coming up to him and asking for autographs or holos. This is, of course, a lie.

Once the vessel is underway and in jumpspace, Millei makes his move. Despite his cockiness, he's a topnotch investigator. Through subtle interrogations of the crew and as much computer hacking and physical snooping as he can get away with, he tries to find as much as he can about the heroes, with an eye toward using it against them later. Of course, the group may have nothing he can use, but he is also a master at twisting facts to suit the narrative he wants to convey.

Throw 1D for the results of his efforts:

1. Millei tries his best, but finds nothing scandalous. Nevertheless, he twists whatever he finds into something salacious on an 8+. If this news gets out onworld, it will cause one or more of the PCs minor embarrassment only. The PCs catch him snooping on a 6+.
2. As 1, except he twists whatever he finds on 6+ and the crew catches him on a 9+.

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Active Measures

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3. Millei uncovers a minor secret of one of the crew members, assuming there are any secrets to be found. If the news gets out onworld, the crew member harboring the secret will suffer a major blow to their reputation and a reaction from others at a -2,. The crew catches him snooping on 7+
4. As 3, but the crew catches him on 10+, and he unlocks the entire crew's skeleton closets.
5. Millei uncovers any illegal activity the group may have been involved in, no matter how minor. He tries to blackmail them on a 10+. If they refuse, and the news gets out onworld, the group will be subject to sanctions ranging from a stiff fine to arrest, depending on what they did. The team catches him snooping on 12 exactly.
6. As 5, except Millei keeps quiet and makes two files: one for his report, the other for the authorities. He turns the authorities' copy over as soon as he hits port. The crew will not catch him snooping and will be subject to arrest based on what was in the report Millei turned in. They may not even find out what he was up to until they see an embarrassing report in the media and learn they are now wanted! 🌐

In A Store Near You

InterAct Music System

by Chris Seamans

This article was originally posted to the pre-magazine Freelance Traveller website in 1997.

The InterAct System is based on a design initially created by Makhidkarun, but released throughout the Imperium as a standard. Many entertainment systems are fleshed out with this option, and Makhidkarun's software and hardware is of the absolute highest quality. Systems of varying quality can be purchased from other corporations, but true fans of "kaadmukim" (a Vilani word roughly translated as "interactive music") swear by Makhidkarun's extremely high quality InterAct units.

Kaadmukim becomes possible around the time that houses, businesses and spacecraft become "wired", with either one central computer, or several dedicated control systems. In a wired household, room temperatures are adjusted to a (usually preset) comfortable level when the room is inhabited, lights go on when someone is about to enter a darkened room, and go off a few moments after a room is left unoccupied. Many household items are wired, so that they can be found easily should they become lost or misplaced. Doors can be automatically closed or locked, depending on the pre-sets, outside lights

can be turned on when it is dark, an outside pool can be heated from the living room couch, if such a thing is desired. Basically, the house is 'smart' and does a number of minor chores as needed, and can be interfaced with any number of specially made devices and robots. The above examples only scratch the surface of what is possible in 'smart' or 'wired' homes.

The InterAct Music System takes this concept to another level. Speakers are placed around the house for optimum listening enjoyment in much the same way as they are placed for more traditional entertainment systems, and all of the signals that go to and from the house's computer are turned into 'music'. Pre-recorded sound and music tracks are recorded onto a kaadmukim cube, and are played according to the digital signals that pump through the household. Depending on the kaadmukim band's (or performer's) skill, the effects can be amazing. The cube is never heard the same way twice. The tracks are played in fashion that is apparently random, although is based on events that the house computer is processing at the time. As wired items are moved through the house, seats are sat in, and appliances are used, the music will shift and change according to the original band or performer's desires. Kaadmukim writing is an intense discipline in

In A Store Near You

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and of itself, because the performer has to surrender much of the control and order to the 'chaotic' demeanor of a modern household. The basic effect of many kaadmukim cubes is that of a movie soundtrack, or piece of classical music. Themes are repeated in variations, all aspects of the music are changed by the literally countless tasks the house computer is performing, while underlying elements stay the same. Some fans of the medium prefer performers who forego any attempt of masking the randomness with order, and enjoy the chaotic sound of what has come to be known as "gushiimukim" (roughly translated as "music from chaos"), the random patterns of a household are transformed into sounds and snippets that are, in and of themselves, random. The effect can be very fascinating, but can also be very disconcerting and sometimes frightening as well.

Kaadmukim of all forms is a very popular medium, especially at parties and get togethers. An "asha kaadmukim" (roughly translated as DJ, or disc jockey in crude 20th century english) will usually have a special deck with the ability to hold more than one kaadmukim cube at a time and with the ability to mix them and change them as desired. A highly skilled "asha kaadmukim" will be able to "smack the cubes" (manipulate a deck) with an ability and efficiency that can be downright awe-inspiring. A popular dance scene, with a huge number of offshoots and mutations, has sprung up. One such offshoot, similar to 20th century rap, has performers improvising rhymes over top of the ever changing music. No matter what, the way that a master "asha kaadmukim" can move a crowd should not be underestimated.

In the first century of the Third Imperium trade normalized to the point that a high-tech standard of living was possible more or less everywhere. Kaadmukim systems became available nearly everywhere. As now, these units were very popular in dance clubs, as they created a unique experience for

a crowd, and experience of oneness that cannot be recreated any other way. It was common for an asha kaadmukim to pick cubes in which the beat would speed up based on the heat of the room or venue that the system was installed in. This is where, at least according to popular legend, the term 'heat up the beat' came from. This practice, however, turned out to be somewhat dangerous to the dancers, and heat exhaustion became very common. Some world, subsector, and sector governments made this practice illegal. In most areas of the Imperium, 'heat up the beat' has a meaning similar to 'get down', 'rock on', or 'let's boogie!'. However, in some areas it has a shadier connotation: to 'heat up the beat' suggests undertaking a deal or action that is either somehow illegal or not completely on the up-and-up.

Tech Notes: InterAct/Kaadmukim systems vary in quality and can be purchased for between Cr500 and Cr5000. This is for the system alone, and supporting hardware, such as speakers, must be purchased seperately. Tech levels for availability also vary, and due to standardized 'smart home' hardware can be manufactured on worlds with a technology level of 9 or better. Systems for asha kaadmukim use will be on the upper end of the scale, generally sold for for Cr3000 to Cr6000. They are large and bulky, and are made to be installed in various locations. They are in no way comfortably portable, although asha kaadmukim units can be easily transported. A number of attempts to create lower-quality portable units have been tried, relying on digital information gathered from a world's commnet and through sensor equipment built into the system. Most such attempts have failed for the marketers, as it seems enough data for a truly engrossing experience can't be gathered easily. These devices are available and supported in some areas of the Imperium though. InterAct datacubes can be purchased for between Cr20 and Cr100 new, or Cr5 and Cr30 used. The cubes are extremely durable, and due to the great length of time these units have been in existence, there is a vast collectors' market. 🌀

Gas Giants

by Ken Pick

This article was originally posted to the pre-magazine Freelance Traveller website in 2003.

