TRAVELLER

Supplement 14:
Space Stations

That's no moon...

TRAVELLER
SPACE STATIONS

CREDITS

Classic Traveller

Marc Miller

Loren Wiseman, John Harshman, Frank Chadwick, Darryl Hany, Winston Hamilton, Tony Svajlenka, Scott Renner, Doug Poe, David MacDonald, Wayne Roth, Paul R. Banner.

Mongoose Traveller

AUTHOR
Barnes Thomas

EDITOR
Matthew Sprange

LAYOUT
Will Chapman

INTERIOR ILLUSTRATIONS
Sandrine Thirache, Patricia Diaconeasa, Sara Forlenza, Nuno Nobre, Carlos Nunez de Castro Torres

SPECIAL THANKS
Andrew James Alan Welty

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INTRODUCTION

Smaller than planets, often larger than capital ships, space stations are a key part of any system's military, economic and social construct. Indeed, in some systems the majority of the local population may be housed on stations with only a few making their lives on planets and moons in the area. Either way, stations are almost universally present in any system able to build them.

The core of this book is focused on the design and construction of space stations. New power-plants and grav drives provide the much less intensive needs of a space station, while new hull forms allow for cheaper structures to be built without the anti-gravity plating normally mounted within every ship. Facilities enable space stations to take part in local, inter-planetary and interstellar production and trade, to become population centres,

install shopping districts and construct their own starships for sale or personal use.

Further chapters give more detail to station facilities and how they function, as well as offering new docking options for larger spacecraft and even capital ships. Stations can be the home ports of entire fleets, and without sufficient docking and recreation space, a fleet will soon fall apart.

This book covers a wide variety of types of station, and also the running of a station, involving building, staffing and setting up the imports that will be its life blood. You will read about the continued running of a station and the end result; profits. Finally, you will discover adventure hooks, setting suggestions and example stations to populate your Traveller universe with.
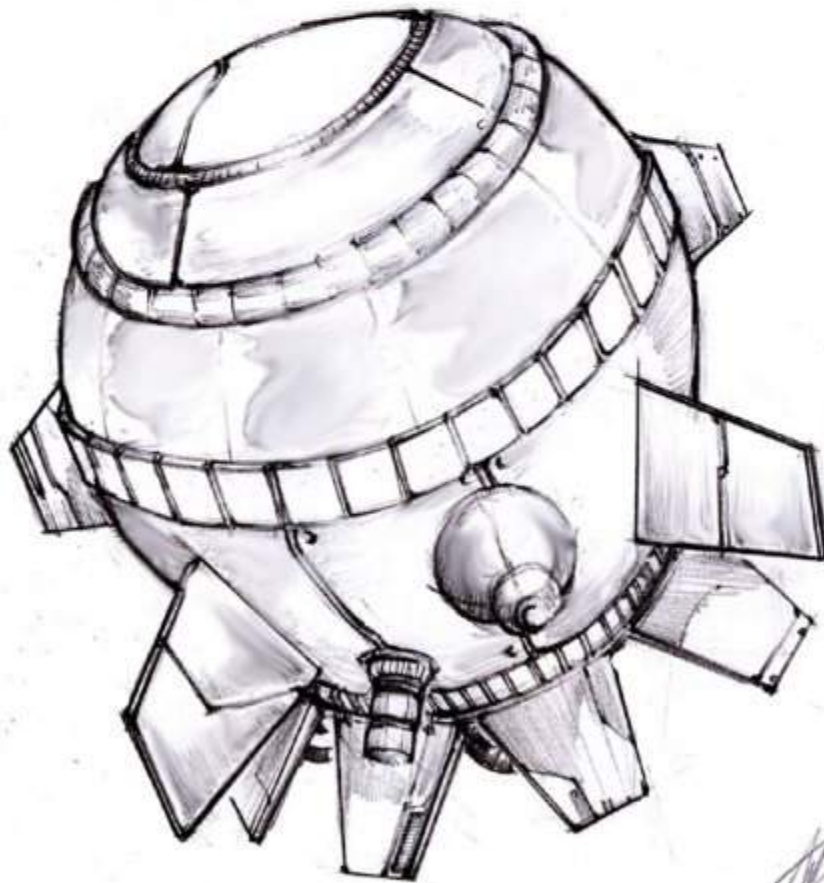
SPACE STATION DESIGN

While similar to the construction of spacecraft, space stations have some marked differences in both design and construction. As they do not have to undergo the rigours of jump travel or high velocity manoeuvring, their hulls can be thinner and less well reinforced. They also do not need nearly as powerful manoeuvre drives or power plants to maintain functionality.

In terms of construction, the differences come in location and method. Space stations are normally brought together in situ, with orbital stations having their components accelerated to orbital speed before assembly.

Stations are built for many purposes and by many varied groups. Military designs may be built for orbital defence or as fleet docks, while businesses may build stations in asteroid belts designed as rendezvous points for belters or processing stations for raw materials. The rules presented here allow for the construction of stations of all sizes and purposes.

DESIGN CHECKLIST
1. Choose a hull
i. Choose hull configuration
ii. Optionally, install armour
2. Decide what sort of orbit the station will maintain, and determine the size of Manoeuvre Drive to install
3. Choose a Power Plant, ensuring that it can provide enough power for the station and its Manoeuvre Drive
4. Work out fuel requirements and allocate space for fuel
5. Install command sections
6. Install a computer
i. Install computer software
7. Install sensors
8. Install staterooms for crew and facility staff (if any)
9. Optionally, install other components such as vehicles, drones and facilities
10. Optionally, install armaments and screens
i. Allocate one ton of fire control equipment per turret, barbette or bay
11. Any remaining space can be allocated to cargo

THE HULL
The outer shell of a station is, at its core, defined by one question; will it include artificial gravity or not. NG (Non-Gravity, artificial) hulls are cheaper and less maintenance intensive, but have to be built in specific configurations in order to take advantage of spin-created gravity. AG (Artificial Gravity) hulls can be built in any configuration and make use of all space aboard but are, of course, more expensive.

The following table gives the cost per ton of both AG and NG station hulls, as well as the tons needed for each Hull and Structure Point.

TL	AG Hull (MCr)	NG Hull (MCr)	Tons per Hull/ Structure point
7	–	0.01	200
8	0.02	0.02	180
9	0.04	0.03	160
10	0.06	0.04	140
11	0.08	0.05	120
12	0.1	0.06	100
13	0.11	0.07	80
14	0.13	0.08	60
15	0.15	0.09	40
16	0.2	0.1	20

The size of the hull of a spacecraft is severely limited by the drive systems that it must be fitted with. Large Jump Drives are incredibly expensive and so few ships are built larger than a few hundred thousand tons. Space stations are not limited by this as they do not require a Jump Drive, the massive fuel reserves necessary to use it, nor even the large Power Plant required to make it function. Therefore, they can be built to a much grander scale which is limited only by the technology of those building it.

Space stations of over 500,000 tons require an AG hull in order to maintain their structural integrity.

TL	Tonnage
9	100,000 tons or smaller
10	500,000 tons or smaller
11	1,000,000 tons or smaller
12	10,000,000 tons or smaller
13	100,000,000 tons or smaller
14-15	1,000,000,000 tons or smaller
16-17	2,500,000,000 tons or smaller
18-19	5,000,000,000 tons or smaller
20+	5,000,000,000 tons or larger

Configuration
Any station can have either a standard (cylinder, cone or sphere) configuration, or a distributed (multiple connected sections)

configuration. However an NG hull using these configurations will have no gravity anywhere within its hull.

A **distributed** station reduces the cost of its hull by 10%. It cannot mount any additional armour.

A **standard** hull is of a very regular shape, without any serious breaks in its hull.

There are also two configurations used specifically to provide NG hulls with spin and gravity in certain areas. These are called spin habitats, as they use spin forces to create a gravitational force along their edges. To design a spin habitat, add up all the components of the station you wish to be under gravity, and then choose one of the following configurations.

A **Double Hull** is a two hulled cylinder where the whole or part of the outer hull spins to create gravity, while the inner hull does not. The outer hull is kept at around 1G by the speed of its spin and is used for any components that must be inhabited for long periods of time, such as crew quarters. The outer, spun section of these stations must be of at least 60 tons. Machinery to spin a double hull uses 0.1 tons for every ton of outer hull. For each full percent of the hull which is made part of the spinning section, the cost of the station's hull must be increased by 1%. The design is most useful for large designs, as the enclosed central hull is at least 15 metres in radius.

A **Hamster Cage** is a series of spun rings set at right angles to the rest of the station's hull. The rings must have a radius of at least 15 metres in order to produce a gravitational field. Machinery to spin a hamster cage uses 0.1 tons for every ton of spun ring. For each full percent of the hull which is made part of the hamster cage, the cost of the station's hull must be increased by 2%.

Stations can be separated into up to five sections depending on their tonnage. Each section is carefully separated from the others during the design process so that if damaged, the rest of the station will survive. Attacks on a station will hit one section at a time. The following table gives the tonnage needed for each additional section, as well as suggested titles for each section though they should be named when components are allocated to them. Stations of 1,000 tons or less will only have a single unified 'section'.

Armour
While a station's hull provides basic protection against micro-meteorites and low-powered anti-ship weaponry, it is possible and usually necessary to fit heavier armour for protection against disaster and attack.

ENGINEERING SECTION
Stations have much smaller requirements for power plants and manoeuvre drives than starships. Instead of having to make high powered acceleration and deceleration manoeuvres, stations need only maintain their current orbital track, a much less intensive task. There are four types of orbit a station can maintain, and each requires a different size of manoeuvre drive:

A **Non-orbital** station is not in orbit around any planetary body. Instead it sits somewhere in the depths of space, perhaps within an asteroid belt or between worlds. They often function as fuelling depots or resource collectors. Because they only have to make very minor attitude corrections, they need only the smallest of drives.

An **Orbital** station spins around a planetary body, but makes no attempt to maintain a regular location above the planet. Survey stations emplaced above worlds under study often have a basic orbit, as it can both be low altitude and cover a significant area of the planet.

A **Geosynchronous** orbit completes a single orbit in each day, maintaining position above the planet. However, the station traces out a figure eight pattern each day, so this orbit is a

Armour	TL	Cost	Protection	Max. Armour
Titanium Steel	7	5% of base hull	2 per 5%	TL or 9, whichever is less
Crystaliron	10	20% of base hull	4 per 5%	TL or 13, whichever is less
Bonded Superdense	14	50% of base hull	6 per 5%	TL

Tonnage	Number of sections	Section 1	Section 2	Section 3	Section 4	Section 5
More than 1,000 tons	2	Engineering	Command			
10,000 or more	3	Engineering	North	Command		
50,000 or more	4	Engineering	South	North	Command	
200,000 or more	5	Engineering	South	Middle	North	Command

way of maintaining cover over a location when direct overhead presence is not always needed. These are most often used by military defence platforms as they can cover a city and the surrounding area throughout the day.

A **Geostationary** orbit holds a station directly over a single point on the planet, all day every day. These are vital for stations connected to ground facilities by way of orbital elevators, as well as commercial stations needing the shortest distance from the ground up to orbit.

Orbit	M-Drive percentage	M-drive cost (MCr/ton)	Thrust
Non-orbital	0.25	0.5	0.1G
Orbital	0.5	0.5	0.25G
Geosynchronous	0.75	0.5	0.5G
Geostationary	1	0.5	1G

A station's power plant has to be big enough to maintain a power supply to both the manoeuvre drive and the rest of the station's systems. Some military stations will install a larger than necessary power plant in order to carry a larger amount of heavy weaponry. Power plant sizes change depending on Tech Level, as described on Page 63 of *Book 2: High Guard*.

FUEL

Stations are entirely dependant on shipments of fuel to function, so many have very large internal fuel tanks to enable them to remain unsupplied for lengthy periods of time. However much fuel the station has aboard must be indicated on plans, as well as the length of time it can operate with that much fuel.

Power plant fuel depends entirely on the size of the power plant. For a standard fusion plant, an amount of fuel equal to two thirds the size of the power plant will power the station for two weeks. For example, a 300 ton power plant (powering a 60,000 ton non-orbital space station) would require 200 tons of fuel for every two weeks of operation. For chemical plants, this figure is 15 times larger.

COMMAND MODULES

A station requires one command module per section. These are the station's control rooms, and in some they often double as administration centres, traffic control and strategic planning areas. Each command module takes up 0.2% of the station's total tonnage and costs MCr0.1 per ton. One of these must be designated as the station's bridge, but any can use speciality bridge options. The command module has a minimum size of one ton, which allows a single operator to monitor the minimum of station functions.

COMPUTER

Stations, much like capital ships, have distributed computer networks that co-ordinate the myriad of systems that keeping a station spinning. However the central core needed to run a jump engine is unneeded in any station design. The size of computer needed is therefore determined by the station's tonnage.

Station size minimum	Computer Model	TL	Rating	Cost
0-3,000 tons	Distributed/1	7	20	MCr5
3,000-5,000 tons	Distributed/2	9	30	MCr7.5
5,001-10,000 tons	Distributed/3	11	40	MCr10
10,001-50,000 tons	Distributed/4	12	50	MCr16
50,001-100,000 tons	Distributed/5	13	60	MCr25
100,001+ tons	Distributed/6	14	70	MCr40
100,001+ tons	Distributed/7	15	80	MCr60

Software may be added up to the limit of the computer's rating. Any software over and above this limit can be added, but the total running programs cannot exceed the computer rating, and some will be deactivated.

SENSORS

Stations use standard sensors, but those over 5,000 tons can mount multiple extended or distributed arrays thanks to their size and may fit one sensor set per section. Extended arrays

Orbit	P-plant Percentage of Hull	P-plant Cost (MCr/ton)	Bay Weapons	Spinal Weapons	Screens
Non-orbital	0.5	2.5	1 per 3,000 tons	No	0
Orbital	1	2.5	1 per 2,000 tons	No	0
Geosynchronous	1.25	2.5	1 per 1,500 tons	No	1
Geostationary	1.5	2.5	1 per 1,000 tons	No	1

are very popular as stations need not move and so they can be kept unfurled continuously.

FACILITIES

Many stations have a singular role for which they were constructed, be it military, civilian or commercial. Facilities are the working part of the station, the sections that allow the structure to make a profit or provide a service to the system they are based in.

Type	Cost	Requirement
Mineral refinery	MCr0.25/ton	Asteroid trade code
Fuel refinery	MCr0.1/ton	Gas giant or water world
Basic manufacturing	MCr0.2/ton	Any system
Advanced manufacturing	MCr0.4/ton	In or Ht trade code
Specialised manufacturing	MCr1/ton	Trade code dependent on good.
Construction yard	MCr0.5/ton	Any system
Residential space	MCr0.1/ton	Any system
Commercial space	MCr0.15/ton	Any system

WEAPONS

Armaments and screens are treated in exactly the same way as in *Book 2: High Guard*, other than the restrictions caused by the smaller power plants most space stations are equipped with.

CREW

Some of the largest space stations have crews who could populate a small city, but all require a crew of one sort or another. Due to their more static nature, space stations undergo fewer stresses, and so often have smaller crews than capital ships. The specific number is based on the station's plant, weaponry, and any other components. Crew numbers are heavily impacted by whether the station is a civilian or military construct.

The Command Section

A military station should have at least a commanding officer, executive officer, computer officer, flight control officer, medical officer and communications officer. It should also include junior ratings and support personnel equal to 50% of the total officers in the section.

A civilian station should have at least a station chief, computers expert and traffic controller. It should also include support personnel equal to 75% of the senior command crew.

Large stations of over 20,000 tons should have 5 additional personnel assigned to the command section for every 10,000 tons of station.

The Engineering Section

A military station requires one engineering crew member for every 100 tons of drive and power plant installed, including one high rank enlisted crew member and several junior rank enlisted crew members. A civilian station, with its lower maintenance requirements, needs one engineering crew member for every 200 tons of drive and power plant installed, including at least one knowledgeable crew chief.

The Gunnery Section

A station should have a chief gunnery officer and at least one petty officer for each type of weapon on board. Spinal mounts should have a crew of 1 per 100 tons; bay weapons should have a crew of at least two; turrets should have a crew of at least 1 per barrage, giving the maximum number of barrages that can be fired. Drones require one crew member per active drone.

Each screen should have a crew of at least four. The gunnery section overall should be made up of 10% officers, 30% senior enlisted crew and 60% junior enlisted crew.

It should be noted that while civilian stations require the same number of crew per weapon, they will still often have smaller gun crews. Despite relying on defensive weapons for the most part, turrets will often be arranged into large volume barrages to save on the number of required gunners.

The Flight Section

If a station has any launched craft, it should have a crew for each. On a military station this is normally a flight crew of one or two pilots, a back-up pilot and at least one maintenance person per craft. On a civilian station this will likely be a flight crew for each craft of one or two pilots, and at least one maintenance person per pair of small craft. A launch bay requires a crew of at least ten on either type of station to function properly, though it is often larger if the launch tube is designed for larger craft.

The Service Section

A station requires a significant number of crew to provide basic services such as maintenance, security and handling cargo. A military station requires 3 service crew per 1,000 tons, while a civilian station requires 2 per 1,000 tons.

The Facility Crew

Any station which mounts a working facility requires a crew to man and maintain it. Refineries, construction and manufacturing facilities require one crew per 50 tons mounted on the station. This is true whether the station is military or civilian although some military stations will carry larger crews to maintain full capacity at all times. Semi-automated facilities only require one crew per 75 tons of facility mounted on the station, while automated facilities only require one crew per 100 tons of facility to conduct routine maintenance.

QUARTERS

Staterooms or quarters must be provided for the entire crew. Senior officers and crew chiefs must be provided with their own stateroom or suite of rooms. Junior officers can share staterooms at a rate of two officers per room., as can enlisted crew members. On civilian ships it is possible to quarter junior ratings in barracks, though this does not lead to good morale.

Staterooms require 4 tons at a cost of MCr0.5 per stateroom, while barracks require 2 tons per crew member at a cost of MCr0.1.

SECTION HIT TABLES

Once all components have been selected for the station, the station's details must be recorded and its Section Hit Tables laid out.

	Engineering		Command		Other	
2D	External	Internal	External	Internal	External	Internal
2	Hull	Crew	Hull	Crew	Hull	Crew
3	C	C	C	C	C	C
4	M-Drive	P-Plant	B	B	B	B
5	A	A	A	A	A	A
6	Hull	Structure	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure	Hull	Structure
9	A	A	A	A	A	A
10	M-Drive	P-Plant	B	B	B	B
11	C	C	C	C	C	C
12	Hull	Critical	Hull	Critical	Hull	Critical

All slots must be filled for all columns. The entries marked A, B or C can be selected from several components, as shown below.

If there are excess A components, then these can be placed in unoccupied B slots. If there are not enough B slots, use any unoccupied C slots. Sometimes not all of a station's components can be place on the Section Hit Tables; if so, place the largest tonnage components first.

Type A		Type B		Type C	
External	Internal	External	Internal	External	Internal
Turret[1]	Bay[1]	Sensors	Computer	Refinery facilities	Other Facilities
Barbette[1]	Fuel	Launch tubes	Hangar	Other components[3]	Other components[3]
	Hold	M-Drive	Power-Plant		Command
		Spinal Weapon[2]	Spinal Weapon[2]		

[1] If the station mounts multiple but different types of this weapon (such as laser turrets and plasma turrets), they should be counted separately.

[2] If a station has a spinal weapon then it must be placed in the Internal tables for every section apart from Engineering.

[3] If a component such as laboratories or docking bays exceeds 1% of the station's tonnage, it should be placed on the Section Hit Table.

All weapons, sensors, launch tubes, hangars, computers, screens, command sections and any other component that has a role in space combat must be put in at least one slot.

ENDURANCE

Stations are able to operate for only a single month without needing resupply. So long as the local system has a Tech Level of at least 8 and is not actively hostile towards the station, it will be continuously resupplied with all the necessities requiredf. If resupply is not available or not wanted for any reason, the endurance of a station can be increased by one month for every 1% of the total tonnage dedicated to cargo.

STATION EQUIPMENT

Stations are unique in their design, function and most importantly, their equipment and facilities. The equipment presented here is intended to make space stations more functional and usable in any location.

FACILITIES

Production, construction and supply are the life blood of most civilian owned and operated space stations. Facilities allow for the movement of money and commerce coming from both inside and outside the system, thanks to the station's accessibility. The following are the types of facility available to a station and how they function.

Mineral Refinery

Mineral refineries convert asteroids into load upon load of useful metals and materials. Some are made up of individual platforms each of which contribute their own work to the completion of the operation. Others mix several aspects, but are still not the unified station thought of when most talk about mineral refineries.

Tug Drones: While a very few mining stations will move themselves from rock to rock, the sheer appetite they have for materiel often makes this infeasible. In these circumstances, stations will use tug drones to drag asteroids into their maws for processing. Armed with a mining laser to allow them to slice up the largest rocks, drones are vital to the continuing function of a mining station. On average, each drone will be able to drag 500 tons of asteroid to the mining station per day. Such a drone is 10 tons and costs MCr15. This includes the cost of the hangar and fuel transfer space to allow it to operate. They are a TL 12 design and, prior to this, collection is normally done by manned craft of similar design. Manned craft cost MCr10 and require crew and maintenance staff as normal.

Asteroid Miner: Once asteroids are found and delivered to the station, they must be crushed, the ores and other by-products sorted, and the waste released back into space. See the following table for the rate of intake and production per ton of facility, and the maximum size of the facility depending on Tech Level.

TL	Intake (per day)	Production (per day)	Max size
7	5 tons	1 ton	500
10	10 tons	2 tons	5,000
13	10 tons	2.5 tons	50,000

This produce is split between Basic Ore, Uncommon Ore, Crystals and Gems and Precious Metals at a rate of 50/30/15/5, so that for each 100 tons of produce, 50 tons is Basic Ore, 30 tons is Uncommon Ore and so on. The rate of production may be enhanced by automating the refining process although it also increases the cost per ton of the facility.

Type	TL	Production Rate	Cost
Manual	7	x1.0	x1.0
Semi-Automated	10	x1.2	x1.5
Automated	13	x1.5	x2.0

For example a 150 ton TL 7 asteroid mining plant can process 750 tons of asteroids per day, turning this into 150 tons of usable materials. This would be split into 75 tons of Basic Ores, 45 tons of Uncommon Ore, 23 tons of Crystals and Gems and 7 tons of Precious Metals.

Mineral Sifter: An item employed on some specialised mining stations which aim to produce as much of a specific ore as they can, this is actually a specialised scanner built into the mining machinery. It tags the important product as it comes in, and makes sure the facility focuses on any rubble containing that, often dumping large amounts of other less important rock rather than wasting time processing it. One of the four types of product should be chosen at the time of construction. The rate of production of the other three should each be reduced by 20%, and the chosen one's rate increased by the total amount they were reduced by. This equipment should be 2% of the total tonnage of the asteroid mining facility, and costs MCr1.5 per ton. It is available from TL 9 onwards.

For example, a mining station that chooses to focus on Crystals and Gems would reduce Basic Ores, Uncommon Ores and Precious Metals by 20% each, giving a ratio of 40/24/15/4. This gives Crystals and Gems an increase of 17, for a final ratio of 40/24/32/4.

Another station focuses on Precious Metals. The 20% reduction of the others gives a ratio of 40/24/12/5. The final ratio therefore is 40/24/12/24, a huge increase for Precious Metals.