Gas Giant Interior Details by Bob Atmur

Original "Platform 44" scenario ©1982 Dave Bryant

Links are to Wayback Machine captures of the Extrasolar Visions website [<http://tinyurl.com/xsvisions>] by John Whatmough.

"The Solar System consists of Jupiter and some insignificant debris." - Unknown

"No, it consists of four planets and some dust specks." - Bob Atmur

Gas Giant Planets. Jovians. "Gargantuan Farts Floating in Space." "Big Gs" on the one-line UPP. Free fuel for the skimming, if you're chintzy and/or like to live dangerously.

But there's more...

Definitions

A Gas Giant, as the name implies, is a giant planet primarily made of gases, with little or no solid planet beneath all that atmosphere.

Astronomically, planets are sized by their mass, not their diameter (as in *Traveller* size). Units of measure are T-mass (M_E , one Earth mass) and J-mass (M_J , one Jupiter mass, 318 M_E). Since only the smallest of Gas Giants have anything approaching a solid surface, diameter is measured from the 1000-millibar point (pressure equivalent to Earth sea level) in the atmosphere.

Small Gas Giants are less than 50 M_E (about 1/6 M_J); as their size increases, the density (and "surface" gravity) decreases - hydrogen is very light. They are usually measured in T-masses.

Large Gas Giants are over 50 M_E ; between 40 and 50 M_E , the increased mass starts to compress the planet, and the density then increases with size. As the size increases, so does the internal heat, radiation emissions, and magnetosphere. They are usually measured in J-masses.

Brown Dwarves or "substars" are over 13 M_J (about 4000 M_E), and form the transition between

planet and star. At this size, the core temperature and pressure are high enough to start deuterium and tritium fusion but not the simple hydrogen fusion needed for a true star. These miniature "failed stars" glow infrared- to red-hot from internal heat, and have the radiation output to match. The majority of Brown Dwarves are found as solo mini-stars, close binary systems with another Brown Dwarf, or as distant binary companions to M-class, V- or VI-size red dwarf stars. However, they do crop up occasionally in other, more "normal" planetary systems.

Formation

Like all planets, Gas Giants form from a protostar's protoplanetary disk. Unlike smaller rockballs, they form from the lightest gases in the disk, not the heavier dust and particles. Because of this, Gas Giants must form quickly, before the protostar ignites and its stellar wind blows the remaining light gases out of the system.

This happens in one of two ways:

- *Accretion*: When a planet reaches about 3.5 M_E (*Traveller* Size 12+), surface gravity becomes high enough that lighter gases (especially helium) are retained. This "helium capture" increases mass and gravity to the point where hydrogen is captured. Once hydrogen capture begins, the protoplanet keeps growing until the protostar ignites and blows away the hydrogen. Small Gas Giants normally form by accretion.
- *Density-wave Collapse*: In a protoplanetary disk, both random anomalies and gravitational tides from nearby protostars can cause sections of the disk to compress into standing waves of higher density. In a sense, all planets and asteroids begin as high-density anomalies in the disk, but the largest of these can collapse and capture hydrogen quickly enough to form a Gas Giant much faster than simple accretion. Large Gas Giants normally form this way.
- Brown Dwarves also form as density anomalies, but more like a star, as the center of their own protoplanetary disc (possibly with their own

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planets). However, as with all things in nature, there is some overlap; some Large GGs can form by accretion, some Small GGs can form directly from density anomalies, and Brown Dwarves can form like a giant planet or a mini-star.

Reality Intrudes on *Scouts*

Book 6: Scouts is the detailed star system generator for *Classic Traveller*; later revisions of the game simply revised the system generator (and returned to it in *Traveller*²⁰). In stock *Scouts*, Gas Giants are rolled for and placed first, asteroid belts second, and other “rockball” planets last. The rules on this state:

Gas giants must be placed in available orbits in the habitable zone and in the outer system. While gas giants can be in inner orbits, they should not be placed starward of the habitable zone unless there are no other orbits available.

Place planetoid belts in available orbits. If possible, planetoid belts should be placed in the next orbit inward from gas giants.

So far, so good. Based on Sol system, with its four outer-system Gas Giants separated by an asteroid belt from the four inner rockballs. (Very symmetrical, if you count Pluto-Charon as part of the Kuiper Belt and not a true planet...)

However, at early Tech Level 9, astronomers were able to discover planets of other suns by Doppler Spectroscopy, measuring their gravitational influence on the star’s spectrum as the planet orbits. And what they found at first was clearly impossible under *Scouts*: “Epistellar Jovians” or “Red-hot Jupiters”, Large Gas Giants of up to many J-masses in “torch orbits” incredibly close to their suns. Since then, Large Gas Giants (the only planets detectable from interstellar distances) have been found in every orbit imaginable.

The following rule enhancements make *Scouts* compatible with these later discoveries.

Placement: Gas Giants may be in any orbit whatsoever, including “torch orbits” and under some special cases, “Unavailable orbits”.

- *Torch Orbits* are defined as the innermost half of the Inner Zone orbits, rounded down. Example: According to the *Scouts* Table of Zones, a G0V star has three Inner Zone orbits (Orbits 0-2); Orbit 0 is the torch orbit. An F5V star has four Inner Zone orbits (Orbits 0-3); Orbits 0 and 1 are the torch orbits.
- *Unavailable Orbits* are defined in *Scouts* as “orbits are subject to intense heat from the star and have temperatures of greater than 2000 degrees. A planet in such an orbit would be converted to vapor and dissipated. Such orbits cannot be occupied by planets.” However, a Gas Giant is already made of vapor; the heat can and will boil off the atmosphere until nothing remains, but against the gravity of a Large or Very Large GG, dissipation will take some time. And the stars most likely to have unavailable orbits—Class B main-sequence stars and most giants—are the shortest-lived, with the least amount of time available to boil off these planets. Class Bs are short-lived supernovae-in-waiting and orange/red giants are dying stars which were originally much smaller.

Size: *Scouts* divides Gas Giants into Large and Small GGs, but does not break them down any further. However, size does matter in appearance, number of moons, and other game effects described later.

- *Small GGs*: Roll 1D on Table 1 for the actual size.
- *Large GGs*: Roll 1D on Table 2A for the actual size. If a 6 is rolled, go to Table 2B and roll again. Continue until you roll other than a 6 or end up on Table 3.
- If the rolls reach Table 2C (Very Large Gas Giant), the orbit inward of the VLGG will always be asteroids or empty—the VLGG’s gravity will scour that orbit clean. In addition, if there is more than one Gas Giant in the system, subtract one of the other Gas Giants, again favoring the next orbit inward; the VLGG has absorbed the hydrogen that would have formed the other Gas Giant.