Smelter: Ores are the normal end-product of a mining facility, but many stations conduct on board processing to create more valuable materials. A smelter allows Basic Ores to be processed into Basic Raw Materials, and Uncommon Ores into Uncommon Raw Materials. Each ton of smelter allows the processing of 0.2

tons of Ores into 0.1 tons of Raw Materials per day. A smelter costs MCr0.5 per ton and is available from TL 8.

For example, a 100 ton smelter could process 20 tons of Basic Ores into 10 tons of Raw Materials per day, or 10 tons of each type into 5 tons of Raw Materials.

Throw and Catch System: In order to save space, some mining stations mount a mass accelerator to throw ton after ton of mined metals across space. The throwing system uses 50 tons aboard the mineral refinery and can fire a ten ton slab of mined materials every 6 minutes, for a total fire rate of 2,400 tons per day. Often these slabs are coated in a thin layer of ferrous metals to enable the mass accelerator to act upon them.

The 'catch' part of the system is mounted on a separate installation, normally a storage depot with enormous cargo pods or a trade hub where the goods can be sold on. The catcher is almost a reversed thrower, with slightly different internal systems. It uses 50 tons of a station's hull. A catcher can only be set to receive inbound loads from a single point, but it can receive from multiple throwers so long as they are mounted on the same mining facility. A catcher can receive one load every minute, for a total in-load rate of almost 15,000 tons per day.

Fuel Refinery

The production of refined fuel in space has three distinct steps from start to finish; gathering unrefined fuel, refining, then storing and distributing it. Each of these requires specific machinery which performs the function efficiently. A space station with this facility must be in orbit around either a gas giant or a water world in order to function.

Scoop Drones: The gathering of unrefined materials is performed by streamlined scoop drones, flying wings with bulbous fuel bays. They fill up with gasses of giants and oceans of worlds before returning to their home station. Each drone is capable of delivering 50 tons of unrefined fluids or gasses to the station every day, to be fed into the processing plants. A drone is 10 tons and costs MCr10. This includes the cost of the hangar and fuel transfer space to allow it to operate. They are a TL 12 design and, prior to this, collection is normally done by manned craft of a similar design. Such manned craft cost MCr7.5 and requires crew and maintenance staff as normal.

Refinery: A fuel refinery takes care of the second step, a collection of high-end processing machinery which turns water and gases into starship fuel. For every ton of fuel refinery fitted, a space station is able to process 20 tons of water or gases into 10 tons of fuel every day. This equipment costs MCr0.1 per ton. This may be enhanced by automating the refining process, although it also increases the cost per ton of the refinery.

Type	TL	Production Rate	Cost
Manual	7	x1.0	x1.0
Semi-Automated	10	x1.2	x1.5
Automated	13	x1.5	x2.0

Storage: The storage and distribution of fuel is dealt with in a single step through the use of massive detachable fuel pods. Hung from the station's hull with a set of feed tubes where refined fuel can be pumped into them, these tanks provide significantly increased storage space for fuel without the cost of exponentially larger main hulls. The pods can only be used to store fuel and cannot be used to provide fuel for a ship or station's systems without some method of pumping the fuel between pod and target. These tanks use 1 ton of the station's hull for every 100 tons of fuel storage, to be used as pumps, transfer equipment and support structures for the enormous tanks. They can be detached when full and tugs used to move them around the system. They cost MCr0.05 per ton.

Manufacturing Plant

Every system needs heavy production to feed a resource hungry population and space-side manufacturing allows for that without taking up space which may be at a premium on many more developed worlds. The type of manufacturing plant is dependent on the type of product it is manufacturing. Plants come in four different types; Basic, Advanced, Specialist and Agricultural, which determines the rate of production.

Type	TL	Production Rate	Cost
Basic	7	1 ton per 10 tons of plant per day	MCr0.2/ton
Advanced	10	1 ton per 25 tons of plant per day	MCr0.4/ton
Specialist	9	1 ton per 50 tons of plant per day	MCr1/ton
Agricultural	8	1 ton per 20 tons of plant per day	MCr0.5/ton

The level of automation included in the plant can increase the rate of production significantly. Modify the daily amount produced by the multiplier given in the table below.

Type	TL	Production Rate	Cost
Manual	7	x1.0	x1.0
Semi-Automated	10	x1.2	x1.5
Automated	13	x1.5	x2.0

In addition the rate of production can be improved if certain products are manufactured in a system which meet a certain requirement. If the Bonus requirement in the table below is met then production is increased by 25% due to the easy availability of resources and supplies.

TL	Product	Type	Bonus
7	Basic Electronics, Machine Parts, Manufactured Goods	Basic	None
8	Basic Consumables	Agricultural	None
11	Advanced Electronics, Machine Parts, Manufactured Goods	Advanced	Industrial trade code
10	Advanced Weapons	Advanced	High Tech trade code
12	Advanced Vehicles	Advanced	High Tech trade code
9	Biochemicals	Agricultural	Water World trade code
10	Cybernetics	Specialist	High Tech trade code
10	Live Animals	Agricultural	Agricultural trade code
10	Luxury Consumables	Agricultural	Agricultural trade code
9	Luxury Goods	Specialist	High Population trade code
9	Medical Supplies	Specialist	High Tech trade code
11	Pharmaceuticals	Specialist	Asteroid trade code
12	Robots	Specialist	Industrial trade code
10	Spices	Agricultural	Desert trade code
7	Textiles	Basic	Agricultural trade code
8	Wood	Agricultural	Agricultural trade code
7	Vehicles	Basic	Industrial trade code

Construction Yard

Primarily used on civilian stations for the construction of small craft , this facility is a privately owned dockyard. It may be internal hangars or docking arms for zero-g construction. A construction yard can build a ship of total tonnage equal to the tonnage of the facility divided by two. The maximum Tech Level of a ship built is equal to the Tech Level of the system the station is in. See *Book 2: High Guard* for construction times. A space station with this facility can be built in any system.

RESIDENTIAL SPACE

On advanced worlds, the population will often outstrip the demand for space, and huge orbital colonies will be created. In other systems, people will live on space stations because of dangerous environments or simply because they want to. Residential spaces can fit a number of people depending on the quality of the space installed. Low quality housing (Soc 1+) allows for one person per two tons. Mid-quality housing (Soc 4+) allows for one person per four tons. High quality housing (Soc 8+) allows for one person per six tons. Luxurious housing (Soc 12+) allows for one person per 10 tons. The amount of each must be determined as the station is under construction. A space station with this facility can be built in any system.

COMMERCIAL SPACE

It is rare that a merchant ship wishes to land on a planet to do business and while transactions can be done remotely, it is better for trade to put a face on a deal. Shops, trading halls, even simply restaurants and trinket stalls, commercial space allows for traders to set up shop and make money. Commercial space comes in two types; Market Halls, which can feature stall traders and Business Arcades, which are lined with permanent business fronts and trading exchanges, where merchants ply their trade. A space station with this facility can be built in any system.

DOCKING

Stations have to have a way of connecting with ships in order to survive. There are two types of equipment which allow ships to dock with stations, one internal and the other external.

Docking Spaces

An internal bay in which a smaller ship can bay, this is to a starship what a hangar is to a small craft. Every 3 tons of docking space on a station allows a ton of starship to land inside the station. This space may be divided upon construction or left as one large open space.

Docking Arms

External arms which connect to the vital feeds on a starship, docking arms do not allow for the transfer of cargo or passengers without the use of shuttle craft. They do allow for a ship to refuel and for atmosphere to be exchanged. Each ton of docking arms allows 20 tons of starship to dock.

For example, a ship with 200 tons of docking space could only dock a 100 ton starship. However it would only take 5 tons worth of docking arms to dock the same vessel.

RE-ENTRY CAPSULES

Emergency capsules are normally perfectly safe for the escape of a crew from a stricken spacecraft. When a station is near a gravity well, however, they can become a liability as the thin skinned pods are dragged into a planet's atmosphere. Thus,

re-entry capsules have been created, escape pods with a lifting wing and guidance computer capable of bringing them from orbit down to a safe, albeit bumpy, landing. Each ton of capsules provides escape for two crew or passengers.

SHIP SCANNERS

Customs stations are not only the headquarters for patrol ships operating in a system, they also the centre of their efforts. Ship scanners are an essential piece of equipment as they allow the station to ensure any inbound vessels are carrying exactly what they say they are without having to put men aboard. They come in two different types, each with their own strengths.

Shallow Penetration

A combined thermal/EM sensor set designed specifically for hull penetration and internal scanning at long range. At a range of 50,000 kilometres, they allow the operator to ensure there is nothing unusual aboard a vessel that leaves a thermal or electromagnetic trace. For instance, they allow for the detection of increased heat production where there should be none or the operation of fire control computers on an unarmed merchant. A shallow penetration ship scanner masses 10 tons and costs MCr5. It is available from TL 10.

Deep Penetration

Using NAS and Densitometers configured to check every centimetre of a ship's internal and external hull, deep penetration scanners need a ship to be much closer to the station. At a range of 1 kilometre or less, they allow the operator to see everything about a ship that may be perceived visually such as layout, hidden spaces and make-up of anything carried be it crew, cargo or personal effects. However, they are also very slow when scanning large ships unless the mounted set is also very large. Each ton of deep penetration scanners allows for 20 tons of a vessel to be scanned every hour. For example, a 25 ton set would scan a 500 ton ship in an hour. Each ton costs MCr1 and is available from TL 13.

BREAKERS YARD

The counterpoint to the construction yard, the breakers yard takes an already completed ship and tears it into its constituent pieces. Many such yards are completely legal salvage operations but others are used by pirates to make money from their prizes. A breakers yard can take in a ship of half the total tonnage to itself. The yard breaks the vessel down into any components named in the ship's description in a number of weeks equal to the short construction time of a vessel of equivalent size (see page 72 of *Book 2: High Guard*). This includes the ship's drives, power plant, sensors, computer and weapons (including screens). These may be sold as if they were trade goods according to the rules presented in the *Traveller Core Rulebook*, but suffer DM-5 to the price roll as

they are used parts. The rest of the hull, including anything else left inside, is broken down into hull plates and sold as a single batch with the same modifier as above.

MICRO-DRONE NETS

On some military stations, micro-drone nets enhance their capabilities in one of several significant ways. Two of the most common types are detailed below. Neither of these can be used on spacecraft as the drones' drive systems are far too weak to keep up with a manoeuvring ship.

Anti-missile Net

Most often seen on defence stations, this system deploys a score of football sized drones, each equipped with a laser system and gravitic drive. A dense field of them is strung out some distance from the station, attacking any incoming ordnance such as missiles or torpedoes. These nets are used to free up hardpoints on a station that would otherwise be used for point defence turrets, allowing them to mount significant quantities of offensive weaponry. When the station is attacked by ordnance weapons, the net will make a single point defence attack against each weapon that passes it at Short range. If a barrage of such weapons is used to attack the station, they are defended against as if there was an equivalent number of point defence weapons defending against them. The net suffers DM-2 to its defence rolls if the weapons are torpedoes, due to their larger size making it more difficult for the small drones to destroy them. The anti-missile net can only defend against attacks coming from a single 45° arc; attacks from other directions will not be defended against. The net uses 1.5% of a station's tonnage and costs MCr2 per ton. It is available from TL 12.

Sensor Extension Net

Interdiction of an area of space is entirely reliant on properly identifying any ships and objects passing through that space. A sensor extension net enhances the clarity of a given sensor system beyond ranges at which it would normally be able to see by using small drones as relays for data. They are also sensor platforms in their own right, the results of their scans being channelled back through the same links. They increase the distance at which a given type of system can see Limited or Full detail by a single step. For example, a Visual sensor would see Limited detail at 25,000 to 50,000 kilometres and Full detail at up to 10,000 kilometres. The net does not affect NAS or densitometers. The net uses 0.1% of a stations tonnage and costs MCr1 per ton. It is available from TL 10.

EMISSIONS REDUCTION NETWORK

A high tech array of heat sinks, transmission dampeners and EM masks, the ERN allows a properly prepared space station to be hidden from sensor arrays for at least a limited period of time.

It cannot function properly on a spacecraft as the larger power plants and increased number of EM sources mean that even when motionless it is inefficient to mount enough equipment to hide the ship. A space station can be hidden from all sensors other than visual ones for a single hour for each 0.1% of its tonnage given over to an ERN. While the ERN is active, the station can only rely on passive radar/lidar and visual sensors as emitting any signals will ruin the effect. It costs MCr0.5 per ton and is available from TL 12.

TRAINING FACILITIES

Mercenary companies based out of space stations have a particular problem not suffered by ground based organisations. While training office workers and support units is easily done within a station, combat training is much harder to come by. For this reason, many mercenary space stations incorporate specially designed training facilities into their design with thick bulkhead walls to stop stray rounds, along with multiple gyms, prep rooms and firing ranges. This not only allows new recruits to be brought up to scratch, but also for old hands to keep their eye in. 2.5 tons of training facilities should be installed for each member of the unit intended for combat. This costs MCr0.2 per ton and is available from TL 10.

DEEP SPACE COMMUNICATIONS SYSTEM

The longest delay in the X-boat network, other than the week long jump, is the time it takes for the real space transfer from the 100D limit to a hub station. In some cases, the hub station can work around this by using a high capacity inload/outload network capable of transmitting the huge reams of data necessary for outbound trips directly to the X-boats and the mail pods they carry. So long as the X-boat is not carrying physical cargo and mail in need of delivery, it need not visit the hub station, and can exchange information from anywhere in the system in relatively short order (accounting for time lag on data transfer occurring at the speed of light). Instead, it can refuel and move on immediately. This system is available from TL10, is 500 tons and costs MCr100.

At TL12 the system has undergone enough refinement to only use 250 tons and cost MCr50. An advanced version is available

from TL13 which only uses 150 tons but costs MCr100. The communication system functions as a facility for the purposes of determining crew numbers.

Send/Receive Rig

Normal ship communications systems cannot handle the data loads necessary for dealing with mail on the scale that the X-boat network requires. Instead, most X-boats and similar ships will mount a specialised communications array specifically for handling these data streams. Such a system is available from TL10, is 50 tons and costs MCr20. An advanced version is available from TL 13 which only uses 20 tons and costs MCr10. This system is needed to properly link up with the deep space communications system.

Station Equipment Summary

Component	Type	TL	Cost
Tug Drones	Internal	12	MCr15
Asteroid miner	External	7	MCr0.25/ton
Mineral sifter	Internal	9	MCr1.5/ton
Throw/Catch system	External	8	MCr2.5
Scoop Drones	Internal	12	MCr10
Fuel refinery	External	7	MCr0.1/ton
External fuel tanks	External	7	MCr0.05/ton
Construction yard	External	7	MCr0.5/ton
Residential space	Internal	8	MCr0.1/ton
Commercial space	Internal	8	MCr0.15/ton
Docking spaces	Internal	8	MCr0.25/ton
Docking arms	External	7	MCr0.1/ton
Re-entry capsules	Internal	9	MCr0.15/ton
Shallow penetration ship scanner	External	10	MCr5
Deep penetration ship scanner	External	13	MCr1/ton
Breakers yard	External	7	MCr0.5/ton
Anti-missile net	Internal	12	MCr2/ton
Sensor extension net	External	10	MCr1Mcr/ton
Emissions reduction network	Internal	12	MCr0.5/ton
Training facilities	Internal	10	MCr0.2/ton
Deep space comms system	Internal	10	MCr500
Send/Receive Rig	External	10	MCr50

COMBAT AND OPERATIONS

Vulnerable and almost immobile, stations are never a system's first line of defence in the event of war coming to local space. Despite this, they are occasionally dragged into a fight and several defence stations have surprised warship commanders with how much punch they can pack into small hulls. What follows are several minor modifications to the space combat rules when engaging space stations.

FIRING UPON STATIONS

Unfortunately (or fortunately, depending on whether you are the one doing the shooting or not) space stations carve out very predictable orbits constantly and only very can change their orbits significantly. This makes firing upon them a very simple proposition for approaching warships, even from outside normal engagement ranges. Attacks against a station that does not have a Non-Orbital Manoeuvre Drive gain several bonuses depending on what weapon is attacking:

Energy weapons (including beam lasers, pulse lasers, fusion guns, plasma guns, particle beams and meson weapons) treat the range to the target as one less than it actually is, to a minimum of Short range. They may attack at ranges one band beyond that which they would normally be able to attack. For instance, a beam laser could attack a space station at Distant range, or it could attack a target at Long range with DM+0, treating the target as if it were at Medium range.

Ordnance weapons (including any type of missile or torpedo) can attack at any range regardless of their normal endurance, continuing with their final speed until they strike or miss. However, if these weapons are used to attack targets outside ranges permitted by their normal endurance, point defences gain DM+2 as the targets are on ballistic non-variable courses.

Railgun weapons are normally constrained by the ranges at which they are likely to hit a target that is manoeuvring. Against stations, as with planetary targets, they are much more useful; railguns can be used at any range up to and including Very Distant. However, they suffer a cumulative DM-2 for each range band they exceed beyond Medium due to the additional precision and timing used at such ranges. For example, a railgun bay could fire on a target at Long range with DM-2, or a target at Distant range with DM-6.

Space Stations that mount a Non-Orbital M-Drive are treated in combat as spacecraft as they rarely maintain regular paths and can even manoeuvre in combat if necessary.

SYSTEM DAMAGE

While mostly being treated as ships when in combat combat, there are several additional components and effects unique to space stations detailed below. Due to the nature of most stations being more dispersed than spacecraft, section hits due to barrages only inflict system damage on a roll of 9+.

Bridge
First Hit: A bridge hit prevents the station from firing at any targets beyond Close next round.
Second Hit: The bridge is destroyed. Command automatically transfers to another section if one is available, but the station's initiative is halved.

Refinery Facilities
First hit: Reduce facility output to 50%.
Second hit: Reduce facility output to 10%.
Third hit: Refinery is disabled, putting it out of action until repaired.

Manufacturing Facilities
First hit: Reduce facility output to 50%
Second hit: Reduce facility output to 10%
Third hit: Manufacturing facility is disabled, putting it out of action until repaired.

Manoeuvre Drive
A single hit on a station's manoeuvre drive reduces its Thrust to 0 until repaired. Its orbit will immediately begin to decay unless it is a Non-Orbital station. See the Critical Hit table for details.

Power Plant
The first and second hits to a station's power plant are the same as for any spacecraft. However, the third hit will cause the station's orbit to immediately begin to decay unless it is a Non-Orbital station. See the Critical Hit table for details.

Critical Hit
If a section suffers a critical hit, something has gone drastically wrong. Roll 1D on the Critical Hit table.

1D	Critical Hit	Effect
1	Power Failure	The section goes offline. Weapons and components in the section cannot be used next round.
2	Structural Failure	A whole section of the station shears away. Reduce the remaining Hull of the section by 50%. If no Hull remains, reduce the remaining Structure by 50%.
3	Hull Breach	Repairs cannot be conducted on this section for one round as repair crews need to fix the hull breach. This also inflicts a Crew Hit. A self-sealing hull means the breach is automatically fixed so repair can take place immediately.
4	Internal Explosion	The explosion inflicts 3D% Structure damage and another Section Hit.
5	Fire	Fire suppression systems fail and an inferno rages through the section. The crew must roll Engineering 8+ to put the fire out next round or it will inflict another Section Hit. If not put out the difficulty increases rises by +1 each round. At 12+, the fire spreads to an adjacent section, starting at 8+ there. If fuel is stored in this section as metal hydride, the Engineering difficulty is reduced by -2.
6	Degrading Orbit	Something has gone horribly wrong and the station is falling slowly towards the planet. For Non-Orbital stations this means little. Geosynchronous and Geostationary stations will take anywhere between a week and several months to degrade, meaning that while repairs are not an immediate concern they will eventually begin to drop into the planet's atmosphere. The real threat is posed to low level orbits such as those found on Orbital stations. When an Orbital station suffers from this Critical Hit, roll 1D. The result is the number of hours after which the station will become non-recoverable as it drops toward the planet below. If the station's orbit is degrading due to damage to the power plant or manoeuvre drive failing then repairing these will bring it back into a stable orbit. If the degradation is solely due to a Critical hit then the orbit can be restored if the crew rolls Engineering or Pilot 10+ on three consecutive turns. Failure will see the loss of the station as it re-enters the atmosphere. Abandoning the vessel is the only hope for the crew and other occupants.

SPACE STATION CREWS

A station often has a smaller, less specialised crew than a capital ship. Even so, they are too many to be tracked individually and are measured by two characteristics.

Crew Strength

The size of the crew relative to the station is measured on the Crew Strength scale. An under strength crew may still be able to operate the station but will suffer penalties to checks and act more slowly in response to changing events. An over strength crew gives no bonuses but is capable of absorbing more casualties.

If a station is noted as being able to fire once every two or more rounds, this applies to each individual weapon. For example, a station armed with a beam laser bank, a missile battery and a plasma barbette bank could fire its missiles and beam lasers, saving the plasma barbettes for the following round when it could not fire the missiles or lasers.

Crew Skill

A station crew is assumed to have average to good characteristics and to have mastered the following skills; Gunner, Mechanic, Engineer, Sensors and Medic. All these skills are at the level of their Crew Skill characteristic. Obviously, some individual

Crew Strength	% of Full Crew	Skill CheckDM	Special
Dead	0%	–	Cannot act
Survivors	1% to 15%	-4	May only fire once every five rounds
Skeleton	16% to 30%	-2	May only fire once every three rounds
Half	31% to 60%	-1	May only fire every other round
Weakened	61% to 90%	+0	
Full	91% to 120%	+0	
Over Strength	121%+	+0	

crewmen will have greater or less skills, but the average is the Crew Skill and is used for all checks made by the crew.

A crew may have an especially skilled officer. If the officer has a skill level of 4 or more, they grant DM+1 to all checks using that skill. An officer may only give a bonus to one skill roll in each round, and a skill may only benefit from one officer at a time.

STARPORT GENERATION

While most space stations have a primary purpose they perform admirably, they can also function as docking facilities and cargo transfer ports. The line of characteristics originally presented in *Starports*, when slightly modified, can be applied to a space station. This is especially useful for trade hubs which essentially function as a starport in their own right.

Space Station Characteristics

While a starport is defined by its modules, a space station is defined by how its internal space is allocated and this determines everything from the number of ships it can berth to the type of repair work it can provide. This gives players and referees a fast and effective way of determining what a station has to offer, the cost of those services, and what sort of wait can be expected before they are available. A list of these characteristics and an explanation of what each means is provided here.

Docking Fee: A dual characteristic, the first score is the initial docking fee, while the second is applied for each day after the first the ship in question remains docked. Most docking fees are standardised according to Imperial norms, though some independent operations will vary their charges according to the market. The following table lists standard docking fees, defined by the class of the local starport and whether a ship is berthed inside the station or docks to its exterior.

Starport Class	Internal	External
A	Cr2,000/Cr500	Cr1,000/Cr250
B	Cr1,000/Cr200	Cr500/Cr100
C	Cr200/Cr100	Cr100/Cr50
D	Cr40/Cr10	Cr20/Cr10
E	Cr100/Cr25	Cr50/Cr20
X	Cr200/Cr50	Cr100/Cr50

Note that these are standard charges no matter the size of the ship coming into dock. Independently run stations may well levy a higher charge for larger vessels.