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- If the rolls reach Table 2D, clear out the orbit outward of the VLGG as well as inward. The orbit inward of the VLGG will be empty; the orbit outward may be asteroids or empty. If a second other Gas Giant occupied either the two orbits inward or the first orbit outward, it is also subtracted from the system.
- If the rolls reach Table 3 (Brown Dwarf), clear out the two orbits inward of the Brown Dwarf and the first orbit outward. These will be empty orbits. Subtract two or three other Gas Giants from the system.

Satellites: *Scouts* describes Small Gas Giants as having 2D-4 satellites (moons) and Large Gas Giants as having 2D moons.

- Very Large Gas Giants (Tables 2C and 2D) in the Outer Zone will have 3D moons, and Brown Dwarves (Table 3) 4D.
- All Inner Zone Gas Giants will have a maximum of 1D moons; all satellites of Inner Zone worlds use only the Close orbits table to determine orbital distance. At this range, the sun's gravity will strip off anything in Far or Extreme orbits.
- Gas Giants in torch orbits will have 1D-3 moons for the same reason.
- Any Gas Giant in an Unavailable orbit will have no moons whatsoever.
- If two moons roll the same orbit, they can optionally share the orbit as a "double moon", i.e., the two moons orbit each other as both orbit the primary. These "moons with moons" are rare, but do illustrate the ambiguity between planet and star of a Very Large Gas Giant or Brown Dwarf.

Appearance

The typical image of a Gas Giant is Jupiter in Sol System, with pastel cloud bands broken by one or more "Great Red Spot" cyclonic superstorms. In reality, Gas Giants' appearance varies greatly depending on the distance from their sun, and secondarily from their mass.

(Due to a physics phenomenon called "Rayleigh Scattering", almost all atmospheric gases are a very faint blue color. This is the reason the sky is blue on a world with an atmosphere—dark indigo with a Class M sun, sea blue for a Class K, and "sky blue" for Class G and above. The sky is darkest at the zenith because the line-of-sight passes through less atmosphere than near the horizon.)

Orbit/Temperature Effects on Appearance

- *Unavailable Orbit:* [<http://tinyurl.com/xsvisions-8>] The planet will glow white-hot on the sunward side and red-hot on the dark side; the atmosphere being boiled off forms a long comet tail spiraling outward from the sun.
- *Torch Orbit:* The sunward side [<http://tinyurl.com/xsvisions-46>] of the planet will glow red-hot, with a brighter spot directly facing the sun; the dark side [<http://tinyurl.com/xsvisions-45>] will be cooler and would be the default blue if it wasn't in shadow, with a small "cap" of white clouds at the antipodes. The atmosphere is constantly being heated on the sunward side and blowing in supersonic winds to the dark side, where it cools and sinks back into the interior. Transit data shows these "Epistellar Jovians" to have about twice the diameter they should (shown in the tables); this is probably due to thermal expansion.
- *Inner Zone Orbit:* The planet will be a featureless medium-light blue [<http://tinyurl.com/xsvisions-88>]; the atmosphere is too hot for any clouds to form. The atmosphere may be very violent, but without clouds its motion is invisible. Diameter will be about 1½ times the base diameter from the tables due to thermal expansion.
- *Habitable Zone Orbit:* Here clouds begin to appear [<http://tinyurl.com/xsvisions-47>], in the form of white clouds starting at and concentrated at the poles, where it is cooler. A Gas Giant in the "Goldilocks Orbit" (not too hot, not too cold, just right) in the middle of the HZ will have about 50/50 white clouds and blue atmosphere. Due to

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Gas Giants' rapid spin, clouds will normally sweep into bands by latitude—the familiar cloud bands. Alternatively, suntime could slow the rotation to where the clouds swirl across the face of the planet instead of forming bands; this is most likely for a smaller Gas Giant in an HZ orbit of a smaller K- or M-class star.

- *Outer Zone Orbits:* As the planet orbits farther and farther out, its appearance becomes more familiar; colors change throughout due to temperature effects on various gases and impurities in the atmosphere. First, near the inner edge of the OZ, near-total cloud cover; the planet appears white with some blue trim bands along the equator. Then, a little farther out, chemicals condensing out in the cold give the cloud bands pastel colors [<http://tinyurl.com/xsvisions-27>]. Still farther out, other chemical reactions take over and the planet appears more yellowish [<http://tinyurl.com/xsvisions-23>]. Finally, cryogenic conditions return the outermost Gas Giants to a blue or blue-green hue with only faint banding [<http://tinyurl.com/xsvisions-35>] in the faint light of a distant sun.

Size Effects on Appearance

- The larger the Gas Giant, the greater its internal heat. This changes the appearance as if the planet was in a slightly closer orbit and warmer, though not so warm as if in a torch orbit. The largest of GGs (Tables 2C and 2D) might even be the featureless blue of an Inner Zone GG, radiating in the infrared.
- Brown Dwarves [<http://tinyurl.com/xsvisions-11>] (Table 3) generate even more internal heat, to the point they glow a dull red. The oldest ones are cool enough for cloud bands and storm spots to form in the upper atmosphere; this results in a “backlit” effect, with dark cloud bands backlit with glowing maroon. Younger BDs are hotter, and glow a uniform red like miniature red dwarf stars.

- The larger the Gas Giant, the more violent its atmosphere from internal convection. Larger GGs (Tables 2B and up) will have more “Great Red Spot” cyclonic storms caused by upwellings in the atmosphere; Very Large GGs (Tables 2C and 2D) will probably have so many of these upwellings that they appear “speckled” instead of banded, with constant eruptions streaming banner clouds halfway around the planet for a “banded by speckles” look. Note: Each of these “spots” or “speckles” is actually the top of a planet-sized tornado funnel extending tens of thousands of km deep into the GG.
- Conversely, the smaller the Gas Giant, the less violent its atmosphere. Small GGs in Outer Zone orbits will have faint or no banding and few or no cyclonic storms/upwellings—almost completely featureless spheres of “calm air”.
- The larger the Gas Giant, the faster its rotation and the shorter its “day”. The largest and fastest-rotating GGs can appear visibly flattened instead of spherical.

There is a more detailed essay on Gas Giants' appearance under varying conditions of temperature and size at <http://tinyurl.com/xsvisions-specs>.

Effects

Epistellars and Flare Stars

A Large Gas Giant in a torch orbit can have devastating effects on the entire system. Gas Giants have magnetic fields to match their size, and a torch orbit is close enough so this magnetic field interferes with that of the sun. As the planet orbits low and fast, its magnetic field sets up eddy currents in the star, drawing plasma from the star's interior to its surface.

When this effect has built up enough—usually around once a century—the star mega-flares, blasting off plasma down the magnetic lines of force. For a short time, the star becomes a miniature nova, increasing its brightness many-fold; the surge of radiation and heat can boil off planetary oceans and melt planetary surfaces smooth. (Larry Niven's short sto-

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ry “Inconstant Moon” describes the effects of such a mega-flare.)