Berthing: This is the total amount of space, measured in tons, that the port has available for the berthing of ships. This is acquired through the purchase of docking bays and arms. When the station is constructed, docking spaces can be divided into specific spaces for Small Craft (10-99 tons), Starships (100-5,000 tons) and Capital Ships (more that 5,000 tons).

While it is possible to dock a small craft in a berth designed for a larger vessel, this is not an efficient use of space.

For example, a space station has 50,000 tons of docking facilities, broken up into 30,000 tons of space for Capital Ships, 10,000 tons for Starships and 10,000 tons for Small Craft. Therefore when calculating the waiting time and space available for docking, this space station could take 50,000 tons of Small Craft, 40,000 tons for Starships and 30,000 tons for Capital Ships.

Fuel: This can be a dual score on stations with fuel refinery facilities. The first score is the cost of a single ton of unrefined fuel, while the second is the cost of a single ton of refined fuel. On other stations which have fuel reserves for docked ships but no refinery facilities, only refined fuel is available and so that will be the only price listed.

For the purposes of determining waiting times for refuelling, docking arms grant 20% of their total tonnage, while docking bays grant 50% of their total tonnage.

For example, a space station with 20,000 tons of docking arms and 10,000 tons of docking bays gives a refuelling tonnage of 9,000 tons when determining waiting times.

Warehousing: This is the amount of space, measured in tons, which the station has allocated to cargo bays not used for production or maintenance supplies.

Store Cost: This is the standard fee charged to store one ton of cargo for one week. See the following table for costs, dependant on the class of the local starport.

Starport Class	Storage
A	Cr1,000
B	Cr500
C	Cr250
D	Cr100
E	Cr50
X	Cr100

Repair Facilities: This entry details which types of ship damage can be repaired at the station, and the maximum vessel size which the station is capable of repairing.

Any station with internal docking bays can repair Hull damage. Only Shipyards are capable of repairing system and Structure damage while the ship is still in space.

Note that the entry Systems refers to the complete removal and replacement of a destroyed system, rather than a temporary repair which can be accomplished at any station able to repair Hull damage.

SPACE STATION CHARACTERISTICS PROFILE

A blank Characteristics Profile appears as follows.

DOCKING FEE:

BERTHING	WAITING TIME
Small Craft: _____	Small Craft: _____
Starships: _____	Starships: _____
Capital Ships: _____	Capital Ships: _____

FUEL COST:	WAITING TIME
	Small Craft: _____
	Starships: _____
	Capital Ships: _____

STORAGE COST:

REPAIR FACILITIES	WAITING TIME
Small Craft: _____	Small Craft: _____
Starships: _____	Starships: _____
Capital Ships: _____	Capital Ships: _____

WAITING TIME

When determining the assets available to a space station, it is also important to determine the waiting times suffered by any vessel wanting to make use of those assets. For example, Berthing Waiting Time is the length of time a ship needs to wait until it is able to dock with the space station and for work crews to be ready to ensure adequate connections between ship and station.

Waiting time is always represented by a die roll and in many instances there are modifiers that need to be applied. If the modifier reduces the result to 0 or less, then there is no waiting time and the service is available immediately. If the result is 1 or more, the table below gives the delay depending on the final result.

Result	Waiting Time
0	Service available immediately
1	1D minutes
2	1Dx10 minutes
3	1 hour
4	1D hours
5	2D hours
6	1 day
7+	1D days

For example the Herod's Hope, a 1,000 ton Heavy Freighter, comes into orbit around a planet that also has a trade hub present, and they request permission to dock. The trade hub has 10,000 tons assigned to docking Starships (as opposed to Small Craft or Capital Ships). The waiting time is therefore 1D-2.

The referee rolls and the result is a 5. Applying the -2 modifier gives a final result of 3, a waiting time of 1 hour. Space around the hub must be particularly busy right now. An hour later, the freighter proceeds to dock.

Three days later, the ship is ready to leave and so the referee makes a second roll. This time the result is 2, with a final result after the modifier is applied of 0. The Herod's Hope is free to depart the station immediately.

Assigning Waiting Times

Referees may wish to assign waiting times to stations they have designed according to the table on the left. This is done by checking the total tonnage assigned to each service against the table and will give the die roll and its modifier.

Waiting Time Modifiers

There are two main impacts on waiting time outside of space allocated to them by the space station. The first is the vessel's

size, as larger ships have to await enough space and small ships can tuck into gaps left by their more resource intensive cousins. The other is choice of berth, whether it is external on docking arms or internal in a docking bay.

Small craft are easy to accommodate and require less resources to service. Therefore they benefit from DM-1 to waiting times.

Space craft, those of up to 5,000 tons, are the most common vessels seeking service from a space station. There is no modifier to waiting times for ships of this type.

Ships of over 5,000 tons place significant demands on any port as they require large docking facilities, huge amounts of fuel and cargo transfer equipment and also take a long time to manoeuvre into and out of the station's traffic control areas. There is DM+1 on waiting times for capital ships.

Docking bays, where ships find a berth inside the station, are much less common than docking arms due to the amount of space necessary for docking vessels within the station's hull. Traffic control is also much more difficult because of the exact guidance needed for manoeuvring a large vessel into a very small space. There is DM+1 on berthing waiting times when using docking bays.

When a ship comes in to dock with a station equipped with docking arms, it is usually a simple case of aligning two airlocks. Due to this, even large ships can dock with significant speed. There is no modifier on berthing waiting times when using docking arms.

Tonnage Assigned						
Service	0-500	501-1,000	1,001-3,000	3,001-10,000	10,001-50,000	50,000+
Berthing	1D-1	1D-2	1D-2	1D-3	1D-4	1D-5
Refuelling	1D	1D-1	1D-2	1D-2	1D-3	1D-3
Warehousing	1D+1	1D	1D-1	1D-2	1D-2	1D-3
Repairs	1D	1D-1	1D-2	1D-2	1D-3	1D-3

SPACE STATION GENERATION

Space is littered with stations. Almost as soon as a culture can put a rocket into near-orbit, they begin throwing up stations to circle their worlds. The first are delicate, barely functional craft which support only a handful of life-forms. As the culture advances, these platforms become larger, more capable and eventually split into a variety of specialised structures. Many highly advanced systems will be crowded by stations that cover every aspect of space-based infrastructure. The following rules can be used to generate important stations present in most systems.

Each of the following tables allow for the generation of a number of space stations, be they naval, scientific or other. When generating a system's space stations, the referee should roll on one, several or all of the following tables to determine the number of stations present.

NAVAL

Many systems contain at least one naval station that can act as anything from a system defence post to local military headquarters. There are four types of naval station; Fleet, Defence, Interdiction and Shipyard.

The referee should roll 2D and apply the following modifiers to determine the number of naval stations present in a system.

- +2 if the system contain an A or B class starport
- +1 if the system has a population over 5, +2 if the system has a population over 8
- +1 if the system has a TL of 12 or higher

2D	Naval
2-10	0
11	1
12	2
13	1D
14	1D+2
15	2D
16	3D
17+	4D

Defence

Defence stations can be both the largest and smallest stations found in a system. Well-armed and armoured, a defence station is the equal of any warship of similar tonnage. The smallest are normally simple weapon satellites, sometimes slaved to a targeting system on a larger platform. The largest mount hundreds of bays and are often built around a spinal weapon, much like any capital ship would be.

Defence stations are built in groups to defend strategically important areas. Some systems may have a dozen of these stations in orbit around their main world, while others will scatter them throughout space in the hopes of catching an invading force unawares. In any case, it is rare to see a single defence station in operation unless the system's military infrastructure is incomplete or under construction.

Fleet

Large by necessity, a fleet station must be capable of docking and servicing the biggest warships a system can build. For some systems, this may only be a few thousand tons but for others a fleet station may have to deal with multiple dreadnoughts simultaneously. A very few are armed beyond a basic point defence system, but most rely on the fleet to deal with external threats. It is common for fleet stations to double as command centres, where the highest ranking officers of the navy gather to discuss strategy on a grand scale.

The centre of a system's military power in space, fleet stations are some of the rarest. The only time there will be more than one is if a system wants to scatter its bases for defensive purposes, or if they simply cannot build a large enough station to handle the fleet. It is more commonplace to find a centralised fleet station and have other needs met by tanker ships and the like.

Interdiction

Most often found in under-funded systems, interdictions stations are a development of defence stations. Instead of mounting significant weapon batteries, they use the space to fit large hangars filled with small scouting and attack craft. Much like the fleet station, the interdiction station is unlikely to be heavily armed itself, though some mount a few bay weapons to defend themselves.

When a well-equipped interdiction station is sited properly, squadrons of fighters can be used to patrol large volumes of space or can be launched to protect the system at a moment's notice. Many systems will use several scattered around their most valuable assets, a more common usage than building one huge base.

Shipyard

One of the simplest naval stations in concept and yet one of the most important to any fleet, the shipyard is responsible for the construction and maintenance of every ship based locally. Most of the station is made up of construction yards with huge gantries and bays spreading across space. Internally, there are more hangars, as well as work crew living spaces and control decks which co-ordinate everything. On many shipyards, the internal space is much smaller than the yards themselves, compressed as much as they can be to give more building capacity.

The largest shipyards can build tens of frigates simultaneously while some can even build more than one dreadnought at a time. Many smaller systems maintain what some consider to be insignificant shipyards to support their own forces, though they can also be used to support sector fleets in times of war with spare parts and small craft.

PARAMILITARY

Some larger organisations, especially scouts, run their own space stations for a variety of purposes. Few of these stations mount significant weaponry and none can rival a naval station for capabilities. There are three types of paramilitary station; Customs, Mercenary and Scout.

The referee should roll 2D and apply the following modifiers to determine the number of paramilitary stations present in a system.

- +1 if the system contains a C class starport, +2 if the system contains a D class starport
- +1 if the system's Law Level is 4 or below
- -1 if the system has a TL of 12 or higher, -2 if the system has a TL of 15 or higher

2D	Paramilitary
0-8	0
9	1
10	2
11	3
12	1D
13	1D+1
14	1D+2
15+	2D

Customs

Almost every inhabited system is patrolled by customs vessels instead of the navy, and every one of these ships has to be supported and resupplied. Dedicated customs bases are a rarity, with most groups operating from civilian stations with whom they have supply contracts. Where this is not possible, the local government sometimes builds a station which can maintain contact with all local customs vessels, hold important information on smugglers and act as supply base for the long endurance cruisers which circle the system constantly.

It is a busy system that has more than one customs station. The largest will have one on each of the marked inbound trade routes, acting as a checkpoint. More average systems will have a single station with powerful communications systems in orbit around the main world, co-ordinating and organising anti-smuggling efforts of the customs ships.

Mercenary

Mercenary stations are a strange hybrid in their design. Not only do they have to function as a military headquarters for the group, they are also bases and must be capable of defending themselves. Therefore, they fit enough weapons and armour to make them dangerous enough to ward off enemies. They must also have enough barracks, garage and hangar space to hold a significant portion of the company's assets, and need the equivalent of large office spaces for administration of the company. Often cramped and built to the smallest available budget, they are not nice stations to live in, but are functional.

Unsurprisingly, only the largest mercenary companies can afford to run a space station as their headquarters. Most have multiple large scale units operating at any one time, bringing in profits that enable such a structure to be maintained. As such, mercenary stations are some of the very rarest to be found in space, and will only be discovered very occasionally in any system.

Scout

While many scout bases are planet-bound, some and especially those in the harsher systems or those without significant planetary bodies, are purpose-built stations. These bases are home for scouting groups when they return from operations and so have significant hangar and living spaces built into them. Some of the largest have maintenance yards and R&R facilities to keep the fleets of scouts ships and their crews running at full capacity. Few are lucky to be based on the larger stations though, and most have to live on smaller, grimy, and uncomfortable stations, though few complain given the comparison to the ubiquitous Type S they may spend the rest of their lives aboard.

Scout stations are built to watch over a small cluster of systems, independently of other support networks. Therefore, finding more than one in a single system indicates either a location very important to the scout service or an area interesting to them for other reasons.

COMMERCIAL

The majority of developed systems rely heavily on interstellar trade to survive, with only very few being entirely self-sufficient. Commercial stations supply everything from raw materials to advanced machinery and equipment, depending on just what type of station they are.

- Asteroid mines will be present if the system contains an asteroid belt.
- Manufacturing plants may be present in any system but a system with the Industrial trade code greatly increases their presence.
- Refineries will be present if the system contains a Gas Giant or Water World.

The referee should roll 2D and apply the following modifiers to determine the number of commercial stations present in a system.

- +1 if the system has a B or C class starport, +2 if the system has an A class starport
- +2 if the system has the High Population and/or Industrial trade codes

2D	Commercial
2-9	0
10	1
11	3
12	1D
13	2D
14	3D
15	4D
16+	5D

Asteroid Mines

These mines orbit among asteroids, their tugs dragging rocks into gaping maws. Most of their internal volume is given over to processing facilities and cargo bays for the end products, though most prefer to offload onto cargo ships even as mining continues. Docking arms and transfer equipment is of the utmost importance to allow cargo vessels or their shuttles to transfer materials from the station.

Some systems which are replete with asteroids can have dozens of mining stations ranging from tiny platforms of only a few hundred tons up to enormous installations as large as battlecruisers. Everything depends on access to raw materials and the presence of trade which keep the stations in profit.

Manufacturing Plants

Many systems that contain heavy industry expand it significantly by putting factories aboard orbital stations. With the ubiquity of easy surface to orbit travel at higher Tech Levels and the often seen growth in environmental protection movements, orbital factories become a cheap and easy option for solving numerous issues. Most stations of this type are relatively small and focused on a single type of production but some can carry a production chain from raw resources through to the most advanced constructs.

Only a very few highly developed systems have more than a couple of focused production stations, although some industrial systems have clusters of busy factories strung throughout their orbits. Many more are found orbiting near trade stations where they can sell their produced goods for high profits.

Refineries

The central part of an important supply chain, fuel refineries are reliant on the presence of gas giant or local water supply, just as starships are reliant on refineries to keep them flying. Aboard these stations, the actual refinery section is relatively small while most of their structure is taken up by huge fuel tanks with which they supply passing traffic. Living spaces are tucked between vital machinery and hangars for the station's scoop-craft, as are the necessary electronics and command decks.

As fuel refineries are rarely economically viable as a private investment, most are built and run by local governments. There being more than one in a system represents either very high levels of passing trade or each being deployed to supply a different aspect of local traffic such as naval, commercial and civilian vessels.

CIVILIAN

Scattered among the war-bases, pirate hideouts and asteroid smelters are civilian stations, both privately owned and government contracted. While the varieties are impossible to quantify most can be defined into a few broad categories. There are three types of civilian stations; Habitation, Research and Trade Hub.

The referee should roll 2D and apply the following modifiers to determine the number of civilian stations present in a system.

- +1 if the system has a B class starport, +2 if the system has an A class starport
- +1 if the system has a population over 7
- +1 if the system has a tech level above 12

2D	Civilian
2-9	0
10	1
11	3
12	1D
13	1D+3
14	2D
15	2D+3
16+	3D

Habitation

Some systems are so lacking in surface space, so inimical to life or so overpopulated, there is a real need for more habitable space. Habitation stations are orbital cities, packed to the bulkheads with everything from slums to spacious apartments. Apart from their small drives and crew spaces, many also have expansive hangars for the population's small craft, commercial facilities to supply goods and luxuries, or even manufacturing plants or hydroponic farms to make an effort towards being just a little self-sustaining.

In more well-developed systems, habitation stations are not rare though the largest are much less common than tiny homestead-style stations populated by only a few hundred people. With only one reason for their existence, there is not much variation in general design, even if shape and layout is likely unique.

Research

Built with one aim in mind, that of scientific advancement, research stations make for odd structures. Packed to their limits with laboratories, living space, and testing areas, they still manage to be some of the cheaper stations being built. Many are modular and configurable to allow for almost any experimentation, design or construction to take place. A few even have dock space for constructing prototype spacecraft.

Most research stations are small, constructed for a dedicated purpose and more often than not re-purposed into something else when the research they were designed for is complete. Some, however, are much more generalist in nature and operate for decades. Others are much larger still, and multiple projects are run on them at the same time. Systems may have many research stations scattered throughout their space if they have a strong scientific sector or the system is scientifically peculiar.

Trade Hub

The centres of civilian commercial traffic in any system, trade hubs are extensive starship docks attached to commercial facilities where traders can visit and barter for goods. Huge sections of their internal volume is taken up by hangars and cargo warehouses for storing ships and thousands of tons of cargo that move through these stations every month. Some have extra habitable spaces for transient crews that make up much of the station's foot traffic, as well as brokers and merchant captains looking for deals.

Trade hubs are everywhere in higher traffic systems and most systems will have at least one over every inhabited world, even if it orbits alongside a high port. Even the smallest, newest systems will have one to deal with any exploratory traders that may pass through on the off chance the system has high profit goods. A system that does not contain just one of these stations is either uninhabited, so low tech as to be unable to trade with other systems, or severely lacking in trade goods.

IMPERIAL

Under Imperial Law, while a planet is the domain of the local governor, space is the Imperium's to do with what it will. A select few systems contain stations built, crewed and maintained by the Imperium. There are three types of imperial stations; Imperial Navy, Imperial Consulate and X-boat Waystation.

The referee should roll 2D and apply the following modifiers to determine the number of imperial stations present in a system.

- +1 if the system has a B class starport, +2 if the system has an A class starport

2D	Imperial
2-11	0
12	1
13	1
14+	2

Imperial Navy

A few strategically important stations are defended not just by their own system navy but also the warships of the Third Imperium. Others act as staging posts or supply depots. The stations maintained by the Imperial Navy are often huge structures which can handle the entirety of a small fleet at any one time. Docks, supply stores and even hangars for small craft make up the majority of their mass. Many contain R&R or medical facilities for crew on leave or returning from combat. A few, and normally only those near what the Imperium considers to be more dangerous areas, double up as bases for marines and much of their mass is used for barracks, armouries and 'morgues', the areas set aside for the storage and maintenance of battledress.

In some areas, Imperial Navy bases are not especially rare but the further a traveller gets from core systems, the less common they become. There is never more than one in a single system and sometimes only a handful in an entire sector.

Imperial Consulate

While navy stations are the symbols of the Imperium's brute strength, consulates are its quiet threat. Normally very small, these stations are for the most part offices for the administration of the affairs of local Imperial interests, and assisting citizens in need. These are wrapped around a minuscule engineering and crew section. Some of these stations are built to be self-sufficient but most rely on the goodwill of the local population to keep running. With the station being the territory of the Third Imperium, it is rare that anything untoward happens to it or its supplies.

Consulates are not rare, at least compared to other types of Imperial station. Most sub-sectors contain at least one to ensure all citizens are well-catered for. Occasionally, they are found in non-Imperial space to make ensure travellers to systems held by other powers are safe.

X-boat Waystation

Consulates and navy stations may keep the Imperium safe and observed, but the X-boat waystations tie everything together. A mix of space dock, fuel refinery and organisational office, the x-boat waystations range from tiny outposts to huge stations that act as hubs for the entire network. Powerful transmitters handle massive amounts of data which is then sorted by banks of computers and transferred into mail tanks to be shipped on long range x-boats. There are sleeping areas for visiting crews but, considering the constant work of the network, these are kept basic and are intended to be a change of scenery rather than R&R facilities.

X-boat waystations are to be found everywhere there is space for them. Each will service the cluster of worlds around it and will be at the edge of the range of another's ships. Keeping the network running is vital, and occasionally more than one waystation can be found where traffic is particularly heavy.

PIRATE

A significant number of systems contain a hidden space station frequented by criminal elements. Many have been operating for years, much to the displeasure of local authorities. There are three types of pirate station; Pirates' Paradises, Smugglers' Havens and Wreckers' Yards.

The referee should roll 2D and apply the following modifiers to determine the number of pirate stations present in a system.

- +1 if the system has a B, D or E class starport, +2 if the system has a C class starport
- +2 if the Law Level is 0, +1 if the Law Level is 1 or 2

2D	Pirate
2-9	0
10	1
11	1
12	2
13	2
14	3
15	3
16+	1D

Pirates' Paradise

A pirate has raided a ship, sold its cargo, and now they are on the run. So where do they go? A pirates' paradise is a mixture of star-dock and space-side hotel, supplied with necessities and luxuries by the very pirates that hide within its bulkheads. Stuffed with living spaces, bars, gambling establishments and other venues of less than perfectly moral entertainment, there is no mistaking the purpose of these stations.

They are rarely anything other than tiny. Those that can dock more than a few hundred tons of ships at a time are an absolute rarity. They are cobbled together from scrap, junked parts and sometimes the old hulls of larger starships, and will rarely last for more than a couple of years before a lucky customs ship or scout survey vessel chances upon their position. Pirates' paradises are a prime target for any agent of justice, as they represent a chance to catch more than one pirate at a time. A vulnerability perhaps, but the chance to get off a cramped little pirate ship and into a bar is usually more than enough incentive to stay.

Smugglers' Haven

Hiding cargo is not hard. A tagged net filled with crates and slung out the cargo hold will stay in the same place so long as nothing hits it. However, sometimes a cargo needs storing for significant periods of time, or is overly large or may require an atmosphere. Smugglers' havens are cargo dumps hidden among asteroid fields. Huge cargo bays fitted with enough weapons to drive off raiders, they make a fine prize for anyone who can capture them, as the bays which take up most of their mass hold great treasures and valuable cargoes.

Havens are often bigger than many civilian starships, massing more than a few thousand tons. They have dock space as well as cargo bays to allow pirates to drop off cargoes, before moving on to their next target. They rarely get as big as capital ships, however, as many pirates storing their cargo near one another will often lead to infighting and conflict.

Wreckers' Yard

To the enterprising criminal who specialises in starships, disposing of the spoils is the trickiest part of the job. Amalgamations of station, dockyard and construction site, wreckers' yards will take licensed and marked starships, and turn them into blank slates and salvage. Often left without crew for months at a time, the station is mainly taken up by either airtight or space-side docks used in the wreckers' trade. Sometimes they double as hiding places with expansive crew sections, but more often than not the crew is transitory.

The majority of these stations are tiny rigs, built to accept only a few hundred tons of ships, but in less salubrious systems they may be much larger. One was once found capable of taking even the merchant super-freighters, indicating a level of piracy beyond that normally found. Their locations are never marked on starmaps and co-ordinates are known only to a select few in the system they are present in.

STATION SIZE

The following table gives an easy method for determining the size of stations present in a system as generated above. If the referee wishes, he can use it to provide a sense of the scale of any station and should roll according to the type of station as explained below:

- For naval stations the referee should roll 2D on the table with DM+4 for fleet and shipyard stations.
- Paramilitary are generated using 1D with DM-1 for mercenary stations due to their limited size.

- Commercial stations use 2D on the table with DM-2 for all types.
- When generating civilian stations, the referee should use 1D with DM+3 for trade hubs.
- Imperial stations are smaller than many others and use 1D unless they are Imperial navy stations whereupon they should be rolled on 2D+5.
- Pirate bases are rolled on 1D for all types of station.

Roll	TL	Tonnage
0	7	0-99 tons
1	8	100-299 tons
2	8	300-999 tons
3	9	1,000-1,999 tons
4	9	2,000-4,999 tons
5	10	5,000-9,999 tons
6	11	10,000-49,999 tons
7	12	50,000-99,999 tons
8	13	100,000-499,999 tons
9	14	500,000-999,999 tons
10	15	1-4.99Mtons
11	15	5-9.99Mtons
12	16	10-49.99Mtons
13	16	50-99.99Mtons
14	17	100-499.99Mtons
15	17	500-999.99Mtons
16	19	1,000-4,999Mtons
17	20	5,000Mtons +

MAINTAINING TRADE

To build a station is not enough; it has to be established, crewed and efficiently maintained before it will turn a profit. Below are all the details needed to ensure that the building of a station is legal and efficient in any star system.

CONSTRUCTION AND CREW

Emplacing a civilian space station is not as simple as running a new starship. While military and governmentally-supported stations enjoy few restrictions, private station construction is often severely limited. Each station is another permanent hazard in space that could one day become a dangerous obstacle, and so many systems require reams of monotonous paperwork to be filed and permits to be gained before construction can go ahead. An Admin check is required to apply for a with the following modifiers.

- The character's Intelligence or Social Standing DM
- + the system's Population score
- - the system's Law Level

If the check is failed, the character does not receive a permit to construct a station. Perhaps they can move to a different system and try again there. If they succeed, then they have full permission to go ahead with construction.

Many stations require a very well-trained crew to keep it in position, direct local traffic and ensure nothing goes wrong with its functioning. After all, a station that is prone to mishaps will not see much business. A crew is often found before construction goes ahead, even though it may be several years before the station is fully active. An Admin check is needed to bring a crew on board, with the following modifiers applied.

- The character's Education or Social Standing DM
- If the system's TL is 3 higher or lower than the stations, then the check suffers DM-3
- If the system's TL is 6 or lower, then crew must be shipped from outside the system and check roll suffers DM-5
- + the system's Population score, unless the TL is 6 or lower

If the check is failed, then a sufficiently capable crew cannot be found, and the character must wait at least a month before trying again. If they succeed, they have a fully competent crew on their books and the station will be looked after competently. The following table gives the Crew Skill level based on the Effect of the Admin check.

Effect	Crew Skill
0	0
1-2	1
3-4	2
5	3
6+	4

Construction Time

Stations, both civilian and military, are built either by a construction yard and towed to location or built on site by massive construction dreadnoughts and work crews, often drawn from the planet below. If the first option is, which is normally only chosen if there are already facilities in the system, stations are built at a rate of 1 week per Mcr5.0 of cost. The second option is normally used for particularly important, secretive or large space stations, or those built in systems where there is no existing infrastructure. These will be built at a rate of 1 week per Mcr .0 of cost due to the delays in waiting for shipped materials and crews.

MAKING CONNECTIONS

Once construction is completed, the next step is to successfully embed the station in the system's commercial organisation. If a station is producing goods, then buyers have to be found. If it is a commercial or residential facility, the station must be filled with traders or people.

Refineries

In most systems, it is required that those undertaking large scale mining or skimming operations have a license to do so. A character should make an Admin check and apply the following modifiers.

The character's Intelligence or Education DM
-2 if they are trying to skim fuel from an inhabited water world.

If the check is passed, the character can begin operations and manufacturing a product to supply the rest of the system with fuel or minerals.

Manufacturing Facilities

A factory cannot function without one vital ingredient; raw materials. Each of these must be sourced from within the system if the space station is ever going to make profit.

Sourcing raw materials (as raw as they may be for advanced construction) is similar to finding a supplier when trading. Note that this check does not have to be undertaken if the owner is going to source more basic matériel from an already owned station in the same system. The character should make a Broker check and apply his Education or Social Standing DM.

Success means a supplier has been found. Failing means a supplier cannot be found for the first month of operations and can only be attempted again after a month. Next comes arranging the deal; the character should make a Broker check and apply the following modifiers.

- The character's Intelligence or Education DM
- +2 if supply is for a basic manufacturing facility
- -2 if supply is for a specialised manufacturing facility
- -4 if supply is for a construction yard

This represents the difficulty of getting a supply of more advanced materials. Success means a constant flow of material has been arranged, allowing the factory to operate as continually as is possible. The station can begin operations. One of these checks must be made for each manufacturing facility if multiple types are present, as they will all need different supplies.

Failure means supplies are low and the facility will not be able to run at full efficiency. It will only be able to produce 50% of its normal material for the first month of operation. After that month, the check may be taken again, with each failure delaying full operations by another month.

Service Industries

On stations designed to serve the general public, either by giving them a place to live or a place to spend hard earned credits, bringing the station up to speed is simply a case of bringing in the crowds to live and spend between its decks. Even so, without prior advertisement, incentives and haranguing of the masses, the station will remain empty. In order to bring in the first of the non-crew population, a character should make a Carouse or Admin check and apply the following modifiers.

- The character's Intelligence or Social Standing DM
- +1 if the planet's Population score is above 7, +2 if the planet's Population score is above 10
- +2 if the Law Level score is below 3

Success means the campaign has been successful, and the local population has begun to flood the station with requests for residency and commerce permits. Failure implies that fewer clients have been drawn to the station. Any results of the rented space percentage rolls from the tables on page 26 should be halved for the first month of the operation. This check may be rolled again after a month.

PROFITEERING

Almost every civilian and many military stations have at least one part of them devoted to making a profit. Whether it be rent from inhabitants, products sold off to the rest of the system or fuel sold to passing merchants, credits are changing hands and somebody is probably skimming a little off the top. Every facility brings in money in a different way and at different rates.

Manufactured Goods

Those facilities that produce trade goods, that is asteroid refineries and the three types of manufacturing plants, are often the easiest to make a profit from. Goods produced in this manner can be brokered in the usual manner, either personally by the owner or his representative. The owner could also hire a broker to make the sales at a more regular rate. Brokers will take their usual percentage as given on page 163 of the *Traveller Core Rulebook*. The last option for the production of goods is to set up a contract with local or interstellar corporations to purchase everything produced by the station. To create such a contract, the character should make a Broker check and add the following modifiers.

- The character's Intelligence or Social Standing DM
- Add the largest Sale DM and subtract the largest Purchase DM for the goods produced on the target world
- Apply DM-2 for an advanced manufacturing facility, representing the cost of materials
- Apply DM-4 for a specialised manufacturing facility, representing the cost of materials
- Apply DM-3 for a agricultural manufacturing facility, representing the cost of materials
- Apply DM-2 for the contractors discount
- Apply DM-3 if the contract is for sales in a system other than the one the goods are being produced in

Compare this result to the Price table as seen on page 164 of the *Traveller Core Rulebook*. This is the percentage of the sale price the owner of the station will receive per month thanks to the contract, and cannot exceed 100%. This will be accumulated and paid monthly, though shipping will most likely be a continuous rolling operation across the weeks. A station can either have all of its production tied to a single contract or spread the produce between contracts, possibly getting better deals on some than others.

For example, Manufactory 47, a small station catering to private enterprises, produces advanced machine goods at a rate of 10 tons per day. A contract has been set up between the owner and a start-up to take on all of their monthly produce, which amounts to 300 tons of goods. The owner makes the roll to set up the contract, rolling 7 (a 3 and a 4) and adding their Intelligence DM (+2) and Broker skill (+2), giving a running total of 11. A system with the industrial and asteroid trade codes gives a modifier of

-1, running an advanced manufacturing facility gives a modifier of -2 and the owner applies a further -2 for contractor discount. The final total is 6, giving a sale price of 80%. The owner will be making MCr18 a month with this contract, a tidy sum for what is only a small plant.

Refining Fuel

Fuel refineries are often odd looking stations. The efficiency of the purifier combined with the low price of fuel per ton means a refinery will often have a small inhabited core, attached to several enormous pods which hold thousands of tons of refined plant fuel. The income provided by a fuel refinery is based entirely on how busy a system is. Those with significant amounts of traffic will see much greater trade than those with only a few visitors each month. To determine the amount of fuel required by the system on average, the owner should roll 1D and apply the following modifiers.

- +3 if the system has an A class starport, +2 if it has a B class, +1 if it has a C class, and -2 If it has an E class or below
- -3 if the system is an Amber Zone, -6 if it is a Red Zone
- +2 if the system is on a trade route
- +1 if the system has no gas giant but does have a water world, +3 if it has neither

Compare the result on this table.

Result	Production used
3 or less	10%
4-6	25%
7-9	50%
10-11	75%
12	95%

The percentage is the amount of fuel that the station produces per month that is used on average by the traffic in the system. This amount will be paid at the standard rate for refined fuel, or Cr500 per ton.

For example Heisenberg's solace has a small refinery attached, with 40 tons of refinery equipment aboard, which produces 12,000 tons of fuel per month. It sits in a system with an B class starport, which is lucky enough to sit on a trade route. The owner rolls 1D, scoring a 5 and applies a modifier of +4 (+2 for starport rating, +2 for trade route), giving a final score of 9. 50% of the fuel produced will be sold to ships and other stations per month, a total of 6,000 tons, giving an income of MCr3. Not a huge income, but the station is providing an invaluable service to the system.

Of course the amount of traffic passing through a system can change month by month. To represent the ebb and flow of traffic, the owner should roll 1D, followed by 2D. On a roll of 1

to 3, the 2D roll is a negative modifier to the amount required. On a roll of 4 to 6, the 2D roll is a positive modifier. These are cumulative, with each month's roll affecting the amount from the previous month.

Continuing the above example, in its second month of operations, the owner rolls 1D and gets a 4. Rolling 2D and scoring 8, they adds the amount to the 50% value already present, and so 58% of the produced fuel is used. In its third month, the 58% is increased by a further four to 62% as the owner makes a second round of luck rolls, scoring 4 on the 2D and getting a positive modifier. Hopefully their luck holds and the system keeps getting busier.

Designer's Note: It is difficult to run a pure refinery if we consider a simple in-universe concept. Some of the biggest ships only need around 30,000 tons of fuel when they dock, an amount that could be produced by under 150 tons of fuel refining equipment per month. Equally, half of the amount allocated to the example station (*Heisenberg's Solace*) could refuel 27 heavy freighters per month. It does not seem like much, less than one per day, but that is with only 40 tons of refining equipment. It is more likely that many stations with other facilities will include a small refinery and large tanks to allow them to act as way stations and draw more traffic.

Rented Space

Many stations have large empty spaces which are perfect for somebody else's dreams to flourish in. Residential and Commercial spaces are an important part of this, allowing station owners to make money from the flocks of inter-stellar wanderers and peddlers who ply the space lanes. However income relies entirely on how many people the owner can get onto their station. The owner should roll 1D and apply the following modifiers to determine how popular their station is with both residents and businesses.

- Add the system's Population score
- Reduce the roll by the system's Law Level. More strictly controlled worlds will allow less citizens off-world

Income is based on the amount of space that is occupied at any one time. Compare the result on this table.

Result	Space Filled
3 or less	10%
4-6	25%
7-9	50%
10-12	75%
13+	95%

The amount rolled is the percentage of rented space filled by residents, sellers and shop owners. Each of them pays rent monthly. Residential spaces create an income of Cr1,200 per

ton that is inhabited, for each month. This is an average based on the living standards for individuals of varying social standing. Commercial space provides Cr2,000 per ton per month, the more valuable space having higher rents on most stations.

For example, the Bay of Mindana *is a small traders platform in a well developed system with 2,000 tons of residential space and 1,000 of commercial space. The system has several tens of millions of people (rating 7), but has a very loose law system (Law Level 3). The owner of the* Bay of Mindana *rolls 1D, scoring a 5. With the modifiers the final total is 9, meaning that the station is 50% filled with residents. This gives a monthly income of MCr2.4 from the residential space and MCr2 from the commercial.*

The amount of residential and commercial space filled on a station will drift slowly. To represent this, the owner should roll 1D, followed by a second 1D every month. On a roll of 1 to 3, the second 1D roll is a negative modifier to the amount required. On a roll of 4 to 6, the 1D roll is a positive modifier. These are cumulative, with each month's roll affecting the amount from the previous month.

Commercial Docks

While some stations operate free docks, relying on the facilities within to make profit, many others charge steep fees for using docking space for any length of time. To determine how much docking space will be used at any one time, the owner should roll 1D and add the following modifiers.

- +3 if the system has an A class starport, +2 if it has a B class, +1 if it has a C class, and -2 If it has an E class or below
- -3 if the system is an Amber Zone, -6 if it is a Red Zone
- +2 if the system is on a trade route
- +1 if the station also includes manufacturing facilities
- +3 if the station also includes commercial or refinery facilities

Compare the result to the following table.

Result	Docks filled
0-3	10%
4-6	25%
7-9	50%
10-12	75%
13+	95%

The percentage is the amount of docking space that can be filled at any one time. Docking fees are dependant on the type of space (internal or external) and is modified by local facilities. See the following table for the weekly cost per ton of docking space used.

Starport Class	Internal	External
A	Cr400	Cr100
B	Cr200	Cr50
C	Cr100	Cr20
D	Cr40	Cr20
E	Cr100	Cr50
X	Cr200	Cr100

For example, the Hildebrand *has significant docking facilities for a system with only a class C starport as well as a small refinery. She has 2,000 tons of internal docking space and 10,000 tons of external docking arms. The owner rolls 1D and adds a +4 modifier (+1 for C class starport, +3 for refinery) with a result of 7. 50% of the space is filled at any one time, giving an income of 0.4Mcr for the internal space and 0.8Mcr for the external space per month.*

As with the amount of fuel required, the ebb and flow of traffic in a system affects the docking space needed.. To represent this, the owner should roll 1D, followed by another 1D. On a roll of 1 to 3, the second 1D roll is a negative modifier to the amount required. On a roll of 4 to 6, the 1D roll is a positive modifier. These are cumulative, each month's roll affecting the amount from the previous month.

AUGMENTING INCOME

These facilities can run continuously at standard levels for as long as needed. However, they can be pushed to work beyond their normal levels to produce more or better quality goods or services for limited periods of time. Any of the following can be applied to a station for as long as it is capable of maintaining it. Each augmentation has a benefit, a drawback and a time limit. No augmentation can be used twice in a row without a three month break to allow for maintenance or settling of accounts.

Expanded Production

Lines are pushed as hard as they can to create a larger output, but it comes with lower quality of control and loss of standards. This can be used by any refinery or manufacturing facility.

Benefit: Increase the amount of produced goods for the month by 10%.
Drawback: When selling privately or creating a contract for the goods, apply DM-3 to rolls for this month's goods. If a contract is already in place, reduce this month's payment by 10%.
Time Limit: This augmentation can be applied for a number of months equal to the crew's skill level. If the facility is automated, assume it can be applied for two months before it must lapse.

Improved Produce

Work crews take their time and produce goods to the highest quality. Quotas suffer, but the price to the end user should

make it worth the time. This can be used by any refinery or manufacturing facility.

Benefit: When selling privately or creating a contract for the goods, apply DM+3 to rolls for this month's goods. If a contract is already in place, increase this month's payment by 10%.
Drawback: Reduce the amount of produced goods for the month by 10%.
Time Limit: This augmentation can be applied for a number of months equal to the crew's skill level. If the facility is automated, assume it can be applied for two months before it must lapse.

Enhance Immigration

The station opens its doors, relaxing policies on commerce and inhabitation in order to fill its decks. This can be used by any station mounting rented space.

Benefit: Increase the currently rented space aboard the station by a percentage equal to 1D+6%.
Drawback: The station owner must pay for the campaign, at a cost of Cr1,000 per ton of rented space aboard their station. This includes space both currently filled and empty. Also, to encourage immigrants, rents are dropped for this month by 25%.
Time Limit: This augmentation can only be used for a single month at a time.

Raising Rents

In order to bring in higher incomes, rents are pushed up and any unable to pay are evicted. While expatriation rates go up, so does the balance in company accounts. This can be used by any station mounting rented space.

Benefit: Increase current rental prices by 25% for the duration of the augmentation.
Drawback: While this is in effect, the level of monthly drift in occupation figures will always be negative. Assume the first 1D rolls 1-3 every month. Also, when this first goes into effect, reduce occupation figures by 1D%.
Time Limit: This augmentation can be applied for a number of months equal to the crew's skill level. If the facility is automated, assume it can be applied for two months before it must lapse.

Starship Specialists

Advertising themselves as giving the best service to starships, some stations can pull in far higher numbers of customers. This can be used by any station with docking space or fuel refinery facilities.

Benefit: Increase the docking space used or percentage of produced fuel required by 1D%.
Drawback: The owner must reduce prices for both docking and refuelling by 10% for each month this is in effect. They must also pay an extra Cr1,000 per ton of additional space filled per month to represent reactivation costs for mothballed docking and refuelling facilities.
Time Limit: This augmentation can be applied for a number of months equal to the crew's skill level. If the facility is automated, assume it can be applied for two months before it must lapse.

DOCKS AND YARDS

The owners of space stations which run yards for the building of starships have only two real options for making money; building to contract or speculative building. Contract building is cost efficient as those buying the ship pay for its construction. However, this is not going to be making the yard owner super-rich quickly. Speculative building, like any speculation, is where the real money lies, but it is a dangerous proposition. The yard builds ships and then attempts to find buyers for them. The yard has to cover design and construction costs, and the ship will take space in the yard until a buyer is found. It does, however, have the possibility of pulling in much higher profits than building to contract.

THE CONTRACT

When building to contract, the station finds a person, company or system that would like to have ships built for them. The owner or their negotiator should make an Admin check and apply the following modifiers.

- The character's Intelligence or Social Standing DM
- +3 if the system has an A class starport, +2 if it has a B class, +1 if it has a C class and -2 If it has an E or X class
- +2 if the system is on a trade route

Success means a contract has been found and the yards can begin preparations for construction. However, the owner and their negotiators must first hammer out exactly what it is they are building, and who for.

THE CLIENT

The owner or negotiator should roll on the following tables to determine who they are building for:

1D	Type of client	Description
1	Political	A system's government needs ships for many reasons, from surveying to law enforcement.
2	Military	The armed forces, most likely the Navy, but sometimes other arms need ships.
3	Para-military	A huge range of groups that could be mercenary, armed scouts or even freedom fighters.
4	Civilian	The client is a merchant cartel, a scholastic society or some other civilian group.
5	Individual	An individual is likely to be the head of a corporation or a celebrity.
6	Clandestine	The client does not want their true nature to be known by anyone.

This gives a general idea of whom the contract is for, and a general idea of the sort of ship they might want, unless they are the sort of client with more esoteric desires, or simply want to stay under wraps. The second table provides the scale of the group the contract is for, which can affect the size of the vessel required. Individual clients are assumed to roll a 1 on this table, as are clandestine clients.

1D	Client scale	Description
1-2	Local	The client only operates on a single world and within its orbit.
3-4	System	Operations take place across an entire system and all words within it.
5	Subsector	The client's operations reach out to touch a whole group of systems.
6	Sector	Entire subsectors are part of the clients remit, operating across countless systems.

These two traits of the client have a significant impact on the progression of the contract in two ways. They affect the size of the ship that will be built, and they they the pay grade the contractor enjoys at the end of the project.

THE VESSEL

To determine the size of the vessel required, the negotiator should roll 1D on the table below and apply the following modifiers.

- Apply DM-1 if the client is an individual, DM+1 if they are paramilitary or political, and DM+2 if they are a military client.
- Apply DM-1 if it is a local client, none if they are system based, DM+1 if they are subsector in scale and DM+2 for a sector wide client.

Roll	Ship type	Size	Pay Grade
-1-0	Very Small Craft	10 tons	A
1-3	Small Craft	1D tons	B
4-5	Small Starship	1Dx50 tons	C
6	Medium Starship	1Dx100 tons	D
7	Large Starship	1Dx250 tons	E
8	Very Large Starship/ Small Capital Ship	1Dx1,000 tons	G
9	Medium Capital Ship	1Dx5,000 tons	K
10	Large Capital Ship	1Dx20,000 tons	P

The rolled tonnage could be a single vessel or could be broken down into multiple smaller vessels. Building a group of smaller vessels is more expensive, but each ship will be built more quickly and therefore the station will complete the contract in a shorter time period if they can be built simultaneously. If the contract is for a group of small vessels, then the construction time (see below) is reduced to that of the new ship tonnage, though the pay grade is reduced by one step. If the construction time is reduced enough to be half that of a vessel using the entire contracted tonnage, then the pay grade should be reduced by two steps.

If the rolled tonnage exceeds the space available in the construction dock which can be used to build ships, there are two options. The first is to reject the contract and start looking for another as the dock simply does not have the capacity to build vessels of the size requested. The second option, only available if the client is looking for a group of smaller vessels, is for the docks to build only what fits. For instance, if the client requires two 100 ton vessels and the dock only has 100 tons of construction space, it could build one vessel after the other. This does extend the contract time, however, and the pay grade should be reduced by a single step because of this.

PAYMENT

While the intention is not for docks to receive payment until after the contract is complete, it is always agreed upon by both parties before any work is started in order to prevent misunderstandings later. The previous table gives the basic pay grade (or profit) for different sizes of vessel a client can request which are further modified by the intended design of the vessel and circumstances of its construction. The following modifiers affect the final pay grade the client will offer to the owner or their negotiator during the creation of the contract.

- -1 grade if the contract is for multiple vessels, -2 grades if construction time is halved
- -1 grade if the contract will be fulfilled by multiple builds which extend the contract time
- +2 grades if the ship is intended to be a combat vessel, and is armed and armoured as such
- +1 grade is the ship is an armed but non-military ship
- +1 grade if the ship is intended for both atmospheric and interstellar operations

Pay Grade	Amount (MCr)
A	0.1
B	0.2
C	0.5
D	1
E	3
F	10
G	20
H	50
J	75
K	100
L	250
M	500
N	750
P	1,000
Q	1,500
R	2,500
S	4,000
T	5,000

Setting the pay grade is the last part of the creation of a contract to build a ship.

For example, a dockyard has managed to arrange a new contract. Looking into the client's background, it turns out to be a nearby system's naval defence force (rolls of 2 and 3). They are looking for 600 tons of dock space to construct a large patrol vessel, (roll of 4 with DM+2 for being a military client) a contract that could net the yard at least MCr1. Looking further into what the contract will cost the docks, a final settlement is set at MCr10, a princely sum for building a vessel that might only cost MCr300 overall (Pay Grade D with DM+2 for military vessel, giving a result of F).

STARTING THE WORK

With client details produced, the ships' design given and pay grade set, the contract is now complete and ready to be drawn up. This is the last chance for the construction docks' owner to step away from the table and reject the offered contract. Once the deal has been signed it can no longer be altered, and construction work can begin.

The time it takes to build a ship is the same as is listed on page 55 of *Book 2: High Guard*. Standard designs can be built at the shorter listed times, but it is a rare client that does not look to private construction docks for more esoteric and bespoke designs rather than hulls built at every major yard in the sector. The lengthy build time on starships means popular private docks are rarely without at least one half-filled hull taking space, with a lucky few having waiting lists of clients hoping for their most recent designs to be built. One of the few ways to increase building speeds does not apply to an initial contract. Instead, should the client desire for more of the same vessel to be built at a later date, they may arrange a new contract which will be built at the shorter construction time listed for the vessel's tonnage.

Most docks maintain a small staff of specialists and engineers who lead construction projects as and when they come in. Most live on the station, often with their families, and some even double up as technicians and maintenance staff when not working on a contract. The work crews, the men and women who haul, shunt and weld sections of vessels under construction into place, are not part of the permanent crew and are hired on as and when the construction dock requires their services. These are not unskilled positions, and recruitment is handled carefully. There are pros and cons to this method of putting together a construction crew. On the one hand, the dock does not have to pay for a large number of personnel permanently, and they do not have to lay off large swathes of employees every time business dips. On the other, the lack of advanced technical knowledge and the limited time for background checks means that occasionally problems can arise during the construction

process. When construction is ongoing, the referee should roll on the table below at a rate determined by the Law Level of the system the station is based in.