Naturally, such “flare stars” do not have habitable worlds. The only long-term colonies in such systems would have to be dug-in underground to survive the mega-flares.

Rings

Rings are composed of rock and ice particles in close orbit [<http://tinyurl.com/xsvisions-6>], and vary considerably. *Scouts* allows for multiple rings in multiple orbital positions, but does not otherwise describe their appearance.

- Most planetary rings are pretty dim; brilliant rings like Saturn’s are found only in the outer system, where ring particles are mostly highly reflective ice.
- Assume a ring covering one orbital position is going to be a narrow band; wide rings like Saturn’s actually cover more than one ring orbit, and would roll up in *Scouts* as more than one ring.
- If a wide-ringed planet has no moons, the ring will probably be continuous, without gaps.
- If a wide-ringed planet has moons, harmonic tidal effects will open gaps in the ring at points where the orbital period is an even fraction of that of the moon. This produces the Cassini Division between Saturn’s A and B rings (an exact harmonic with Mimas, the innermost moon); lesser harmonics with the other moons give the rings their detailed appearance of gossamer strands of ringlets laid side-by-side. Similar mechanisms have split Uranus’ ring into five narrow string-like rings.
- Another alternative for a thin ring are “ring arcs”; incomplete crescents of rings such as were found around Neptune.

Almost everyone who has never flown a starship thinks of evading pursuit by cutting through a planetary ring. This is possible, but collisions with ring

particles will chew up a ship—hopefully not as much as your pursuer. Treat these collisions as equivalent to missile hits; roll 1D for the number of collisions when cutting the ring.

Satellites (Moons)

The moons of a Gas Giant are subject to some unique effects, all having to do with the Gas Giant’s gravity and magnetosphere.

- Gas Giant moons are subject to extreme tidal stresses; they will almost always be in “tidal-lock” rotation, with one side always facing their primary; their day is equal to their orbital period. If there are other moons (especially large ones), the resulting tides will pull on the moon, causing a lot of seismic (moonquake) activity.
- Inner large moons will be under so much tidal stress, they will be volcanically active as well as seismically. The innermost moons will be like Jupiter’s moon Io, with constant multiple mega-volcanoes constantly reshaping the surface. The lava from these constant eruptions varies with the orbital zone; in the Inner and Habitable Zones, the lava is molten rock; in the Outer Zone, volcanoes may instead erupt either liquid sulfur or water (Inner Outer Zone) or liquid methane and nitrogen (Outer Outer Zone), all of which are normally solid minerals at the ambient temperature.
- A little farther out, a large moon will resemble Jupiter’s moon Europa, whose surface of ice cracks open as the tides pull liquid water up from the depths.
- Gas Giants have magnetospheres to match their size. Inner moons orbiting through the magnetic field act as planet-sized electric generators, building up electrical charge until the charge arcs from the moon down the magnetic lines of force to the polar regions of the Gas Giant in lightning bolts the size of a continent. This “electron stream” effect causes brilliant aurorae at the polar regions, easily visible on the dark side of the planet.

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- The magnetosphere also traps stellar-wind particles (plus the radiation emitted internally from VLGs and Brown Dwarves) into giant Van Allen belts; close-in moons are immersed in a sea of hard radiation.

Surface-habitable Moons

The image of a habitable satellite world—with its parent gas giant hanging in the sky [<http://tinyurl.com/xsvisions-4>]*—*is one of the classic images of “alien world”. As stated in *Scouts*:

If a main world already exists, it should be placed in the habitable zone. If a gas giant is in that orbit, the main world will be a satellite of the gas giant.

If the “satellite of the gas giant” is to be surface-habitable, this is easier said than done. A habitable satellite world has to be in a certain orbit to be viable; too close and the satellite is bathed in lethal radiation from the Van Allen belts and constantly turning inside-out with tidal-caused volcanism; too far and the orbital period and (tidal-locked) day become too long to support surface life.

A surface-habitable satellite must orbit 10-15 radii from its primary to clear the Van Allen belts, yet have an orbital period less than 80-90 hours (preferably 50 or less).

The optimum size for a Gas Giant with a habitable satellite appears to be between 20 and 200 M_E , with 20-40 M_E and 100-150 M_E being the most desirable. Larger than this, and the satellite is too close, burning from hard radiation on the outside and volcanism on the inside. At these mass ranges, a satellite should be able to orbit 10-15 radii away without too long a day. (Since *Traveller* measures orbits in radii of the primary and mass determines the orbital period, the middle range of 50-100 M_E has the lowest density—and the largest radii—for their mass; at 10-15 radii, the orbital period will be longer than for a denser primary.)

Even so, a satellite world will still be very seismically and volcanically active, and will have a large

er amount of background radiation. At 10-15 radii, the primary will appear fixed in the sky, with an apparent diameter of 15-20 times the Moon as seen from Earth, blue banded with white clouds like a mixture of sapphire and quartz in ever-changing detail. By day, the primary is a huge crescent, eclipsing the sun for an hour or two every day. During the eclipse, sunlight leaking around the primary’s atmosphere turns the Gas Giant into a crimson ring flickering with polar aurorae and flashes of megalinghtning, bathing the satellite in a ruddy twilight.

At night, the full or near-full planet shines brightly enough to make the concept of “night” a joke, bathing everything in a blue light second only to daylight.

In extreme cases, tidal effects on long-term orbital dynamics can result in the Type E (Elliptical) atmosphere, where the satellite is elliptical instead of spherical, with nearside and farside tidal bulges extending out of the atmosphere. A more common version of this phenomenon is to have the satellite’s hydrosphere in a “ring ocean” with landmasses/highlands concentrated directly beneath the primary and at the antipodes.

Inside a Gas Giant [<http://tinyurl.com/xsvisions-48>]

Nothing living can survive the temperatures and pressures deep within a Gas Giant; all human experience will be with the “surface” regions and upper atmosphere. The basic rule-of-thumb is the deeper you go, the higher the pressure and temperature and the more extreme the conditions.

A useful analogy is that of a waterworld’s planetary ocean, except the “ocean” is a hydrogen atmosphere that becomes red- and white-hot in its depths. For *Traveller* purposes, the pressure/temperature is rated in “Crush Depth”, where the pressure and temperature destroy a vessel with all hands—first crushed like a sinking submarine, then melted by the ambient heat and dispersed in the winds. Armored ships (like System Defense Boats) have a greater crush depth; for simplicity, rate crush depth in whatever Armor Factor is in general use for

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ships—*High Guard*, *Striker*, *MegaTraveller*, whatever. A ship can survive inside a Gas Giant so long as it is above its crush depth.