Law Level	Event Frequency
0-3	6 weeks
4-6	12 weeks
7-8	18 weeks
9	24 weeks

Every time an event comes up, the referee should roll on the next table. It creates problems that have to be solved, many of which will negatively impact on the contract, although some have a positive impact. These are optional events designed to push the players into taking a more active role in the construction process.

2D	Event
2	Nothing Occurs
3	Missing Materials
4	Buy-out in Progress
5	Corporate Investigation
6	Nothing Occurs
7	Missing Materials
8	Contract Buyer
9	Nothing Occurs
10	Industrial Action
11	Industrial Sabotage
12	Unusual Fortune

Industrial Action: The workers, builders and technicians who turn a pile of materials into a functioning star ship have decided that their conditions are substandard. They have put down their tools and are refusing to keep working. The owner or their representative must make a Very Difficult (-4) Diplomat, Int check. If they fail, they must wait another week before they can try again, delaying construction. The check can be reduced to Average (+0) if the owner willingly reduces their own final Pay Grade by 5% to grant higher wages and better worker conditions.

Missing Materials: A shipment has been... misplaced somewhere along the way. Of course, someone may well have managed to profit from it but this is certainly not the dock's owner. Work will be delayed by 1D weeks as new parts and materials have to be sourced, bought and shipped in.

Buy-out in Progress: The worst has happened for a company under contract; the client is being bought out by another. A representative of the new owners will be visiting the construction docks to look over the contract and proposal. The owner must make a Difficult (-2) Persuade, Int check to convince them to

maintain the venture. For every Effect by which the check is failed, the Pay Grade is reduced by one step, but the contract is continued. If the Pay Grade is reduced to zero, the contract is cancelled and the owner must figure out what to do with a half completed vessel. If the owner passes the check, the Pay Grade is increased by one step for every two points of Effect, as the new client is impressed by progress.

This incident can affect any client type, even military and political. After all, budgets must always be balanced.

Corporate Investigation: Someone, somewhere, has done something without following regulations and now an entire investigatory team is descending upon every one of their assets, and that includes currently contracted starship docks. Not only will the vessel under construction be checked over but so will the dock's owner and anyone who has money involved in the running of the station or is a close affiliate of the owner. For every career term the group has in the Rogue, Scout or Drifter careers, the contract is delayed by a week, and the involved player must pass a Difficult (-2) Advocate, Int check to not face charges and further delays.

Contract Buyer: Slightly different from a buy-out, this event sees a representative from another group approaching the yards with an offer of better money if they cancel their original contract and build the vessel for them instead. If the offer is accepted, the new client will offer the Pay Grade to be increased by 1D-2 steps, which may result in a negative figure; not only does the dock owner run the risk of incurring their previous client's wrath, but also of losing money.

Industrial Sabotage: A blast rocks the dock yards, a plume of fire punching a hole in the side of a hull under construction. Workers are killed and the contract is set back by weeks. The delay is equal to 2D weeks as the wreckage is cleared away and damaged parts re-fitted. More important is the drop in morale and efficiency after such an attack. The rate at which events occur should be increased to the next shortest rate. If it is already at the lowest rate then this event should lead immediately to the Industrial Action event.

Unusual Fortune: The contract accelerates beyond schedule, efficient workers and well timed deliveries coming together to push the project weeks ahead. Reduce the remaining contract time by 1D weeks. This event could lead to negotiations to increase the Pay Grade.

TRANSFER OF TITLE/BREAKING CONTRACT

The transfer of title is the point at which the ship is no longer the property of the builder and passes into the ownership of the client, an important point in the contract normally taking place upon delivery of the vessel. However, there are two ways in which this may change.

If the builders are confident they will finish the contract on time, they may agree to transfer the title of ownership early. This must be decided before the build is more than 75% complete. In the even they are on time, the Pay Grade should be increased by +1 step, and if they are able to somehow finish the contract early then the Pay Grade should be increased by +2 steps. However, if the contract is then overdue, the Pay Grade should be reduced by -1 step in addition to any overdue penalties listed below.

If the contract is suffering from severe delays and the builders know they are not going to make a significant profit from it, they may decide to break their contract. In this case, the contract ends and the builders retain title of ownership over the incomplete vessel. The builder must pay the client the current costs paid on the vessel, which means that if the build is 50% complete, then the builder will have to pay the client 50% of the cost of the complete vessel. At this point, it essentially becomes a speculatively built vessel. The vessel should be completed according to the rules opposite, including the possibility of savings on the remaining costs of construction.

For example, a set of yards is currently constructing a 1,000 dton hull for a system-wide military force. The yards have held the contract for 60 weeks, but have suffered significant delays and have only spent 44 of those weeks actually working on the new vessel. If things continue this way then it will end up taking around 170 weeks to complete a project which should only take 120. This delay could prove very costly to the yards so they decide to break their contract, repaying the client 37% of the cost (44/120) and continuing the project under their own terms.

FINISHING UP

When building as contractors, finishing the contract is a simple task. The client will take delivery of the vessel, transfer payment to the station and the contract is complete. The only issue that may arise is if the contract is overdue due to problems faced during the building work. Compare the amount of time by which the contract is overdue to the following table and reduce the final payment made to the builder accordingly.

Percentage Overdue	Reduction in Pay Grade
+10% or less	-1 step
+25% or less	-2 steps
+50% or less	-3 steps
+100% or less	-5 steps
+200% or less	-8 steps

This reduction in the Pay Grades can drive the payment to zero or even into negative. At that point, each negative step increases the Pay Grade up one from zero, but this is the amount that the builder will have to pay to the client as a penalty for late completion

Once the final payment is made, the dockyard is free to be used for other things, be it another contract or speculative building.

SPECULATIVE BUILDING

Building without a contract to insure against losses is dangerous, for the station and the owner. They have to pay the architects, suppliers, their own work crews and, at the end of it all, still have to find a buyer for the vessel produced. Luckily it is quite possible for dockyards to get better deals on materials than any private citizen. Once the project has been decided upon, the owner, or project manager, should make a Broker check and add the following modifiers before comparing the result to the following table. This will determine the price at which the construction docks can build the ship, hopefully lower than the sale price.

- The character's Intelligence or Social Standing DM
- +1 if the system's TL is above 10, +2 if the systems TL is above 13

Check	Build Price
0-2	125%
3-5	110%
6-8	100%
9-11	95%
12-13	90%
14-15	85%
16-17	80%
18+	75%

The final determined price (the percentage of the total ship construction cost plus 1% architect's fee) should be divided by the length of time needed to construct the ship, as is listed on page 55 of *Book 2: High Guard*. This is then paid monthly as salaries, suppliers and every other hangar on needs paying for.

Speculative building may give the owner of the docks more freedom in choice than building to contract, but it still suffers many of the same problems. As with building to contract, the owner should roll on the event table on page 31 at the same rate. Any event that would reduce the pay grade should increase the cost of building by 1% for every step instead. No matter the reason for building, dock yards always face the same problems and delays.

Overdue builds can be much more dangerous to a speculative build than a vessel being built for contract. For every four weeks or less that a speculatively built vessel overruns its normal construction time, the owner must pay an additional months worth of the final price, often pushing the work over the initial budget by a significant amount. On larger constructions this can push the price up by millions of credits and cripple entire dockyards, forcing them into bankruptcy.

Once the starship has finally been built and all costs have been paid, and unless the ship is going to be used privately by the construction dock's owner, then a buyer must be found. Finding a buyer for a starship is much like finding a buyer for speculatively traded goods, but much more complicated. The dockyard's owner should make a Broker check and apply any of the following modifiers that apply.

- The character's Education or Social Standing DM
- +2 if the vessel is a standard design
- -1 if the vessel in question is armed, -2 if the vessel has military grade weaponry such as particle beams fitted
- -1 if the vessel is over 1,000 tons, -3 if the vessel is 3,000 tons or more, or -5 if the vessel is 10,000 tons or more
- +1 if the system has a class C starport, +2 if the system has a class B starport, +3 if the system has a class A starport

If the check is successful, then a buyer has been found. The price that the buyer will pay for the vessel is determined by another Broker check with the following modifiers.

- The character's Intelligence or Social Standing DM
- -2 if the vessel is a standard design
- +/- a modifier depending on the buyer as determined by the referee. Some clients have a lot of sway even with private enterprise

The value rolled should be compared to the Percentage Price table listed here. The seller does not have to accept this price, but if they reject it they cannot deal with this buyer again for at least a month. After that month they may re-roll one of the dice thrown to determine the percentage price of the vessel.

Result	Percentage Price
-1 or less	40%
0	50%
1-3	60%
4-6	70%
7-9	80%
10-12	90%
13-15	100%
16-17	105%
18-19	110%
20	115%
21+	120%

This percentage should be applied to the total value of the vessel at the time of design. It should not include fuel, munitions or any additional costs suffered during the construction process. Equally, it should not include any discount to the build price as may be gained during the beginning of speculative building. This amount will be paid directly to the ship builder either by the purchaser or the bank which is supplying the mortgage which many individuals have to take in order to pay for a starship.

Once the money is transferred, the job is done and the ship will be removed either by its new owners or moved onwards at minimal fees to a place of storage by the same party.

AGAVE

A system like few others, every world that spins about Agave is either harsh and life-threatening or otherwise incapable of supporting life. The main colony only exists thanks to the sheer perseverance of the locals, constantly at war with the planet to eke out a living on its surface. The desolation has produced a curious situation wherein the system is reliant on a larger than average network of space stations to survive. It is easier to place industry in space than build yet another armoured dome on one of the surfaces, so the space around Agave has become busy with permanent platforms.

HISTORY OF THE AGAVE SYSTEM

The antecedents of the modern inhabitants of Agave first arrived in the system some four hundred and twenty years ago. Two kilometre long colony ships driven by primitive jump drives arrived on the edge of the system without fanfare after a long voyage between systems. Their limited in-system drives pushed them toward the inner worlds while reconnaissance drones swarmed to those worlds believed to be best for habitation. Unfortunately, as the ships came closer to the colonists' future homes, they began to receive news that the planets chosen were not as fitting as had been projected when they began their journey.

It was almost a full twenty years between the arrival of the colony ships and the first landings on what became known as Agave Prime. By that time there had been several permanent stations established in orbit to harbour the growing population beginning to overcrowd the colony ships. The initial landings went well, the first ring cities replacing pre-packed shelters the

colonists had started their new lives within only a few years before. Accidents were few and far between and deaths even rarer as the heady rush of new settlement kept the inhabitants focused on cautious survival.

Over four centuries, two further worlds were settled by the hardiest men and women. Eighty years after the first landings, fourteen outposts were set up across the system, six of them focused on the lush jungle world that orbits beyond Agave Prime. While only one of these outposts is still operational, at the time they were considered to be the best option for the continued survival of the colonies. At the same time, considerable numbers of stations were being built from parts of the last colony ships, as well as new materials brought up from the surface of Agave Prime. Initial defensive preparations were being made as the colonists stopped thinking of themselves as colonists and became true Agaveans. The first of the system's heavily armed defence stations was completed just six years after the outpost initiative completed its primary objective. The commissioning of this vital station marked the official establishment of the Agave Armed Forces and the System Fleet as a structured and co-ordinated group.

Another half century saw massive growth in the system to the point that while outposts were slowly but surely abandoned, a significant presence slowly built up on the mining world now named Agave Bravo. Cut off from the rest of the system for almost half of the planet's annual cycle, the colonists here grew used to living under the ground at the hottest times of year. Like Prime, Bravo was another growing population but over the years strict population controls had to be implemented to ensure the

CHRONOLOGY OF THE AGAVE SYSTEM

685	Two colony ships arrive in the Agave system
705	Establishment of the first settlement on Agave Prime
787	The outpost initiative deploys fourteen settlements
793	Commissioning of the first defence station, *Home Guard*
844	Establishment of the first settlement on Agave Bravo
912	Loss of outpost A-9, end of the outpost initiative
934	The system war begins
935	The biggest build up of military strength begins
937	The end of the system war
1105	The present day and the fourth centenary of the systems colonisation

numbers present did not outstrip supply or the planet's capacity to construct new shelters.

Over two and a half centuries, important changes happened in the system. The growth of Agave Prime and Bravo were countered by shrinkage and eventually closure of all but one of the outposts. While most simply suffered depredations of their local environments or a lack of funds and supplies, one of the outposts that shared a world with Outpost A-14 emptied for entirely different reasons. All six of the outposts on the world were attacked by local predators almost from the moment they landed but Outpost A-9 was hit the worst. Eight months of almost nightly raids by packs of small hunters made sure the outpost has been unable to spread beyond its initial landing borders. Supplies were being wasted on defensive structures and armaments when they should have been acquiring new resources for expansion both locally and system wide. Other outposts had found veins of rare metals, created voluminous supplies of alien woods and other valuables, and some were even beginning to create new industry. One night, a desperate transmission hit the local communication nets from A-9, a cry for salvation from the beasts in the darkness. Unable to launch any supporting operations until morning for fear of being attacked themselves, the other outposts could only wait and hope to receive further transmissions. At dawn, three shuttles left the nearest outposts carrying well armed militia squads, landing in the open streets of Outpost A-9 within minutes of one another. What they found has become one of the biggest mysteries of the Agave system.

The outpost was empty and silent. The would-be rescuers found neither bodies nor signs of any survivors in the buildings but many showed evidence of a severe struggle. Shell casings, laser burns and claw marks all marred the outpost, both inside and out. Drag marks ran down the outpost's main street and into the thick jungle. The loss of Outpost A-9 was the death knell of the outpost initiative. It took less than a decade for all but the most populous of them to be abandoned, its numbers now swelled by the influx of people abandoning the others.

With nearly two and a half centuries of peace behind them, there were those among the Agave rulers who warned that one day everything would change. Reliant on only the limited System Fleet and their small stations for defence, scaremongering became a favoured tactic when politicians were looking for re-election. As it turned out, they never followed through on their promises and the Agave Armed Forces were left as a run down militia instead of a force capable of actual defence. That was, at least, until the raids started and Agave came under attack for the first time since colonisation. Unmarked warships spread destruction across the system, attacking planets, destroying stations, and killing and stealing without respite. Every few weeks, a new group of ships would arrive before attacking and then fleeing again. The Armed Forces, terminally undermanned and under-armed, could do little to stop them.

The response was momentous. The Agavean inhabitants had been lucky enough that the system's space construction infrastructure had barely been touched and they swung into action. They began churning out fighters and small warships as quickly as possibly while, on the surface, training programs were turning militia into a real fighting force. After months of reeling under the raiders' blows, the military began to strike back. Their first victory saw a squadron of fighters catch a raider as it headed out of the system, destroying it with few losses. Then they caught raiders in orbit and finally as they entered the system. Not every raid was halted and not every battle was a victory but the tide began to turn.

Eventually the raids slowed and finally ceased. The system war was declared officially over four months after the last raid and with no signs of further attacks forthcoming, the men and women of Agave slowly returned to their former lives. Two and a half years of conflict had changed the system, though mostly for the better. The System Fleet was truly established as a space force with a not insignificant number of warships. The ground forces had attained a strength of almost 1,500 fighting men and women, and began a slow draw down that still maintained an effective fighting strength to ward off future attacks. Agave had been tested and had not been found wanting, the system caming out stronger and more unified than it had ever been before.

One hundred and fifty years after the end of the system war, Agave is now preparing to celebrate the fourth centenary of the first landings on Agave Prime. The planned celebrations promise to be momentous and security has been tightened to the same levels they had been during the war. Not everyone is looking forward to them as many are, especially the descendants of the first colonists who made lives on stations long before the colony landings, but few suspect how unhappy some of them are. Even so, the system is safe, the people happy and the colonies continue to proper. The people of Agave will prosper no matter what. After all, they have survived everything these planets could throw at them.

Patron: Lieutenant Antares Kael, AAF Security

Required: Investigate; Streetwise
Reward: Cr10,000

Player's Information

With the oncoming celebrations of the fourth centenary, security is tight all over the system but it is strictest on board Agave Prime's high port. The AAF Security forces aboard are constantly receiving threats against the station but now they have received a series which are being taken very seriously. Someone is threatening not the people, not the officers, but the entire station itself. Finding the message senders is vital. Their survival is not.

Referee's Information

Lieutenant Kael is desperate for help on this case and does not have nearly enough manpower to deal with all of the problems the celebrations are causing. But this threats runs deeper than perhaps anyone realises and he is not beyond using outside help.

1. The danger is imagined but the threat very real. An internal faction of the station's command elements wants control of the high port. They believe that if Lieutenant Kael is unable to track down the supposed saboteurs, he will be replaced by their own man.
2. The threat stems from the surface, a radical survivalist group who believe Agave's colonists should live only on the planetary surfaces. The threats will soon become public, and continue unless all local stations are abandoned or the group is able to plant explosives on the port.
3. The threat stems from space. A group of political radicals believe the people of Agave should stop wasting resources on attempting to live on the planetary surfaces. They intend to attack the station in the guise of a planet-bound faction, radicalising them and hopefully making their own faction seem more attractive to the system's people.
4. A lone member of the engineering crew has decided the high port can no longer continue to exist. The engineer has no radical affiliations, he simply wishes to sabotage the station. There is no point to the threats other than to scare the security services who could not possibly find him. The engineer plans to sabotage the station's grav drives and allow it to plunge into the atmosphere.
5. The threat comes from outside the system, a neighbour who wishes to cause havoc and strife among the locals before striking militarily. The threat is real but the aggressors will do all they can to avoid showing their hand, including abandoning local agents to security forces.
6. The threat is a creation of Lieutenant Kael's imagination. Rumours abound, but are manufactured. The players are being sent on a wild goose chase, pursuing a mission they have no chance of succeeding in.

THE SYSTEM

Agave is a dull orange star, fat and bloated. It produces just enough heat to keep the ten planets that circle it from freezing over, though the closest spin so close that surface water boils whenever it has a chance to settle, and even the dark sides bake until they spin back into the light again. The four outer planetary bodies are gas giants, each a swirling concoction of colour known for their beauty. The outermost and smallest of them, however, is dull brown in colour and known only for its insignificance compared to the others. The six inner planets, all solid terrestrial worlds and nominally capable of holding a population, range in size from Agave Prime's enormity to Delta-fourteen, the moonlet with a planetary orbit. It could be a utopian system with so much space available for inhabitants to spread.

Unfortunately, it is a system that seems to have been designed to be as difficult to live in as possible.

In a system with six rocky worlds it is unusual for one as developed as Agave to have settlements on only three, even considering how harsh those three are and how difficult it was for the colonies there to survive even with the inhabitants' advanced technology. These three worlds have small populations for the length of time they have been settled, the number of people who have flocked to Agave's large number of space stations an indicator of just how harsh life is on the surface. Even in the face of this, the system is thriving, with space-based industry stronger than it ever has been.

Agave Prime

Name	UWP	Population	Trade codes
Agave Prime	BAE8578-A	700,000	Fl, Ht

The first planet to be landed upon, shortly after the first orbitals were emplaced, Agave Prime is a hard world. Huge compared to many other initial colony worlds, it is the largest rocky planet in the system and has a gravity to match. Even with such assets, the world still manages to have an incredibly thin atmosphere anywhere above sea level and even there it is barely breathable without technological assistance. Low-lying depressions in the surface that would normally be havens to the population are filled with the toxic liquid that also make up Agave Prime's oceans, giving no respite to inhabitants who are forced to live in shelters around the edges of these inland seas.

These ring-cities are cramped and uncomfortable for many, packed close to the lakes. While not a great quality of life for the population, it means at least some buildings do not have to be pressurised. Each of the ring-cities, and there are dozens of them scattered across the planet's surface, is ruled independently, reporting only to a central quasi-ruling council that meets at the world's small starport. It is neither the most efficient nor the best governmental system, but it works well for a world that needs localised authority due to the population's isolation. Another factor that stems from the planet's somewhat dangerous surface are the harsh restrictions on almost anything available to the general public and those coming onto the world. Weapons, narcotics, even unauthorised landings, are banned planet-wide due to the danger they could pose to the people of Agave Prime. Information is less restricted, but still carefully controlled to keep the corralled population from becoming unruly.

Agave Prime, or at least its orbital space, is the site of two very important places for the system. Point Alpha was the first permanent structure ever built in the Agave system and now considered a place of historical significance. Not that this has stopped the current owners from converting it into a tourist destination for the rich to spend a few days experiencing the

'discomforts of the few that allowed the many to prosper'. It is a small station, too small to have a spin section of its own, and so every moment spent aboard is spent in free-fall. The views are reportedly stunning.

Patron: Sir Vander Krant, Owner of Point Alpha, Knight of the Realm
Required: Pilot; Mechanic; Comms
Reward: Cr25,000

Player's Information
Point Alpha has gone quiet and Sir Vander is trying to find someone to go and find out what has happened... but quietly. The current visitors are very high profile guests, a local Baron and the progeny of a merchant empire with connections across the sector. If something unfortunate has happened then the news cannot be allowed to spread any further than it already has. Hopefully, it is simply a communications system failure and all the current occupants are safe and well, if feeling somewhat cut off. Sir Vander wants the players to go up there and make sure everything is okay. If it is not, they have free reign to do whatever they must to make sure any problems are smoothed out.

Referee's Information
Everything has gone wrong aboard Point Alpha. The young man whose father's trading cartel covers half a sector has been targeted by kidnappers. With so little security around the station, they thought it easy to sneak aboard and grab him. But things did not go to plan.

1. Somehow the boy and the Baron fought off the attackers, but the onboard communications system took a hit. They are quiet because they cannot get a message out. The Baron needs medical attention but she will last the trip to a nearby medical facility.

2. The kidnappers are still on board Point Alpha, their ship having drifted away during the fire fight. Both sides have retreated to opposite ends of the station, sealing airtight doors between them. The Baron, the boy and the crew are preparing for another round of fighting to try and drive them off the station.

3. Something hit Point Alpha hard. There are signs of a fire fight, and the boy is missing. The Baron and three other members of the stations crew are badly wounded, the others are dead. This cannot be covered up for long, but maybe the players can rescue the boy before the word gets out.

4. The kidnappers have been and gone, their mission a failure. The boy is dead and so is the Baron. Their bodies are surrounded by those of the crew and some of the kidnappers, but the station is silent. The consequences of these events will travel far.

5. Point Alpha is a wreck. Multiple sections have had holes punched in them by ship grade weaponry and the station's orbit is quickly degrading. No one is left onboard and it will be a difficult task to find evidence of who attacked the station before it burns up.

6. A ship undocks from Point Alpha as the players arrive. If challenged, it will engage with onboard weaponry. The kidnappers are fleeing, their two hostages onboard, and they are ready to run for the jump point. Getting the hostages out alive will be an exercise in diplomacy more than strength of arms.

Agave Prime's major orbital land mark is the high-port that sits permanently over the planet's ground-based starport. Larger than most dreadnoughts, it is the centre of the system's economy, crammed to the bulkheads with docking spaces, trading halls and living space for the many hundreds who pass through its corridors daily. From the surface near the starport, it is a daily presence, large enough to be visible at night by the shine of reflected sunlight from its polished surfaces. In space, it

Type	Habitat	Strength	Dexterity	Endurance	Intelligence	Instinct	Pack
Agave Jackal							
Killer (carnivore)	Jungle Walker	14	12	7	0	10	5
Size: 6; Recon 1, Survival 3							
Thrasher (4D), Thick Hide (2), Number encountered: 1D							
Agave Panthers							
Hunter (omnivore)	Jungle Walker	18	11	14	1	11	8
Size: 10; Recon 2, Stealth 2, Survival 2							
Claws (3D), Thick Hide (4), Number encountered: 2D							

is central to all traffic movements around the system, a constant reminder that every vessel is carefully watched by the imposing presence of the Third Imperium.

Outpost A-14

Name	UWP	Population	Trade codes
Outpost A-14	E684332-8	9,400	Ga, Lo

A colony world covered in verdant, lush forests, it was initially thought that Outpost-A-14 would be a garden world where colonists could live in peace. However, between its low gravity and dense atmosphere, the world has produced some of the deadliest predators ever to grace a planet. Muscular, fast and stocky, many of the beasts took to hunting the original settlers as easily as they had their more natural prey. This is the central reason behind the planet's Law Level being so low. Even paramilitary weapons like large calibre rifles and powerful combat rifles are available to the world's inhabitants to enable them to survive. While not required by the government, almost every household has at least one weapon and many contain significant armaments to defend themselves with.

Night is the worst time for the outpost inhabitants. At night, despite the bright street lights, some of the animals become brave and stalk the streets of the single town. Deaths are not an unusual part of the morning news service, giving the population a growth rate of around zero, if not actually shrinking. The ruling family do all they can to limit this, but even walling off the town and posting sentries only slightly reduced the death rate. It is rare for a visitor to stay for more than a day now, and only the most foolhardy or bravest remain as permanent settlers.

Outpost A-14 has a large number of research stations strung throughout its orbit. They watch movements of the planet's complex animal life, send down teams to take samples, and investigate all manner of flora and fauna for possible uses. The stations have two crews, one termed 'operations' and the other acting as scientific crew. Each has their own hierarchy, with the stations' senior officer and head researcher being of equivalent rank. The planet's complexity draws researchers from across the sector and so space in the onboard barracks is at a premium. The number of stations has grown over the years to try and meet demand, but there are still long waiting lists for visitors to take their turn aboard.

The planet's orbit is also home to the headquarters of a small but incredibly wealthy mercenary company. The Tarantara Tigers are a small hostile security force based out of Agave which provides bodyguards and protection in the most dangerous environments. Part of the reason they orbit Outpost A-14 is that they use the wildlife on the surface to train their employees to survive harsh environments. They send expeditions to Agave Prime and Bravo just as often to give a wider range of experience and make sure that the service they provide is as versatile as possible. Their units have provided security to several local VIPs as well as those from other systems visiting dangerous places both inside Agave and further afield. They have operated several times in war zones, but it is not the company management's first choice for tickets.

The creatures which reside in the jungles that surround Outpost A-14 are infamously vicious predators. Those presented here are some of the most common and well known, with each holding something of a history with the people of the settlement.

The jackal is the most dangerous of them despite its small size and limited numbers. What they lack in intelligence and mass they make up for in sheer viciousness and strength. Packs which number only a handful have been observed falling on much larger creatures and tearing them apart in moments. Unfortunately, they are also fearless in the face of the settlers and at least a little resistant to modern small arms. Numerous colonists have been lost because their rifles could not bring down a jackal in time.

Agavean panthers are not the most aggressive or threatening of the world's creatures but they are certainly some of the biggest. They outmass most settlers almost tenfold and, to make things worse, they are stealthy hunters who stalk their prey for miles. Packs will spread out across huge swathes of jungle and follow herds of grazing beasts, families of jackal and whenever they catch the scent, expeditions of settlers. They will surround prey slowly, sometimes picking stragglers off, before striking at night to drag off members of any group into the darkness. They are only an occasional threat but when a pack start their hunt, there is almost no stopping them.

These are only two of the multitude of species that swarm among the planet's dense jungles. Beyond them are vicious hunting birds, herds of grazers with six grasping limbs, and the tide of rat-like mammals which eat like locusts and threaten several stations they have managed to get themselves onto. Outpost A-14 was never the safest of colonies and it is easy to see why others folded.

Agave Bravo

Name	UWP	Population	Trade codes
Agave Bravo	C897477-A	51,000	NI

At first glance, Agave Bravo is almost utopian in nature compared to other worlds in the system. Look closer and it is understandable why its population is so low. Between the toxic atmosphere and an average temperature of almost 50 degrees Celsius, the planet is almost entirely uninhabitable. The inhabitants are forced to live in a pair of domed cities which are kept cool, only emerging in air conditioned vehicles, the insides of which still reach incredibly hot temperatures. When temperatures rise during the summer months, they can reach levels of 65 degrees or even higher. When this happens, the inhabitants are not allowed outside at all. Vehicles suffer catastrophic breakdowns and occasionally engine parts will melt in the heat of the sun. Even landed starships can be troubled by the heat if they stay for long.

In winter, the planet can be survived outside shelters for significant periods of time. Even so, the inhabitants still require breathing apparatus to survive the huge concentrations of carbon monoxide which fill the planet's dense atmosphere. Those who go outside wear suits designed for airless rocks. They ward off both the heat and solar radiation that helps boil the planet, and are more resistant to the occasional hot rain than anything else the inhabitants have managed to find.

One of Agave Bravo's few major contributions to the systems economy and the main reason for placing a settlement, are the raw materials that can be mined with much greater ease than on other worlds. However, because of the nature of the planet, mining is dangerous enough without worrying about processing the mined ores. The solution to the conundrum came in the form of a set of processing plants in orbit but held within the planet's shadow, each with enough shuttles to move hundreds of tons of raw material from surface into orbit. These plants process everything, with some platforms having multiple stages to allow for the production of advanced vehicles or other equipment.

PLACES OF INTEREST

A-GG-1

The closest gas giant to Agave's sun, known Colloquially as the Big One, A-GG-1 has become the domain of the system fleet. It is their refuelling point, home to their ships and has been adopted as part of their insignia. The fleet is on the small side compared to others, under-funded and limited in size by the tiny population of the system as a whole. It has not stopped the locals being incredibly proud of their flotillas though.

Fleet headquarters is based out of a small platform that spins over the gas giant's equator. Filled with briefing rooms, command decks and powerful control systems, it also has

enough space within to dock every ship of the fleet. A large fuel refinery is suspended beneath it, huge tanks filled with enough fuel to see the fleet through several years without sending more scoop-drones down into the giant's atmosphere. The station is the fleet's largest asset, as it dwarfs even their flagship and flotilla leaders. Despite this, it is well known within the fleet that their HQ station has little strategic importance and its function as a centre of command and control can be performed by the flagship. Even so, it makes for an excellent symbol of the system fleet's authority and control it has over its own borders.

The defence stations that seem to have a more significant presence around A-GG-1 than anywhere else are not a permanent fixture, much to the surprise of many who see them. It was realised during the first days of the system's military build up that they would be incapable of putting together enough defence platforms to sufficiently defend any two planets, let along a whole slew of populated worlds and stations. Instead of trying and failing, the early designers equipped their first platforms with low grade starship drives that enabled them to maintain any necessary orbit and, in dire circumstances, move under their own power to different parts of the system to take up new defensive positions. Since then, all platforms have been equipped with similar drives, the capability worth the increased cost to planners since those first days. Most do not have sufficiently hard wearing drives to perform combat manoeuvres and any significant movement leads to long periods of down time and maintenance, but there have been several engagements in which platforms went into combat under their own power and brought their weaponry to bear against the enemy.

A-GG-4

The last of the system's gas giants, the planet is considered an uninteresting spec in the system by most. There is not even any longer a research station in orbit. When its orbit degraded, the only registered station was allowed to fall into the planet's atmosphere, all systems online and sensors active, gathering data all the way down until it was crushed by the massive gravity. Now the giant goes unnoticed, too distant from the sun to be useful for trade and refuelling or indeed anything that would be of aid to the system.

However a select few have managed to find a use for it. A small space station sits on the edge of the giant's atmosphere/space border, emissions hidden against the background heat produced by the planet. It is the home of pirates, scoundrels and brigands who come to the station to hide in the small docks it has on board. How it has yet to draw the attention of the local authorities is a matter of remarkable luck and excellent planning on the part of those who visit. Naval vessels do occasionally patrol the edges of the system and when the inhabitants of the station see them coming they are quick to shut down as many systems as possible, docked ships either fleeing or descending into the planet's thick atmosphere to hide.

Patron: Commodore Julianna Wexler, CO of ASFS Anderton

Required: Pilot; Gunner; an armed vessel
Reward: Cr50,000

Player's Information

The Agave System Fleets command officers have long known there is something on the edges of the system. Pirates have been harassing the systems around Agave for years and the lack of efforts to stop them means they are beginning to assume it has something to with Agave's government. Thus, thanks mainly to lack of significant naval assets, the fleet is calling on local mercenary, merchant and civilian ships to conduct a proper search of local space and root the pirates out once and for all.

Referee's Information

The ASF may be finally making a concerted public effort to route out the pirates. However that doesn't mean that they entirely intend to find something. The players will be assigned a sector of space to search in their ship, but what they might find is in question.

1. The effort is just that, an attempt to hunt down the piratical elements present in the system. However, the area of space the players patrol is empty and they are in for several days of fruitless searching.
2. The same as above, but this area happens to be one with a secret station present in it. They will try to hide as best they can, but it is possible the players will stumble across them.
3. As above, but the players are only close to the site of the hidden station. Perhaps the players will be called to help a ship under fire, or maybe one of the searching ships will suddenly go quiet. Whatever happens, they will be nearby when a discovery is made.
4. The ASF are making real efforts to find the pirates, but they will not particularly care if they go undiscovered. After all, they are weakening the surrounding systems, allowing the government to bully them in trade talks.
5. The ASF know about the pirates and are working with them to strike against enemies their own fleet cannot. They will not, however, act openly against their own searching vessels. They hope the searchers will not find the pirates.
6. The ASF know about the pirates, and are perfectly willing to act against the searchers as quietly as possible. Should the players find the pirates, one or more of the patrolling naval vessels may well move to 'assist' them.

Extra-orbital

In-between the planetary orbits sit four stations vital to the continued security of the Agave system as a whole. Three are what are commonly termed interdiction stations, each a mix between customs office and military installation. They orbit the sun in-between the tracks of inhabited worlds in order to watch over them and safeguard all traffic passing between them. Each station is unarmed and holds a squadron of small fighter craft to protect them from aggressors and patrol local space. They are incredibly cramped even compared to other military stations and opinions are divided as to whether postings to the stations are career ending or an opportunity for advancement. In truth, the commanders of these stations are normally drawn from those officers of sufficient rank nearing retirement, fleet command considering this a significantly safer choice than giving them an armed warship of their own.

Asteroid Belt

Hidden deep among the rocks of the system's single asteroid belt that orbits between the last of the rocky worlds and the first gas giant, is a little station with massive strategic value. These are the system fleet shipyards which build, maintain and repair every military vessel currently operational, despite their relatively limited scale. With a capacity of only one thousand tons at a time, they are almost constantly filled to capacity so as to keep the fleet flying and building projects are carefully timed so that they do not interfere with the ongoing maintenance. Its location is a closely guarded secret known only to those who hold flotilla commands and above. Ships entering dry dock are placed into orbit around one of several larger asteroids and crews are taken off by military shuttles. The ships are moved by tugs to the hidden yards and returned to their original positions once maintenance and refits are completed. The level of paranoia is surprising given the minimal scope of the yards compared to many other systems. Perhaps it is quite how centralised and vital this tiny station is, or maybe it is the simple fear of being left incapable of rebuilding their defences. Either way, the location of the shipyards is better protected that any other secret the system's military holds.

THE AGAVE SYSTEM FLEET

Formed originally as a local peacekeeping force, this fleet has become the main patrol and defence arm of the system's military. Based out of Fleet Headquarters, which orbits A-GG-1, the System Fleet is a small and well-trained force which utilises a multitude of tiny vessels to ensure the system's safety. With a budget of only a little over two thousand mega credits per year, the fleet is hard pressed to maintain what ships they do have and has led to them getting a reputation as rugged and occasionally dirty but capable men and women with a penchant for jury-rigging to near disastrous consequences, instead of paying for repairs and fresh equipment.

Combat Ships of the System Fleet:
- 1 Admiralty-class flagship (35 crew, 15 reserve)
- 3 Huxley-class flotilla command ships (30 crew, 10 reserve)
- 11 Pique-class patrol corvettes (44 crew, 11 reserve)
- 36 Shrike-class light fighters (36 crew, 12 reserve)

The fleet is made up of fifteen relatively small military ships and thirty-six small craft outfitted as fighters. With only three and a half thousand tons across the entire fleet they do not boast even a single capital ship but they do have one advantage; with only two of their lightest vessels mounting jump drives, in order to act as couriers, the ships of the Agave System Fleet are able to mount much heavier weapons than of those of similar sizes that are FTL capable. The fifteen ships are organised into three flotillas for the purposes of organisation, each assigned to one of the system's three worlds. The first of them, the Core Flotilla, is made up of the fleet flagship, a single four hundred ton flotilla command vessel, and three patrol corvettes. One of the corvettes is permanently assigned to Agave Prime's orbit while the others are on patrol or down for maintenance. The flagship tours the system on its own independent manoeuvres and often spends significant periods of time near Fleet Headquarters, while the flotilla command ship patrols alone or alongside one of the corvettes, covering as much of the Core Flotilla's designated space as possible.

The Star and the Outer Flotillas are both made up of five vessels, a single flotilla command ship and four of the patrol corvettes. Each contains a single corvette which mounts a jump drive for use as a courier and diplomatic carrier. They are each tasked with maintaining security around one of the inhabited worlds but also of patrolling either the inner system (the Star Flotilla) or the system beyond the asteroid belts (the Outer Flotilla). While their Pique-class vessels will sometimes meet on the edges of the asteroid belt, years go by without the flotilla command ships coming within 100,000 kilometres of each other.

Command Ranks of the System Fleet:
- 1 Fleet Admiral
- 3 Vice Admirals (1 shipboard, 1 station side)
- 11 Commodore's (3 shipboard, 3 station side)
- 43 Captains (11 shipboard, 10 station side, 3 squadron)

With such a limited population to draw from, the Agave System Fleet is limited by more than just its minuscule budget. A full sixth of the fleet's strength is used to man its vessels, and another sixth used for the several thousand tons of space stations it maintains. The other eight hundred men and women are the fleet support staff, though none are in the least unimportant. With a total strength of only 1,200, the System Fleet is small indeed, though it is significant when compared to the population it is charged with protecting. Perhaps because of this, or because of the mindset that has developed amongst the fleet of wastage being the bane of continued operations, the rank structure of both officer and enlisted sections is streamlined and carefully controlled so as to not become top heavy as many militaries are wont to do.

There are only two flag ranks in the Agave System Fleet, Fleet Admiral and Vice Admiral. The Fleet Admiral, commander in chief of the entire navy, is also the listed commander of Fleet headquarters and every man, woman and ship that make up its strength. Below this is the rank of Vice Admiral, theoretically the highest rank of the shipboard ranks and important to the command of other important positions. One holds command over the Admiralty-class flagship that is the heaviest ship in the System Fleet, while another controls the systems shipyards, and a third holds the highest rank in the support sections. Commodores hold the highest non-flag officer rank and three of them are the highest ranking officers aboard the Huxley flotilla command ships which are the iconic vessels of the System Fleet. Another three are the commanders of the system's interdiction stations which provide protection and security to passing traffic between flotilla patrols.

Captain is the lowest of the command ranks in the System Fleet. While there are many captains, and several other ranks below it including two ranks of lieutenant, only eleven of them hold command of a ship on the somewhat prestigious patrol corvettes. After them are the somewhat less prestigious but still vital captains who have command of the defence stations, of which there are another ten at the current time. They go where they are needed but for the majority of the time these positions are mainly administrative in their purpose. A further three are the squadron commanders and combine both command rank and flight experience as they lead the three fighter squadrons aboard the interdiction stations. These three officers hold a second hat as the senior officer aboard these stations although they are normally supported by an experienced executive officer.

OTHER MILITARY FORCES

Supporting the Agave System Fleet are the oft-under utilised but manpower intensive ground forces that garrison the three worlds against invasion and insurrection. Drawn from the nearly three and a half thousand men and women who make up the remaining military strength available to the Agave military, they combine defence and police duties as part of their mission statement. Their active strength is a little over 800 troops organised into four 200 strong companies, each of which maintains a support staff of nearly one thousand. These numbers are gathered from across all three worlds and deployed carefully across all. Due to the ground forces use as peacekeepers if and when violence breaks out on one of the worlds, military planners are wary to deploy formations back to the planet from which they were formed in the first place.

Agave armed forces are relatively famous in nearby systems for being excellent combat troops when fighting is to be done on worlds with dangerous environments. Their infantry strength is small but they have proven themselves time and again to be especially effective on worlds hazardous to any soldier not ready for toxic atmospheres and aggressive predators. The

Agave military command have realised that bolstering their coffers by assisting their nearby allies in return for certain financial and trade benefits allow them to strengthen their forces considerably with expensive equipment and supplies.

Formation of the Agave Ground Forces
- 1st and 2nd Line Company
  - 2 x Infantry platoons (100 soldiers)
  - 1 x Mechanised platoon (5 IFV's, 40 soldiers)
  - 1 x Armour platoon (10 MBT's)
- 1st Defence Company
  - 2 x Infantry platoons (100 soldiers)
  - 2 x Orbital defence platoon (12 guns, 40 soldiers)
- 1st Mobile Company
  - 1 x Infantry platoon (50 soldiers)
  - 2 x Marine platoons (100 soldiers)
  - 1 x Fast Response platoon (10 LAV's)

A formation perfected over decades of hard training and careful administration, the four companies of the Agave Ground Forces are well-trained, equipped and maintained. Split into four companies of two hundred active duty soldiers, the formations are the definition of cross-unit integration and specialisation. The integral part of each company is its infantry platoons, of which there are seven over the entire force. 350 soldiers divided into ten man sub-units make for an effective and easily divisible front line fighting force which can be even further divided into five man fire teams. One of the core concepts of the infantry platoons are the enlisted officers, low ranking NCOs who can lead and plan effectively in the combat zone to make sure even at the smallest division the Agave Ground Forces are able to maintain cohesion and fighting spirit. Armed and armoured in the most advanced equipment the system can produce, the infantry platoons are the centre of every battle plan with all other units acting around them.

Both the mechanised and marine platoons are modifications to the core infantry platoon concept. Where the infantry are trained and equipped to hold the line and fight on, the mechanised platoon utilises armoured vehicles as transports and direct fire support, while the marine platoons are trained in both shipboard fighting and orbital assault and support operations to create beachheads and maintain them until the rest of the infantry can arrive. While the System Fleet is not equipped for large scale marine operations, they have acted alongside navies that can and are considered a useful allocation of resources.

The armoured and fast response platoons are similar in their make-up but their missions are wildly divergent. The vehicles which make up the armoured platoon are well-armoured and intended to survive heavy enemy fire while maintaining fire from their own powerful weaponry. On the other hand, the fast response platoons' vehicles are lightly armoured and considered

under-gunned by many, but are incredibly fast compared to the other vehicles of the Agave Ground Forces, and make for excellent scouts and raiding vehicles. Each is organised into three platoons of three vehicles each with a single command vehicle equipped with command and control equipment, along with its own weaponry. Both platoons' vehicles, and indeed all of those used by the AGF, are environmentally sealed so they can deploy to any world in the system, and the majority are propelled by gravitic drives to allow for easier deployments and movement on the harsh worlds.

The most unusual of the Agave Ground Forces formations are the pair of Orbital Defence platoons which make up half of the defence companies' strength. Each of the 50 strong platoons has a battery of six weapons capable of reaching and attacking a vessel in orbit. The weapons are a mix of lasers, missile launchers and even kinetic weapons, and both platoons have two squads of infantry to support and defend these vital assets should war come to Agave. In military exercises, the batteries have proven capable of doing significant damage to even one of the Huxley-class vessels in a very short period of time. The platoons are normally split across all three worlds by sections of two guns each but it is rare for any planet by Agave Prime to have more than two sections deployed at any one time. More often than not, Prime has a full platoon deployed while the other worlds split a platoon's worth of guns between them.

OTHER SETTINGS

Agave is not the only station heavy setting possible in Traveller. Many other systems primarily use space stations to hold their infrastructure and population, some examples of which are covered below:

- An empty system holds a single refuelling station, rotating slowly around the only gas giant present. Perhaps they are being threatened and need defending from raiders or have taken severe damage in an accident and require assistance with repairs and resupply.
- A trio of million ton space stations spin around each other in a strategically vital but planetless star system. Construction yards, trading docks, and most importantly, a military base with the capacity for an entire war fleet. The system needs a fleet of trade ships to keep it running, bringing supplies in and taking away all products such a group can create.
- Some larger stations can comfortably rest inside the atmosphere of a gas giant, orbiting fast enough to hold themselves at a steady distance. It is rare, but without inhabitable planets, the occasional system will have strings of these. These so called cloud cities glitter elegantly in the colourful skies of a gas giant, often having huge clear sections built into their hulls to allow the occupants to view the sweeping vistas.
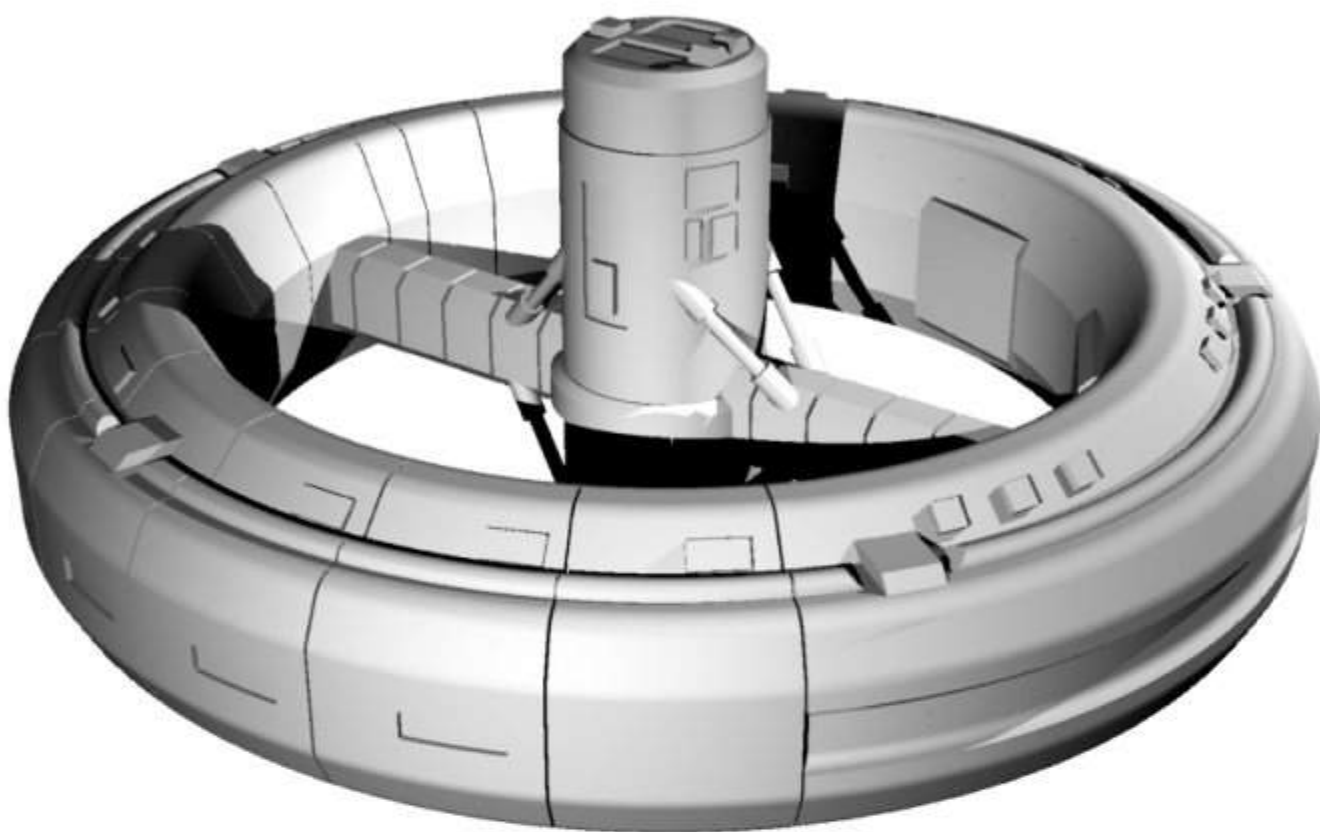
SPACE STATIONS

ANTIQUE STATION

The development of an orbital infrastructure has to start somewhere for any system and for most it is in the form of what soon become known as antique stations. Few will mount much in the way of useful facilities as they are normally intended more as a first foothold in space than a serious piece of orbital architecture. The few that have some small area equipped to provide internal gravity will normally do so in the form of a pair of counter-spun rings such as the station presented here. This station may be built at TL 7.