Complicating this simple image is weather—supersonic winds, updrafts, and downdrafts; gigantic electrostatic effects; and tornado funnels the size of planets. Gas Giant atmospheres are a cosmic exercise in fluid dynamics, and tend to sort out into two main conditions:

- *Calm Layers* of clear air and frictionless superfluid laminar flows, with steady smooth horizontal winds, with the highest winds (around 3000 kph) along the equator. Clear-air lightning is common but not continuous; electrostatics normally manifest in coronal discharges (“St Elmo’s Fire”) around any foreign object.
- *Storm Layers* filled with dust, impurities, clouds, and turbulence—as in supersonic to hypersonic wind gusts, updrafts, downdrafts, and forests of gigantic tornado funnels, all lit by never-ending continuous lightning bolts like cosmic strobe lights.

These are called “layers” because they tend to form in horizontal layers within the atmosphere, storm layers forming at the interfaces between calm layers of different wind conditions. These layers are not continuous like the skins of an onion; storm and calm layers break the “surface” at different latitudes, forming the cloud bands. Cyclonic storms (“spots” and “speckles” on the “surface”) are spinning vertical columns of concentrated storm layer—tornadoes the size of planets drawing hot impurities from deep within the planet.

For *Traveller* purposes, treat the vertical cross-section of a Gas Giant as alternating calm and storm layers, with crush depths for increasing Armor Factors at increasing depths. Note that Inner Zone Gas Giants have no clouds to indicate the presence of their (larger and more energetic) storm layers. Small Outer Zone Gas Giants will be mostly calm layers, with storm layers only in the depths.

Beneath crush depth, temperatures and pressures continue to rise with depth—red-hot, yellow-hot, white-hot. Finally the pressure is enough to liquefy the hydrogen; after thousands and thousands of km of red-hot hydrogen fog comes the “true surface”, a planetary ocean of white-hot liquid hydrogen. If any carbon exists at this state, the temperature and pressure compress it into macrocrystalline form—a rain of diamonds down to the molten rock core.

Fuel Skimming (and Complications of Same...)

Travellers will most likely encounter a Gas Giant when skimming fuel. This looks straightforward; just skim the GG’s hydrogen atmosphere, scoop a load of free fuel, and take the risk of Unrefined Fuel, right?

Wrong.

The optimum Gas Giant for fuel skimming is between 30 and 50M_E; this is the point of minimum density and minimum surface gravity, where even a 1-G ship has enough acceleration to climb out in a worst-case situation—all the fuel in the universe won’t help you if you can’t make escape velocity after the skim. (Generally, if the Surface Gravity from the tables is less than the ship’s Maneuver Drive Grating, the ship can skim safely.) Outer Zone orbits are preferred, as less heat increases the chance of “calm air”. (Cloud banding is the most obvious clue; if the GG is small and cold enough to not have cloud bands, chances are the calm air extends over most or all of the “surface”.)

There is Unrefined Fuel, and there is Really Bad Fuel—contaminated with heavier elements. If the Gas Giant is less than 20 M_E (low-end Table 1) or greater than 1½ -2 M_J (Table 2C and up), the raw fuel will be not just unrefined, but Contaminated. Less than 20 M_E, and the mini-Gas Giant has not accreted enough hydrogen to dilute the heavier gases; more than 1½ M_J, and the atmosphere is too active from internal heat, upwelling heavier elements from the depths in planet-sized convection cells. Inner-zone Gas Giants also suffer from this problem—doubly

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treacherous, as their atmosphere is too hot for any telltale clouds to form.

Contaminated Fuel has the following in-game effects:

- Apply a DM of +1 on the misjump/drive malfunction rolls if using it unrefined. This is above and beyond the existing DMs for Unrefined Fuel.
- Refining takes two or more passes through the processing plant; allow double the time or use double the processing plant to refine. (A single refining pass changes Contaminated Fuel to simple Unrefined Fuel.)
- This idea can be extended to several grades of Unrefined/Contaminated fuel; as the contamination gets worse, the greater the DMs (and the number of refining passes needed).

At the other extreme, some Gas Giants have little or no heavy gas contaminants, and are natural Refined Fuel. These Gas Giants are always found orbiting the oldest stars in the Galaxy (Class M, Size V “red dwarves” and Class K or M, Size VI “subdwarves”) with no other bodies in the system—no moons, no asteroids, no planets, nothing. When these systems formed, the only thing existing in the proto-Galaxy was hydrogen. (The formal astronomical name for this is “low-metallicity”.) Yes, they are natural Refined Fuel, but they’re in another system where all support to exploit this has to be brought in by Jump.

Fuel Skimming is more complex than its general image of “dive in, hit the atmosphere, skim the fuel, and boost out”. The basic idea is to hit a calm layer and run with the wind, avoiding radiation and turbulence.

- *Approach:* Initially, the skimming ship will approach the gas giant diagonally, avoiding the hard radiation at the magnetic poles but getting under the Van Allen belts, aiming for atmospheric entry between the cloud bands in mid-latitudes.

- *Enter Atmosphere:* [<http://tinyurl.com/xsvisions-37>] The best place for this is between the storm/cloud bands in the mid-latitudes, avoiding any cyclonic-storm “spots” or “speckles”; this maximizes the chance of entering inside a calm layer. Once in atmosphere, the ship stays in the calm layer, matching speed with the laminar winds, and works its way towards the equator. This may require diving through the top storm layer to get into a calm layer beneath that emerges closer to the equator.
- *Skim:* Once in the calm layer, open scoops and start skimming and condensing the hydrogen as you run with the wind, matching speed with the increasing wind as you approach the equator. During this process, the ship will be sandwiched in a layer of “clear air”, with exotic-colored cloud decks tens to hundreds of km above and below dancing with constant lightning displays and writhing with ever-changing tornado funnels above and “thunderhead” upwellings below; the ship itself will stream a brilliant blue corona of St Elmo’s Fire, attracting lightning bolts and other electrostatic displays; sheets of rain, salvos of hailstones, and/or flurries of snow (water, ammonia, or whatever chemical impurities condense or freeze at the ambient temperature and pressure) splattering on the hull surface.
- Should the ship venture near the edge of a storm layer, expect a wild ride—sudden supersonic crosswinds, updrafts, and downdrafts, solid sheets of rain and/or giant hailstones (the largest of which can damage the ship like Missile hits), as well as becoming the target for every lightning bolt for a hundred km around. The equator directly beneath an inner moon is especially dangerous—even in a calm layer, the ship will intercept the “electron stream” flowing from the moon to the Gas Giant; such mega-lightning can hit like a spinal-mount particle beam.
- *Boost Out:* Ideally, the ship will emerge from a calm layer near the equator, blue sky above and storm layer below. In order to match speed with

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the wind and skim, the ship has to have bled off its original orbital velocity. The planet's fast rotation and higher winds near the equator will help, but the ship must now boost out using its Maneuver Drive, just as if it was taking off from the "surface"; this is why the Gas Giant must have "surface gravity" less than the ship's Maneuver Drive.

Class A to C Starports with Gas Giants in-system make use of special Fuel Lighters to skim and process their fuel. A fuel lighter is a streamlined non-starship, usually around 800 tons or so, with powerful Maneuver Drives to pull itself out of a Gas Giant's gravity well and all possible interior space devoted to fuel scoops, fuel tankage, and fuel processing plant. They boost to the Gas Giant, skim themselves full of fuel, and refine it on the return trip, unloading Refined Fuel at the starport or directly to ships. Tankers are starships similarly equipped; these accompany naval task forces or make runs to nearby Gas Giant-bearing systems (especially the aforementioned "low metallicity" systems) for those systems without a source of fuel.

Some high-tech worlds mine their Gas Giants for exotic chemicals when no other source is available. On small scales, this is done with specially modified fuel lighters whose "fuel refineries" effectively work in reverse, discarding the hydrogen and storing the specific chemical "impurities". Since these "impurities" are normally found in storm layers, these chemical lighters seek out the edges of storm layers for their skimming. Because of the danger, these craft are often unmanned, with autonomous AI robotic brains controlling them in-atmosphere. Sometimes a live crew flies them to the GG, "abandoning ship" in a carried small craft and reboarding upon emergence; others are remote-controlled from a home base on one of the GG's moons.

(Legally, this is complicated by the ancient maritime law that a completely-abandoned ship is a

"derelict" open to Right of Salvage by anybody; the equally-ancient safeguard to this is to have an animal aboard who is technically on the crew roster as "ship's mascot" who is left aboard when the crew evacuates. As long as one of the "crew" is aboard, the ship is not legally "abandoned".)

Large-scale "atmosphere mining" is done by large, heavily armored, purpose-built robotic refining platforms. Essentially giant unmanned chemical lighters, these platforms dive deep into the storm layers to skim and collect their chemicals, surfacing into the upper atmosphere to transfer their refined chemical loads to manned fuel lighters acting as chemical tankers.

Life in a Gas Giant

Some Gas Giants are life-bearing—all the precursor organic chemicals and molecules are present at some point, and the solar and interior heat (and lightning) provide the energy. The best candidates for life-bearing are similar to the best candidates for skimming—small, temperate-to-cool GGs with relatively calm atmospheres.

Gas Giant life forms will be floaters or flyers, analogous to ocean life. Most of the time they will be floating bacteria, microscopic "aero-plankton" visible only as strangely colored clouds or haze. This aero-plankton tends to congregate along the borders of calm and storm layers, where the storm layers bring nutrient chemicals up from the depths like "black smokers" along deep-ocean vents. Alternately, photosynthetic aero-plankton could ride winds in the upper atmosphere and sunlight.

Multicellular life could be simple floating "sheets" of "aero-algae" colonies or more organized forms including the "balloon-beasts" of common imagery (like the Jgd-II-Jadg); actually, the majority of worlds—Gas Giant or rockball—rarely get beyond bacteria.

Because of the turbulent environment on the edge of storm layers—life-forms could easily be drawn into a storm layer and destroyed by downdrafts into the depths—Gas Giant life would

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probably reproduce quickly and prolifically, spawning offspring faster than the turbulence and downdrafts could destroy them. Colony creatures have an advantage in this regard; if they are torn apart by winds and turbulence, each surviving fragment can regrow into a new colony. Though there is theoretically no limit to the size of Gas Giant “balloon-beasts”, the winds and turbulence normally limit size to smaller than commonly believed. (Such as 3m gasbag diameter in the case of the Jdg-II-Jadg.)

Life can complicate fuel-skimming; bacteria and aero-plankton would just be another “impurity” to refine out, but multicellular/colonial life can clog fuel scoops or in extreme cases cause collision damage (as Missiles).

Scenario Nuggets

Inconstant Sun

Belters are operating in a flare-star system with an epistellar Gas Giant. The star is showing massive sunspot activity, prominences flaring visible to the naked eye; a mega-flare is imminent. For various reasons, the belters are staying and extracting until the last minute, betting on outrunning the flare. Do you feel lucky today?

Platform 44 (©1982 Dave Bryant)

A chemical lighter (of hundreds to thousands of Traveller tons) starts its climb out of the Gas Giant; above, its crew in their Cutter descend to rendezvous with the unmanned lighter and fly it back to the main world. A freak mega-bolt blanks out the Cutter’s sensors for over a minute, blowing every circuit breaker in the avionics; when they recover, the lighter—now silent, wreathed in St Elmo’s Fire and lightning arcs like a Tesla Coil—is dropping in a glide path back into the Gas Giant. Can the player-character crew board, repair, and salvage it before it hits crush depth?

As the out-of-control lighter drops, it will fall through several calm and storm layers before reach-

ing crush depth. Each storm layer can damage the lighter further, as it falls out of control and is knocked about by the turbulence; this allows the referee to orchestrate the scenario, as updrafts or downdrafts could speed or temporarily reverse the descent.

If the damage (from the initial accident or subsequent storm-layer tumbles) has weakened the hull, it could crush before its official crush depth, killing all aboard—remember, the pressure is always increasing to and past ocean-bottom levels, and any breach or damage weakness only has to let the pressure in. As the pressure increases, the hull will creak and groan ominously. (Don’t overlook the “horror value” of the gory details of a crush-depth collapse and the fact that they’re falling without ever hitting bottom because a Gas Giant has no surface to hit.) If the interior atmosphere is breathable, there will also be a fire/explosion hazard long before crush depth as the increasing pressure literally squeezes the outside hydrogen through the hull itself (remember, hydrogen atmospheres are classed as Type C—Insidious—as hydrogen molecules are so small they can interpenetrate almost anything solid, literally squeezing through the spaces between the hull molecules). The lighter having an armored hull and a greater crush depth than the crew’s escape cutter complicates salvage—if the crew stays with the lighter past the cutter’s crush depth, they will be unable to escape. Again, do you feel lucky today?

This scenario was developed by Dave Bryant and run in several incarnations at several conventions in the early 1980s; in the original version, “Platform 44 Linda” was a large dedicated refinery platform; the corporate tanker docking with it was also damaged, but managed to boost out; the player-characters were the crew of a Scout/Courier on detached duty who were skimming fuel near the accident and volunteered to salvage the platform as it plunged through the atmosphere.

From experience in the original scenario, I recommend the referee measure the fall by calm and storm layer, with crush depth for cutter and platform measured in so many layers below the “surface”, not by a hard-and-fast

The Lab Ship

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time-and-distance track. This allows the referee to orchestrate the danger for maximum drama without getting bogged down in detail. One crowd-pleasing effect in the upper atmosphere (first calm layer?) was an EVA along the exterior of the platform's hull to reach a damaged area, vacc-suited PCs dragging themselves from handhold to handhold in a blast of ammonia sleet, like mountain climbers in a blizzard. Later on, when the platform's emergency "hot-air balloon" gasbags had been deployed to halt the descent, they ran afoul of local balloon-beasts in rut, attracted to the gasbags.