Antique Station			Tons	Cost (MCr)
Hull	200 tons	Hull 1		3.4
	TL 7 NG Hull	Structure 1		
	Hamster Cage	70 tons	7	
M-Drive	Orbital	Thrust 0.25G	1	0.5
P-Plant	Chemical - Orbital		2.8	3.75
Fuel	120 tons	8 weeks of operation	120	
Command			1	0.1
Computer	Distributed/1	Rating 20		5
Electronics	None			
Cargo	42.2 tons		42.2	
6 Staterooms			24	3
Extras	Solar Panels	Prototype	2	0.3
Software	Manoeuvre/0			
	Library/0			
Maintenance Cost (Monthly)				Cr1210
Life Support Cost (Monthly				Cr12,000
Total Tonnage and Cost			200	16.05

	Station			Department	Crew
2D	External	Internal		Command	1
2	Hull	Crew		Engineering	1
3	M-Drive	Computer		Service	1
4	M-Drive	P-Plant		Total	3
5	Hull	Fuel		Passenger staterooms	3
6	Hull	Structure			
7	Armour	Hold			
8	Hull	Structure			
9	Hull	Command			
10	M-Drive	P-Plant			
11	M-Drive	P-Plant			
12	Hull	Critical			

Antique Station

Cargo

Fuel

Spin Machinery

1. Airlock
2. Command
3. Storage Compartment

Iris Valve	⋈	Access Hatch	⊔
Iris Valve Floor	○	Hatch	⋈
Iris Valve Ceiling	⟡	Hatch Floor	⋈
Iris Valve Both	○	Hatch Ceiling	⋈
Power Plant		Hatch Both	⋈
Manoeuver Drive		Solar Panel	■

RESEARCH STATION

Equipped to provide a base of operations for scientific teams, these stations are some of the few built by highly advanced systems to have areas without any provision of gravity. Laboratories span both the inner and outer hulls to provide for any possible experiment the researchers housed within may want to run, but otherwise the stations are simply an engineering bay strapped to housing and control facilities. This station can be built at TL 12.

Research Station			Tons	Cost (MCr)
Hull	500 tons	Hull 5		39
	TL 12 NG Hull	Structure 5		
	Double Hull	150 tons	15	
M-Drive	Geosynchronous	Thrust 0.5G	3.75	1.875
P-Plant	Geosynchronous		6.25	15.625
Fuel	108 tons	12 months of operation	108	
Command			2	0.2
Computer	Distributed/1	Rating 20		5
Electronics	Survey Sensors		10	10
Cargo	75 tons		75	
20 Staterooms			80	10
Extras	Laboratories	100 tons	100	25
	3 x Ship's Boat		90	53.487
	Probe Drones	50 Drones	10	5
Software	Manoeuvre/0			
	Library/0			
Maintenance Cost (Monthly)				Cr13,090
Life Support Cost (Monthly				Cr40,000
Total Tonnage and Cost			500	165.187

	Station	
2D	External	Internal
2	Hull	Crew
3	M-Drive	Computer
4	M-Drive	P-Plant
5	Hull	Fuel
6	Hull	Structure
7	Armour	Hold
8	Hull	Structure
9	Hull	Command
10	M-Drive	Laboratories
11	M-Drive	P-Plant
12	Hull	Critical

Department	Crew
Command	2
Engineering	1
Flight	5
Service	1
Total	9
Passenger staterooms	15

Research Station

Deck 3

Ship's Boat
Ship's Boat
Cargo

Deck 2

Access Corridor
Access Corridor
Spin machinery

Deck 1

Fuel
Cargo
Probe Drones

Cargo
Cargo
Ship's Boat
Common Area
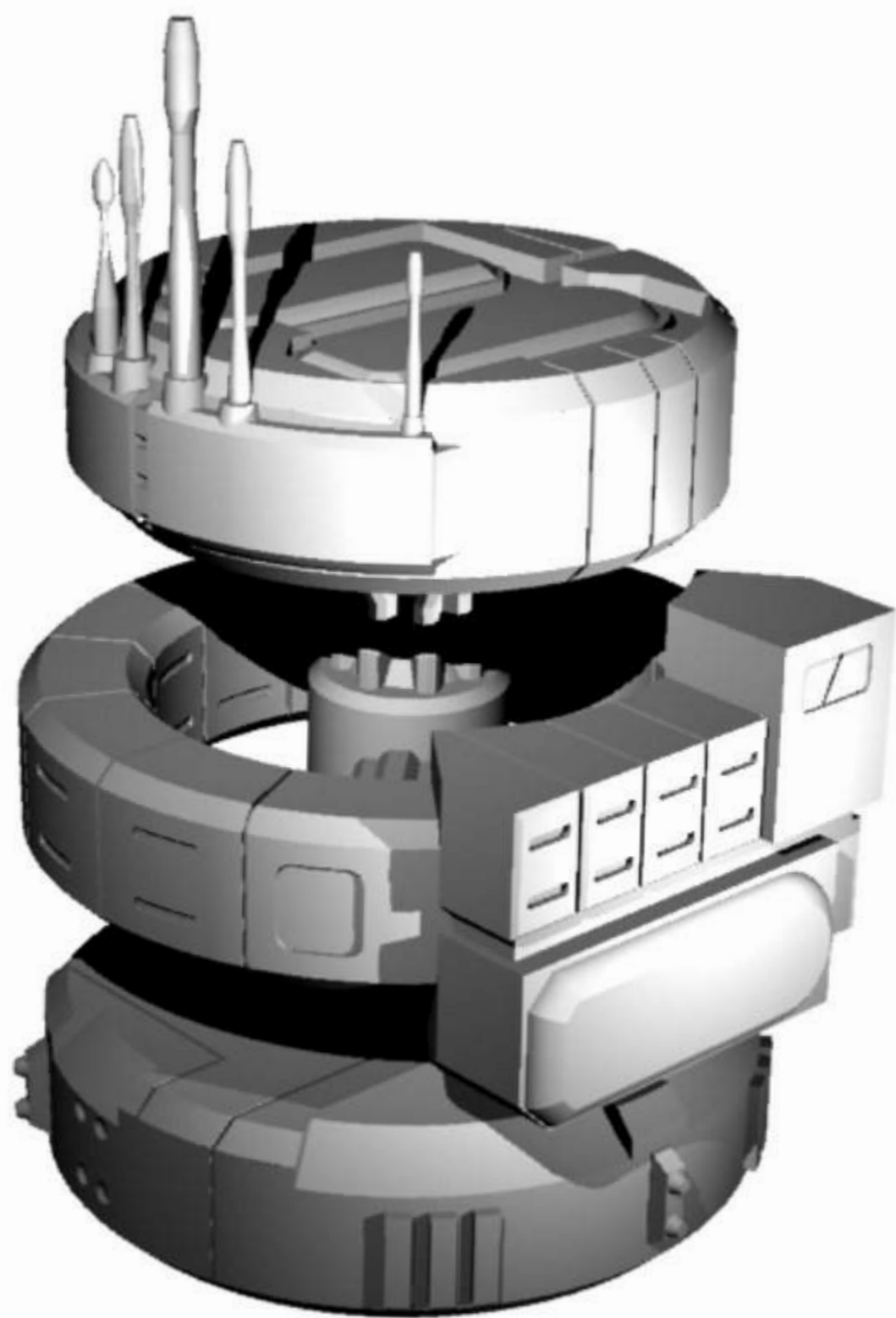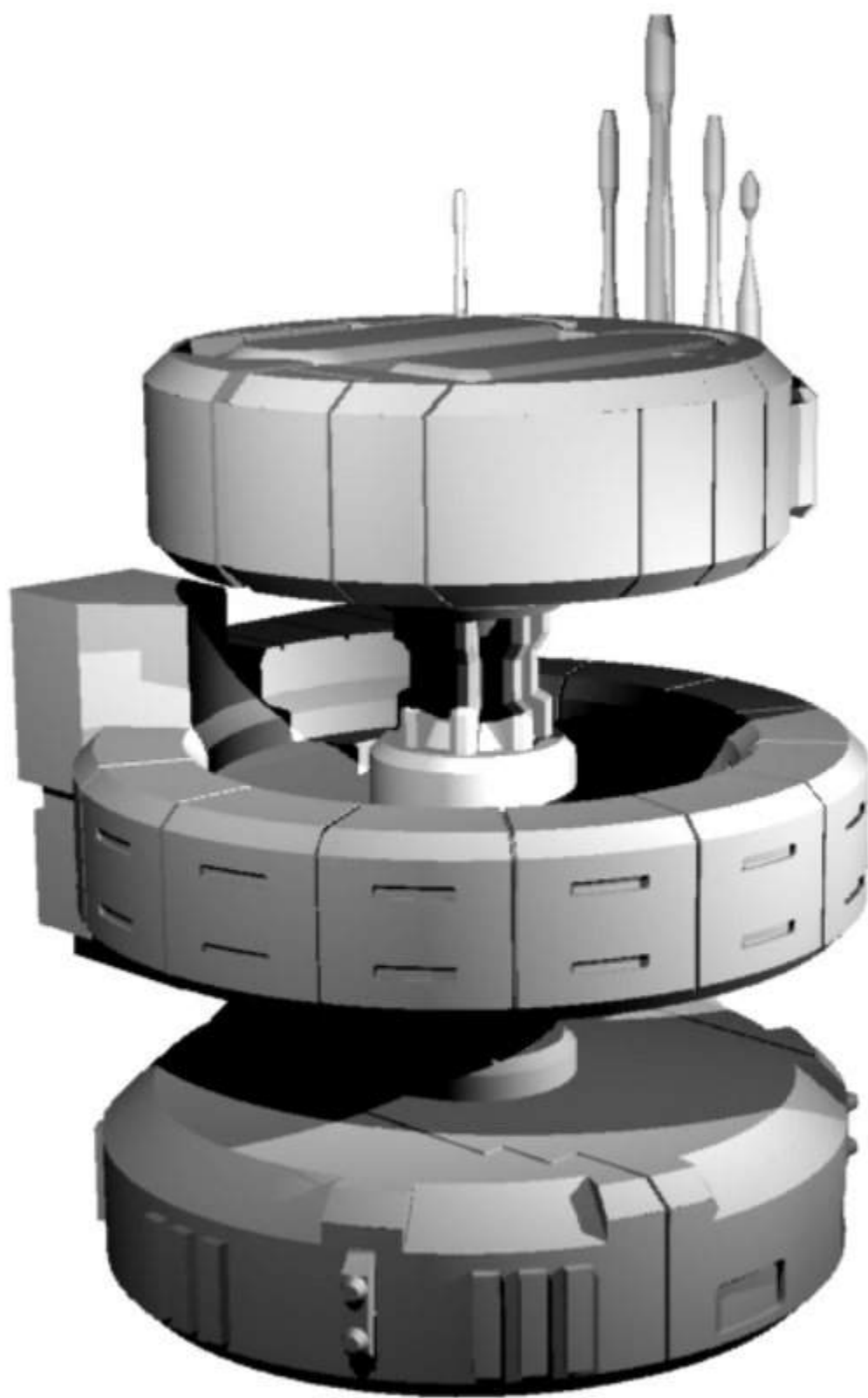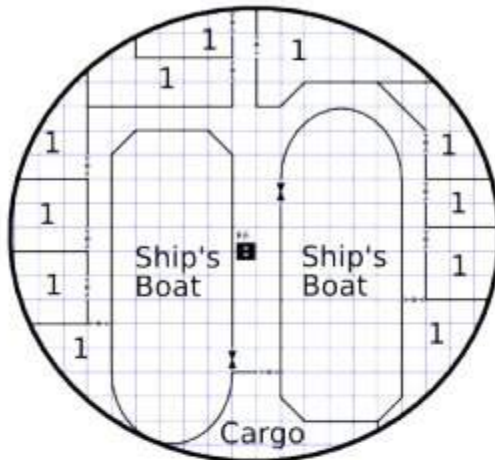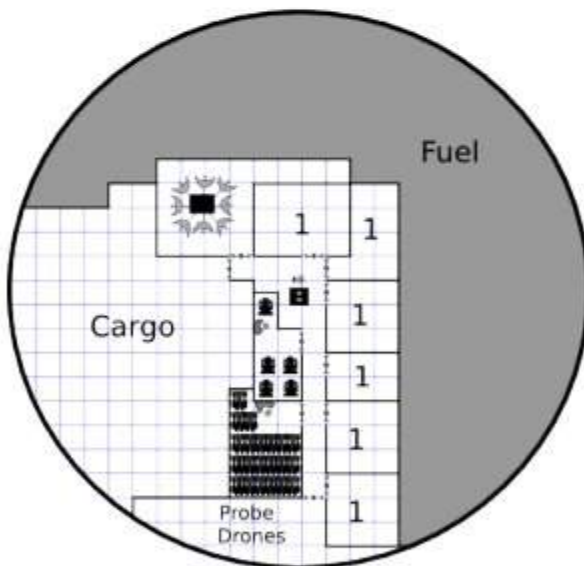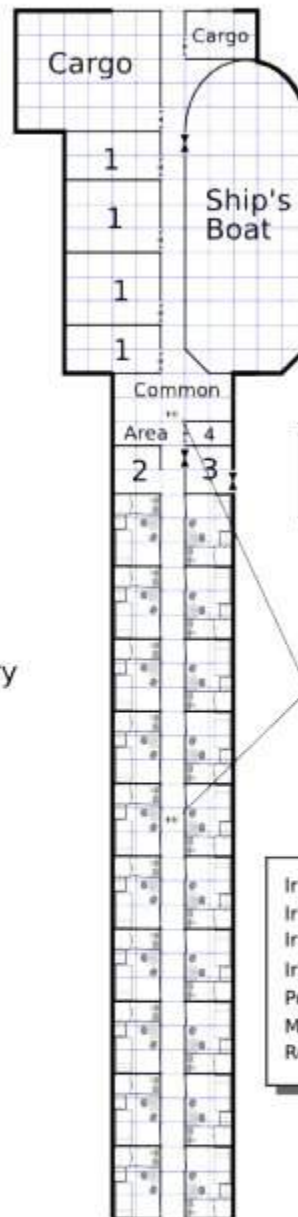
1. Laboratory
2. Command
3. Airlock
4. Storage Compartment

Access to inner hull

Iris Valve	⋈	Access Hatch	⊔
Iris Valve Floor	○	Hatch	⊢•⊣
Iris Valve Ceiling	○	Hatch Floor	••
Iris Valve Both	○	Hatch Ceiling	••
Power Plant		Hatch Both	••
Manoeuver Drive		Lift	▪
Re-entry Capsule		Sensors	▽

Outer hull

Manufacturing Station

The art of making money extends through every aspect of civilisation and that includes space stations. Whether privately owned or state run, manufacturing stations are the production centres of many systems. Artificial gravity is vital to their function and it is only the earliest that will be built without using the grav-plating that is ubiquitous in all space construction once a system is developed enough to produce it. Creating thousands of tons of product per day in the most advanced systems, manufacturing stations are vital to the continuing economic health of most systems. This station can be built at TL 10.

Manufacturing Station			Tons	Cost (MCr)
Hull	2,000 tons	Hull 14		108
	TL 10 Distributed AG hull	Structure 14		
M-Drive	Orbital	Thrust 0.25G	10	5
P-Plant	Orbital		20	50
Fuel	120 tons	18 weeks of operation	120	
Command	2 Standard Modules		8	0.8
Computer	Distributed/1	Rating 20		5
Electronics	Standard			
Cargo	528 tons		532	
20 Staterooms			80	10
Extras	Basic Manufacturing	50 tons basic electronics per day	500	100
	Advanced Manufacturing	20 tons advanced weapons per day	500	200
	2 x Shuttles	Full Hangars	234	104.454
Software	Manoeuvre/0			
	Library/0			
Maintenance Cost (Monthly)				Cr48,571
Life Support Cost (Monthly				Cr54,000
Total Tonnage and Cost			2000	583.254

	Engineering		Command			Department	Crew
2D	External	Internal	External	Internal		Command	5
2	Hull	Crew	Hull	Crew		Engineering	1
3	Hull	Fuel	Hull	Basic Manufacturing		Flight	5
4	M-Drive	P-Plant	Hull	Hangar		Service	4
5	M-Drive	Advanced Manu-facturing	Sensors	Command		Facility	20
						Total	35
6	Hull	Structure	Hull	Structure		Passenger staterooms	0
7	Armour	Hold	Armour	Hold			
8	Hull	Structure	Hull	Structure			
9	M-Drive	Advanced Manu-facturing	Sensors	Computer			
10	M-Drive	P-Plant	Hull	Hangar			
11	Hull	Hold	Hull	Basic Manufacturing			
12	Hull	Critical	Hull	Critical			

Manufacturing Station

Cargo

Basic Manufacturing

Advanced Manufacturing

Fuel

Iris Valve		Access Hatch	
Iris Valve Floor		Hatch	
Iris Valve Ceiling		Hatch Floor	
Iris Valve Both		Hatch Ceiling	
Power Plant		Hatch Both	
Manoeuver Drive		Lift	