Illustration Links

Illustrations are by John Whatmough, captured by the Wayback Machine from his website "Extrasolar Visions", formerly at <http://www.extrasolar.net/>. TinyURL links in this article are to captures at various dates at the approximate time this article was originally added to the Freelance Traveller website.

A full list of images is available from the Wayback Machine captures at http://web.archive.org/web/*/http://www.extrasolar.net/usage.asp.

Tables

Table 1: Small Gas Giants						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	5	0.015	1.7	.16	14	1.73
2	10	0.030	2.5	.23	20	1.65
3	20	0.070	4.0	.36	32	1.25 (Uranus/Neptune)
4	30	0.100	5.7	.52	45	0.92
5	40	0.130	7.4	.67	60	0.73 (Point of lowest density)
6	50	0.170	8.0	.72	64	0.78

Table 2A: Large Gas Giants						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	100	0.32	9.0	0.82	72	1.25 (Saturn)
2	150	0.48	9.5	0.86	76	1.66
3	200	0.64	10.0	0.91	80	2.00
4	250	0.90	10.5	0.96	84	2.25
5	300	0.95	11.0	1.00	88	2.50 (Jupiter)
6	Roll again on Table 2B					

Table 2B: Large Gas Giants						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	350	1.1	11.2	1.02	90	2.85
2	400	1.3	11.4	1.04	91	3.10
3	450	1.5	11.6	1.05	93	3.30
4	500	1.6	11.8	1.07	95	3.60
5	550	1.8	12.0	1.09	96	3.80
6	Roll again on Table 2C					

Table 2C: Very Large Gas Giants						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	600	1.9	12.2	1.11	98	4.2 (Double Jupiter)
2	700	2.3	12.4	1.13	99	4.6
3	800	2.6	12.6	1.15	101	5.0
4	900	2.9	12.8	1.16	103	5.4 (Triple Jupiter)
5	1000	3.2	13.0	1.20	104	5.8
6	Roll again on Table 2D					

Table 2D: Very Large Gas Giants						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	1500	5.0	13.5	1.25	108	8.2 (Five Jupiters)
2	2000	6.7	14.0	1.27	112	10.2
3	2500	8.3	14.5	1.34	116	11.8
4	3000	10.0	15.0	1.36	120	13.3 (Ten Jupiters)
5	3500	11.6	15.5	1.41	124	14.6
6	Roll again on Table 3					

Table 3: Brown Dwarfs						
1D	Mass		Diameter		Trav Size	Surface Gravity Gs
	M _E	M _J	Terra	Jupiter		
1	4000	13	16	1.45	128	16.6
2	5000	17	17	1.55	136	17.2
3	6000	20	18	1.64	144	18.5 (Twenty Jupiters)
4	7000	23	19	1.73	152	19.4
5	8000	27	20	1.82	160	19.8
6	≥9000	≥30	≥21	≥1.90	≥168	≥20.0 (Thirty Jupiters)



Skkuuhkarzk

profiled by Robert Gilson

This profile was originally posted to the pre-magazine Freelance Traveller website in 2003.

Description

Skkuuhkarzk is a rarity among his people. He has a more than a passing curiosity for other races and shows far less contempt for them as well. Skkuuhkarzk was a typical warrior/bard for his people and traveled between worlds in a personal scout ship that was given to him by a high-ranking member of his *Ssaahk* in reward for a favor that he had performed. After achieving honor among his own people he set out to see the galaxy and to meet its many races. He traveled through both Human and Vargr space and due to a couple of lucky misjumps he has gone further into alien space than any other member of his race. During one misjump he landed in an empty system and ended up having to travel to the next system at sublight. Using his racial abilities he was able to survive, but since that time he hasn't made the effort to figure out what his age is. He usually tells humans that he is over 200 years old. He likes the reaction he gets from them when he tells them this. Skkuuhkarzk travels in a very old *Suliaman*-class scout that was modified for Hhkar by the Julians.

Skkuuhkarzk could be encountered just about anywhere in Charted Space. He will be especially interested in the group if a party member is of a race he has never encountered before.

Skkuuhkarzk (243 points)

Male; Age unknown; 7'4"; 420 lbs.

ST: 14 [45] IQ: 13 [30] Speed: 5.50

DX: 11 [10] HT: 11 [10] Move: 5

Dodge: 5 Parry: 8

Advantages

DR 1 (Everything) [3]; Early Maturation 1 [5]; Extended Lifespan 1 [5]; Field Sense [10]; Filter Lungs [5]; Hermaphromorph [2]; Language Talent +1 [2]; Luck [15]; Metabolism Control 10 [50]; Mode Ad-

vantages [45]; Regeneration [7] (Only during gender change: -18%; Requires Preparation: 8 hrs., -60%); Sharp Teeth [5] (Cutting damage; see p. B140); Striker (tail) [8] (Damage: cr 1d; Reach: 1, +5; Reduced Skill: -2).

Disadvantages

Callous [-6]; Code of Honor [-10]; Curious [-5] (Roll: IQ); Dependency: Smoking (Common) [-15] (Frequency: Daily, ×3); Duty (to *Ssaahk*) (12 or less) [-10]; Hard of Hearing [-5] (only -2 to hearing rolls: -50%); Intolerance (Believe they are the superior race in the galaxy) [-10]; Overconfidence [-10]; Sleepy (50% of the time) [-10].

Quirks

Intolerance (Hates psionics and psionic using races); Very interested in other races; Chews cigars; Likes learning other races games; Often says things that will get misunderstood by translator. [-5]

Skills

Area Knowledge (Galaxy)/TL10-10 [1/2]; Astroga-tion/TL10-11 [1/2]; Bard-13 [6]; Bardic Lore (Hhkar)-11 [1]; Brawling-13 [4] (Parry: 8); Broadsword-12 [4] (Parry: 6); Chess-13 [1]; Climbing-11 [2]; Computer Operation/TL10-12 [=BD]; Diplomacy-11 [4]; Elec-tronics Operation (Communications)/TL10-11 [1/2]; Electronics Operation (Sensors)/TL10-12 [1]; Elec-tronics Operation (Weapons)/TL10-12 [1]; Fast-Talk-12 [4]; First Aid/TL10-13 [1]; Fishing-12 [1/2]; Free Fall/TL10-12 [4]; Games-12 [1/2]; Gesture-13 [1/2]; Gunner (Beam Weapons)/TL10-12 [1]; Gunner (Railgun)/TL10-11 [1/2]; Guns (Gauss Pistol)/TL10-13 [1]; Guns (Gauss Rifle)/TL10-13 [1]; Intimidation-12 [1]; Knife-13 [4] (Parry: 5); Knife Throwing-12 [2]; Language Galanglic (MVH)-11 [1]; Language Hhkar (MA) (native)-14 [0]; Language Vargr (MVH)-10 [1/2]; Lucid Dreaming-13 [4]; Meditation (Realistic)-13 [4]; Merchant-10 [1]; Piloting (Spacecraft)/TL10-13 [8]; Riding-10 [1]; Savoir-Faire (Military)-10 [1/2]; Stealth-10 [1]; Survival (Desert)-11 [1/2]; Survival (Island/Beach)-11 [1/2]; Survival (Plains)-11 [1/2]; Survival (Woodlands)-11 [1/2]; Tracking-12 [1]; Vacc Suit/TL10-11 [1/2]; Xenology/TL10-10 [1/2]. ☼

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- e-mail: feedback@freelancetraveller.com.

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- Forums:
 - Traveller Fanzine section of SFRPG: <http://www.sfrpg-discussion.net/phpBB3/viewforum.php?f=36>
 - Lone Star at Citizens of the Imperium: <http://www.travellerrpg.com/CotI/Discuss/forumdisplay.php?f=13>

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Traveller on the Internet

IRC: The #Traveller and #LoneStar channels

Freelance Traveller sponsors channels for *Traveller* fans on the Undernet and Otherworlders IRC networks, and the two channels are "bridged" so that if you're visiting either, you can see what's going on in the other, and talk to people there. For more information about both channels, see our informational pages at <http://www.freelancetraveller.com/infocenter/travnet.html#IRC> and <http://www.freelancetraveller.com/infocenter/travchat/index.html>. Come talk "live" with other *Traveller* fans about anything at all, *Traveller* or not, and make both channels "jumping" places to hang out!


You can also run "play-by-IRC" game sessions in either channel; please stop in and ask one of the channel operators (FreeTrav or EMT_Hawk) to schedule it, so we can ensure that the 'bridge' and the 'bartender' are set into a nondisruptive mode.

Please watch the *Traveller Mailing List*, the *Mongoose Traveller forum*, and the *Lone Star* section of the *Citizens of the Imperium forum* for announcements of Topical Talks!

News About Traveller

Recent Traveller News and Findings

October and November 2015

- **Christian Hollnbuchner** has released *Siren Class Hunter Submarine*, *Space Stations XXI: Surveillance Station*, *Space Stations XXII: Skyfortress*, *Space Stations XXIII: Medium Habitat*, *Starships Book 100I000: Pocket Battleship*, *Starships Book 100I001: Blazing Guns*, *Titan Walker*, and *Harbour Monitor*.
- **Infinite Roleplay** has released *Heavenly Bodies Issue #1*, and *Heavenly Bodies Issue #2*.
- **Gypsy Knights Games** has released *Ships of Clement Sector 10: Lee-class Merchant Vessel*.
- **Felbrigg Herriot** has released *The Experiments*, and *Decopedia Volume 2*.
- **Avalon Game Company** has released *Kit Bag 7: Hostile Environments*.
- **Nienhaus Games** has released *Perfugia-Class Space Station*.
- **Far Future Enterprises** has released *Traveller20 Core Rules*, *Traveller20: Gateway to Destiny*, *Traveller20: Traveller's Aide #1: Personal Weapons of Charted Space*, *Traveller20: Traveller's Aide #2: Grand Endeavor*, and *Traveller20: Traveller's Aide #3: On the Ground*. 

Submission Guidelines

What is *Freelance Traveller* looking for?

We're looking for anything and everything to do with *Traveller* – reviews of products, house rules, alternate settings, NPC profiles, world write-ups, adventures, equipment, starships, fiction, “color” articles... If you see it in *Freelance Traveller*, or on our website, we're interested in it. Even if you don't see it in the magazine or on the website, we might be interested; write to editor@freelancetraveller.com and ask.

Some things that we want that you might not think of as “*Traveller*” would include reviews of non-*Traveller* products that easily lend themselves to being ‘mined’ for ideas for use in *Traveller*, or reviews of fiction (in any medium) that “feels” like *Traveller* in some way. In these cases, your article should focus on the *Traveller*-esque aspects of the item. There may be other things, as well; if you're not sure, write and ask.

What about ...

The rule of thumb is “If it's a *Traveller* ruleset, or a setting that has been published for use with a *Traveller* ruleset, go for it!”. That includes the non-Official *Traveller* Universe settings that have been published for use with any version of the *Traveller* ruleset, including (but not limited to) *Judge Dredd*, *Strontium Dog*, *Babylon 5*, *Reign of Diaspora*, *Twilight Sector*, the two *GURPS* variants on the Official *Traveller* Universe, *Avenger Enterprises' Far Avalon*, and the forthcoming *Traveller Prime Directive*, and any others we may have forgotten.

...Hyperlite?

We've made the decision to support *Hyperlite* as though it were an alternate *Traveller* setting, much like *Twilight Sector* or *Reign of Diaspora*. The changes that Sceptune Games has made to *Traveller* to get *Hyperlite* aren't really much more than the differences between Classic *Traveller*, *MegaTraveller*, *Marc Miller's Traveller*, and *Mongoose Traveller*, and converting between any of those systems and *Hyperlite*, in either direction, should be ‘trivial’.

... Diaspora, or Starblazer Adventures?

If your article is about “crossing over” between these products and any of the “standard” or supported *Traveller* rulesets or settings, by all means, submit it! If it's support for those systems beyond *Traveller*, we'll accept and hold

the submission, but will not print it unless/until we've had a reasonable level of expression of interest in such support from our readers.

How should I submit my article?

What needs to be in the submission?

At the very minimum, we need the submission itself, your name (for credit), and a valid email address to contact you at if we need to.

What format should I submit it in?

That depends on what you're submitting. Generally:

Text should be submitted in Microsoft Rich Text Format (RTF), Microsoft Word 2003 (DOC) or 2007/2010 (DOCX), OpenOffice Writer (ODT), or plain text (TXT). Most word processors will support one of those; if yours seems not to, please write to us for assistance. Avoid PDF if at all possible; it is difficult to reformat PDFs for our magazine or website.

Graphics should be submitted in the format that's best for the type of graphic. Most of the time, that will be GIF, PNG, or JPG/JPEG. Submitting in higher resolutions is better; we have tools to resample a picture to make it smaller if we need to – but it's not possible to make a picture larger without it becoming pixellated.

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Plans (deck plans, building plans, maps, etc.) may be better submitted in a vector-based format such as CorelDRAW! format (CDR) or any format that can be imported into CorelDRAW! X4. Scalable Vector Graphics (SVG), Windows Metafile (WMF), Enhanced Metafile (EMF), Encapsulated PostScript (EPS), or Microsoft Visio (VSD) are some common vector formats that can be imported.

How do I get it to you?

Email it to us at our submissions address, submissions@freelancetraveller.com. Your subject line should specify the type of article that it is, and what section you think it should be put in, e.g., “Combat Rules for Doing It My Way”.