1. Cargo Lift
2. Storage Compartment
3. Common Area
4. Office
5. Command

Fuel
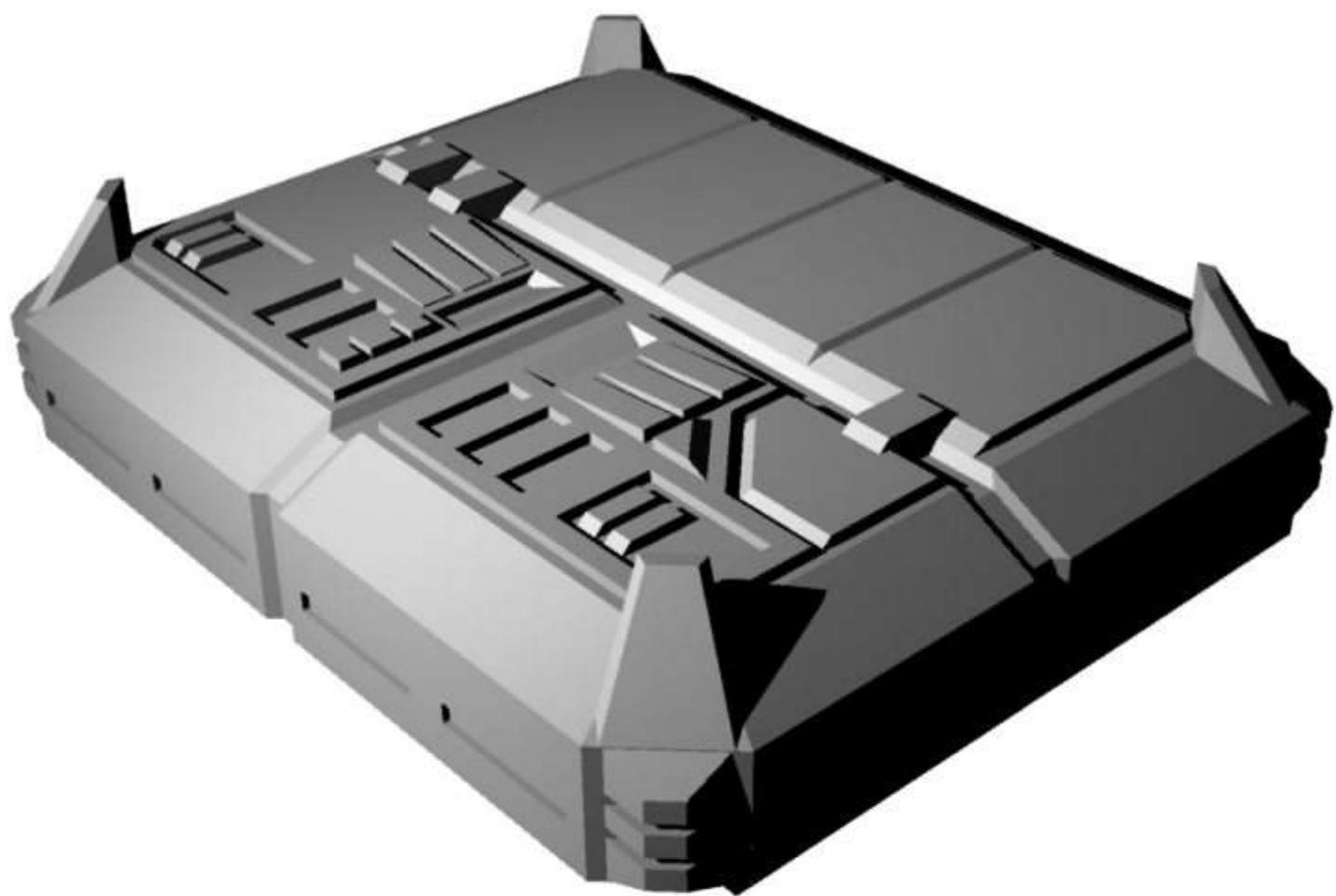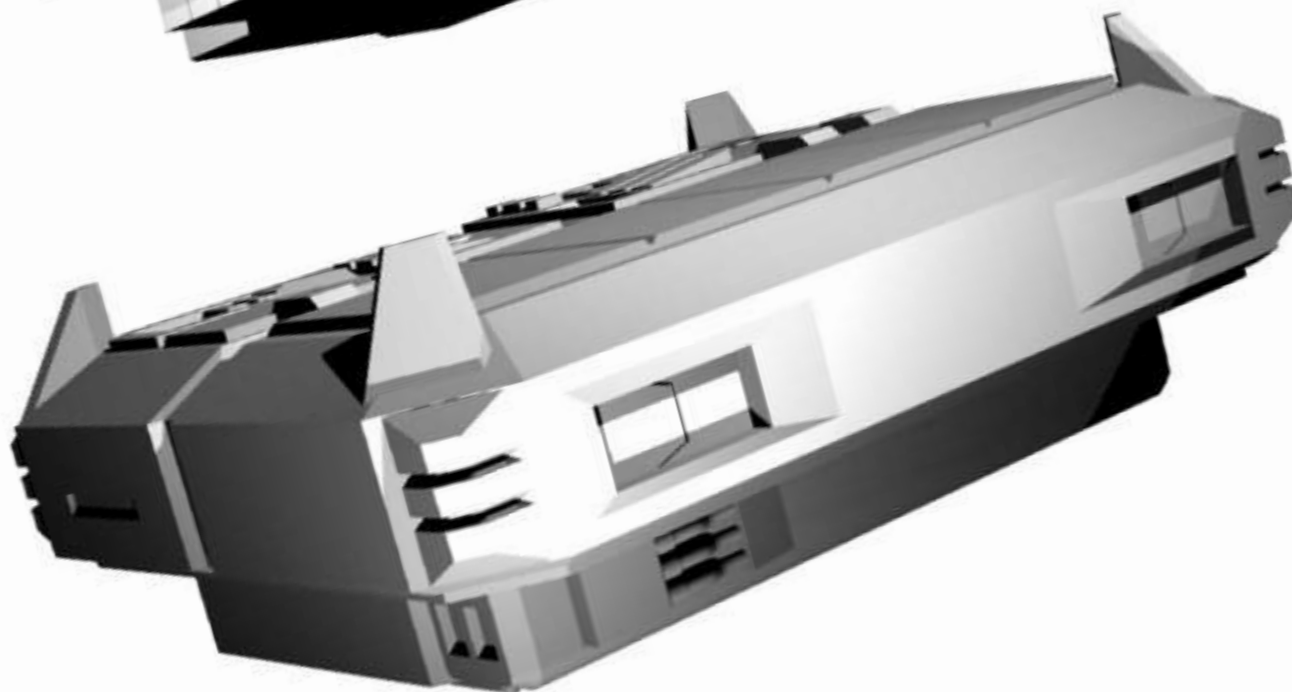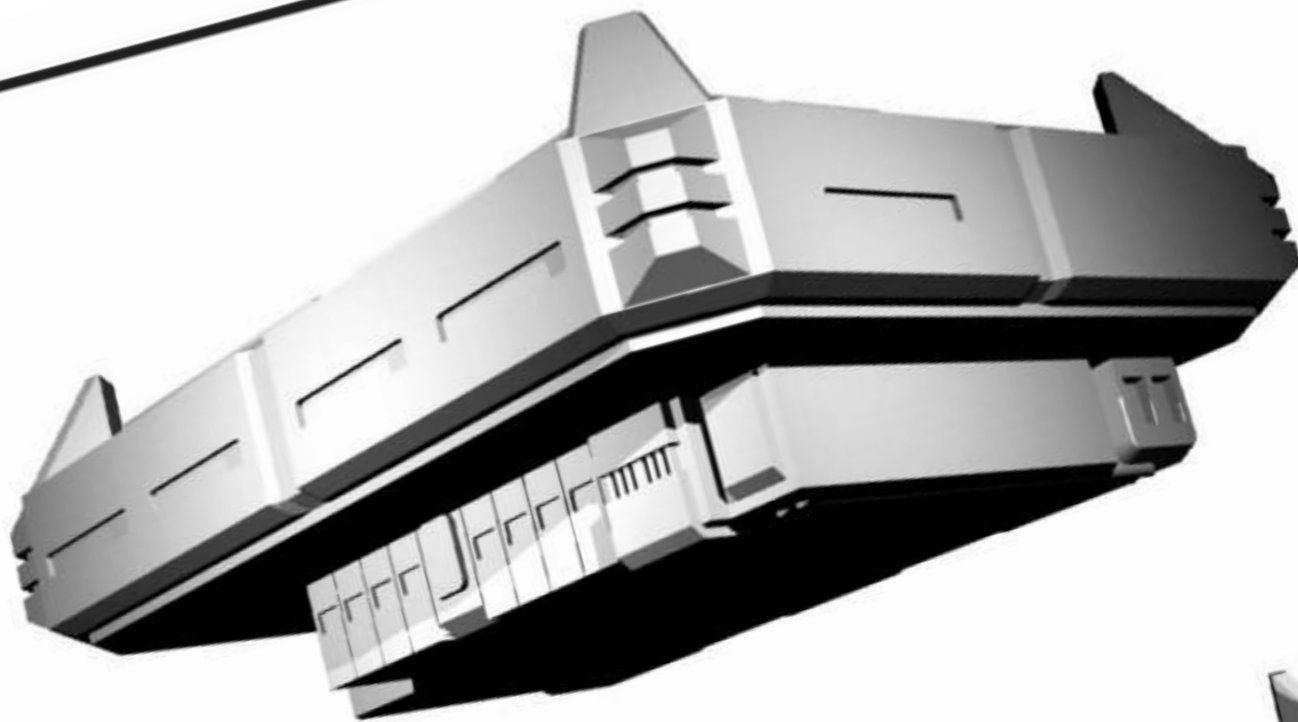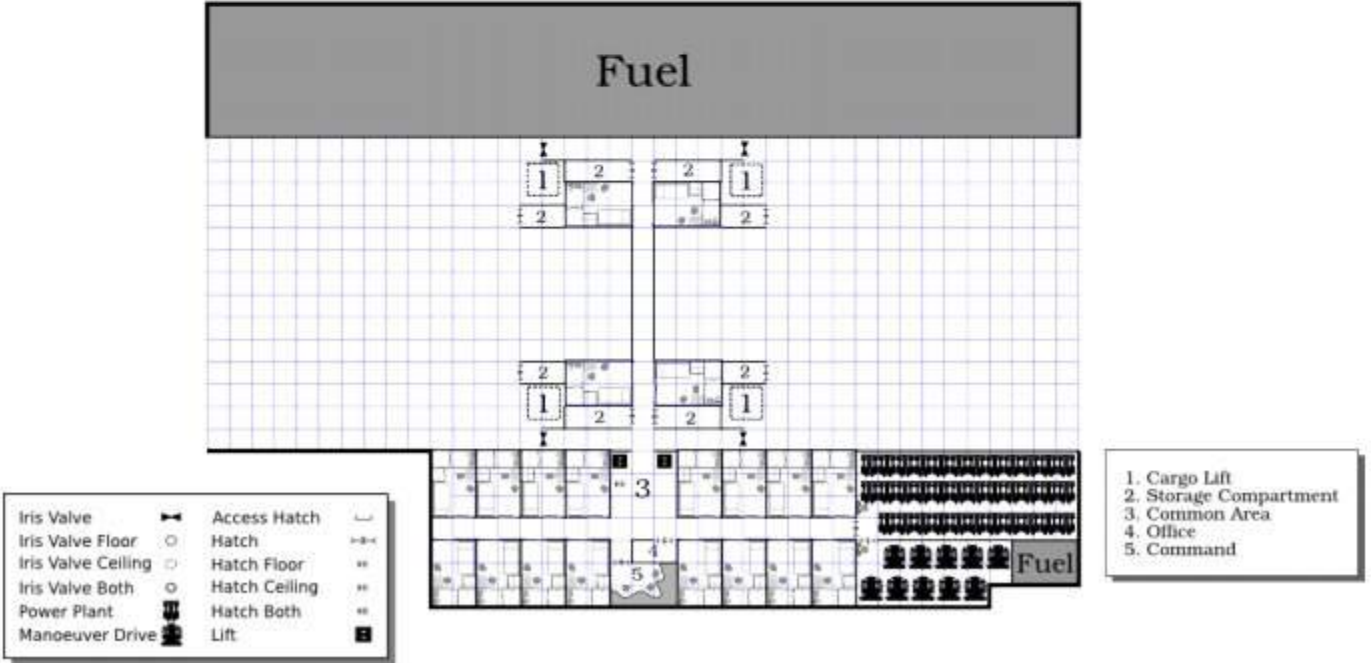
TRADING STATION

Stations built as trade hubs are constructed solely to take, store and distribute cargo to and from passing starships. Some have their own trading halls, others rely on computerised lists to display available cargoes. Most have close relationships with manufacturing and mining stations in order to maintain healthy supplies of tradeable goods to attract merchants with.

Trading Station			Tons	Cost (MCr)
Hull	10,000 tons	Hull 100		1,000
	TL 12 Standard AG Hull	Structure 100		
M-Drive	Geosynchronous	Thrust 0.5G	75	37.5
P-Plant	Geosynchronous		125	312.5
Fuel	333 tons	8 weeks of operation	333	
Command	3 Standard Modules		60	6
Computer	Distributed/1	Rating 20		5
Electronics	Advanced		3	2
Cargo	2712 tons		2712	
45 Staterooms			180	22.5
Extras	Residential Space	Low quality: 100, Mid quality: 100, High quality: 40, Luxury accommodation: 16	1000	100
	Commercial Space		500	75
	Basic Manufacturing - Semi-automated	120 tons of basic manufactured goods per day	1000	300
	Docking Spaces	1 x 200 ton bay, 1 x 100 ton bay	900	225
	Docking Arms	4 x 10,000 ton	2000	200
	Re-entry Capsules		50	7.5
	10 x Launches	Full Hangers	260	187.69
	6 x Ship's Boats	Full Hangers	234	153.774
	4 x Shuttles	Full Hangers	468	208.908
Software	Manoeuvre/0			
	Library/0			
Maintenance Cost (Monthly)				0.24
Life Support Cost (Monthly				0.13
Total Tonnage and Cost			10,000	2,893.372

Department	Crew
Command	8
Engineering	2
Flight	40
Service	20
Facility	20
Total	90
Passenger staterooms	0

Berthing
Small Craft: 40,300
Starships: 40,300
Capital Ships: 40,000
Waiting Time
Small Craft: 1D-5
Starships: 1D-4 (1D-5 on arms)
Capital Ships: 1D-4

Fuel Waiting Time
Small Craft: 1D-2
Starships: 1D-2
Capital Ships: 1D-2

Repair Facilities
Small Craft: 1,000 (Hull)
Starships: 1,000 (Hull)
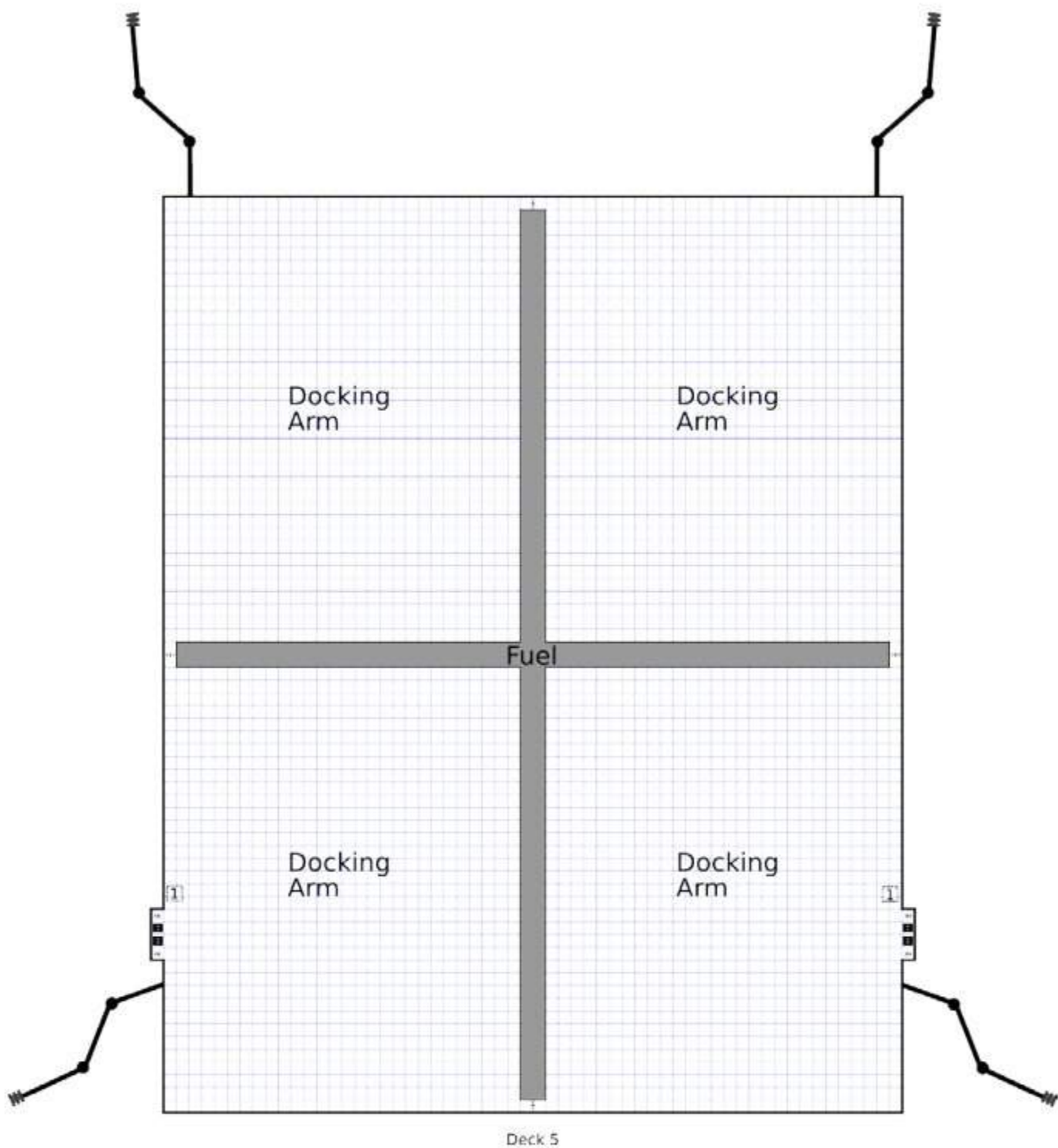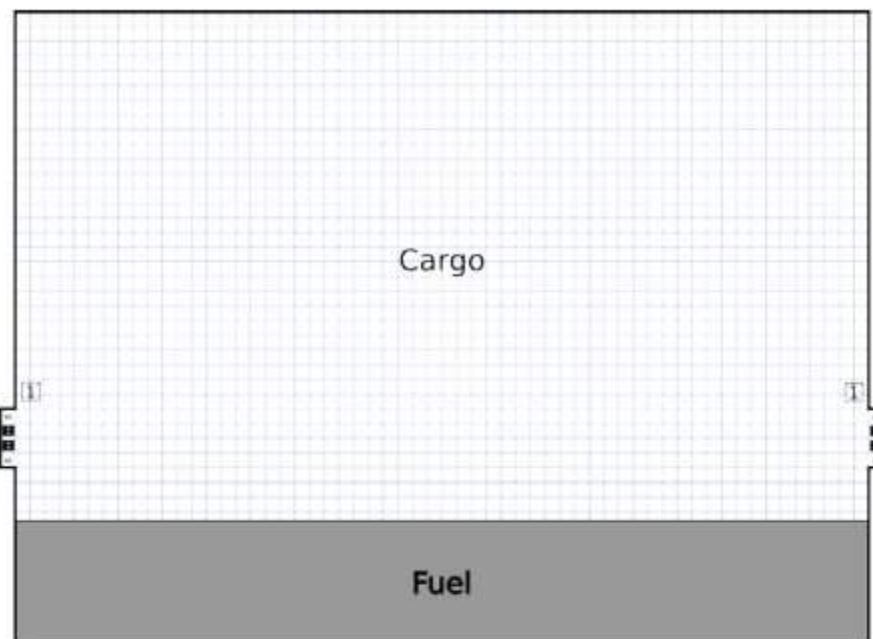**Waiting Time**
Small Craft: 1D-2
Starships: 1D-1

100 ton
docking bay

200 ton
docking bay

Deck 1

Basic
Manufacturing

Commercial
Space

Deck 3

Launch

Launch Launch

Launch Launch

Ship's
Boat

Ship's
Boat

Launch

Launch Launch

Launch Launch

Ship's
Boat

Ship's
Boat

Cargo

Shuttle

Shuttle

1

2

1

**100 ton
docking bay**

**200 ton
docking bay**

Deck 2

Deck 5

Deck 4

Deck 6

Deck 7

Ship's Boat

Command

Ship's Boat

Iris Valve	▶◀	Access Hatch ⌐
Iris Valve Floor	○	Hatch ▶◀
Iris Valve Ceiling	○	Hatch Floor ⋈
Iris Valve Both	○	Hatch Ceiling ⋈
Power Plant	🔧	Hatch Both ⋈
Manoeuver Drive	🔧	Lift 🔲
Re-entry Capsule	⬭	Sensors ⱱ

1. Cargo Lift
2. Cargo Office
3. Storage Compartment
4. Common Area
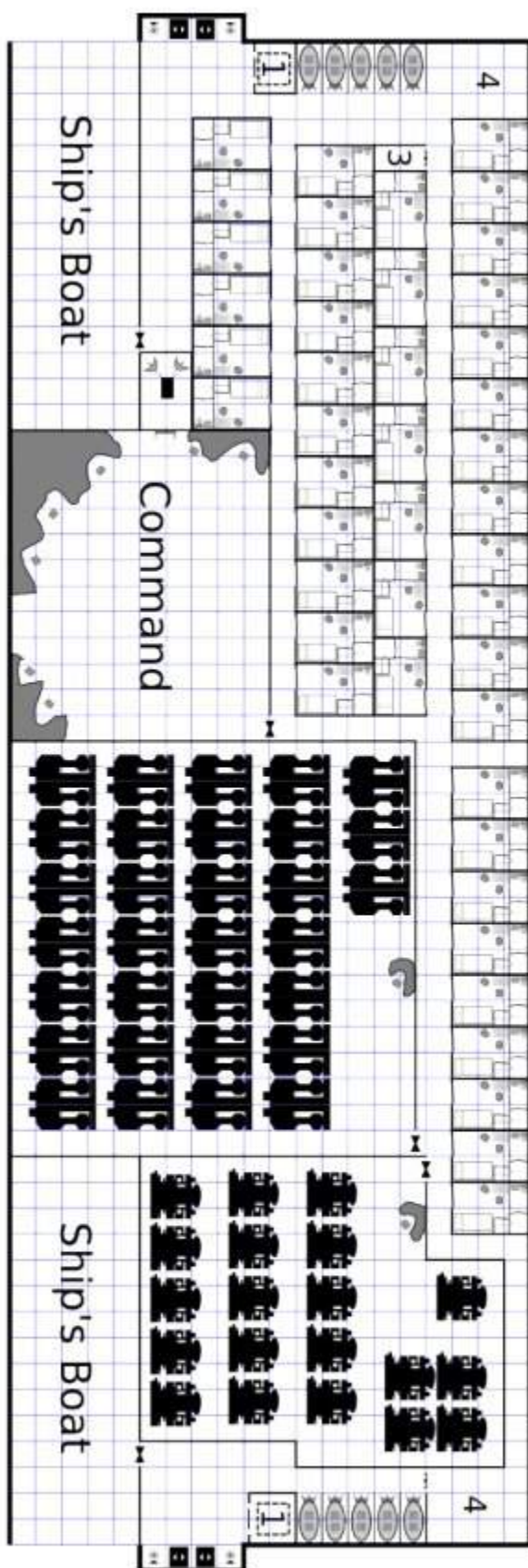
Mining Station

Sometimes called the loneliest of civilian postings, mining stations float alone among the rocks in orbit around hundreds of stars. Work crews toil endlessly to drag resource rich asteroids into their insatiable maws to be broken down, chewed up and processed into the raw materials required for so many of a system's operations. Sometimes small drones and tugs are used to manoeuvre the asteroids, on others it is men and women in pressurised suits and jet rigs who shift them through sheer brute strength. Most of these stations, at least when company owned, are serviced by a fleet of cargo ships in order to move the mass of material which they spit out.
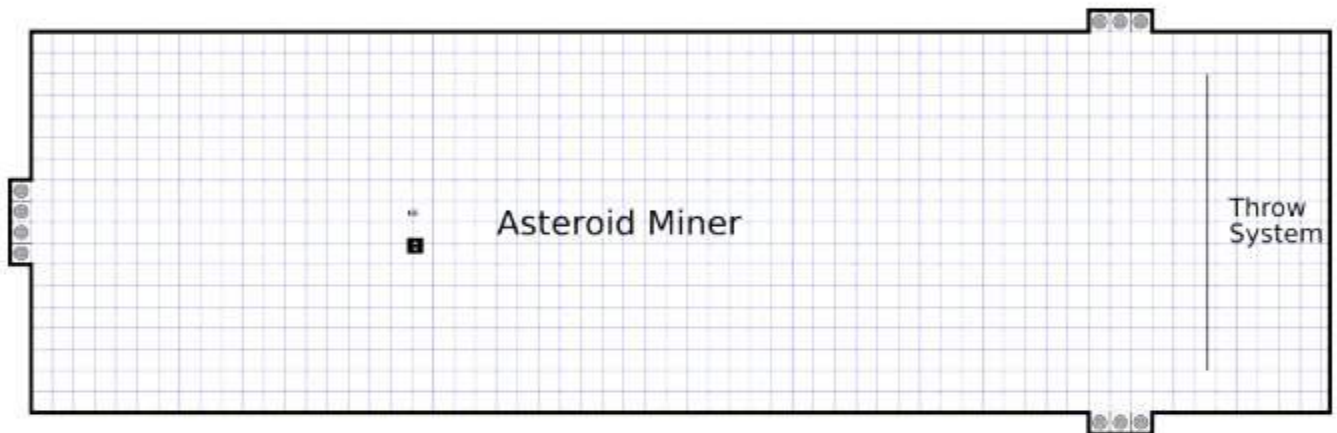
Mining Station			Tons	Cost (MCr)
Hull	2,000 tons	Hull 14		108
	TL 10 Distributed AG Hull	Structure 14		
M-Drive	Non-orbital	Thrust 0.1G	5	2.5
P-Plant	Non-orbital		10	25
Fuel	40 tons	12 weeks of operation	40	
Command	2 Standard Modules		8	0.8
Computer	Distributed/1	Rating 20		5
Electronics	Standard			
Cargo	704 tons		704	
25 Staterooms			100	12.5
Extras	Tug Drones	10 drones (5,000 tons per day)	100	100
	Asteroid Miner - Manual	TL 10 (1,000 tons per day)	500	125
	Throw System		50	2.5
	Escape Pods	30 pods	15	3
	4 x Shuttles	Full Hangars	468	208.908
Software	Manoeuvre/0			
	Library/0			
Maintenance Cost (Monthly)				Cr49,100
Life Support Cost (Monthly				Cr69,000
Total Tonnage and Cost			2,000	593.208

	Engineering		Command			Department	Crew
2D	External	Internal	External	Internal		Command	5
2	Hull	Crew	Hull	Crew		Engineering	1
3	Hull	Fuel	Hull	Mineral Refinery		Flight	25
4	M-Drive	P-Plant	Hull	Hangar		Service	4
5	M-Drive	Hold	Sensors	Command		Facility	11
6	Hull	Structure	Hull	Structure		Total	46
7	Armour	Hold	Armour	Hold		Passenger staterooms	0
8	Hull	Structure	Hull	Structure			
9	M-Drive	Hold	Sensors	Computer			
10	M-Drive	P-Plant	Hull	Hangar			
11	Hull	Hold	Hull	Mineral Refinery			
12	Hull	Critical	Hull	Critical			
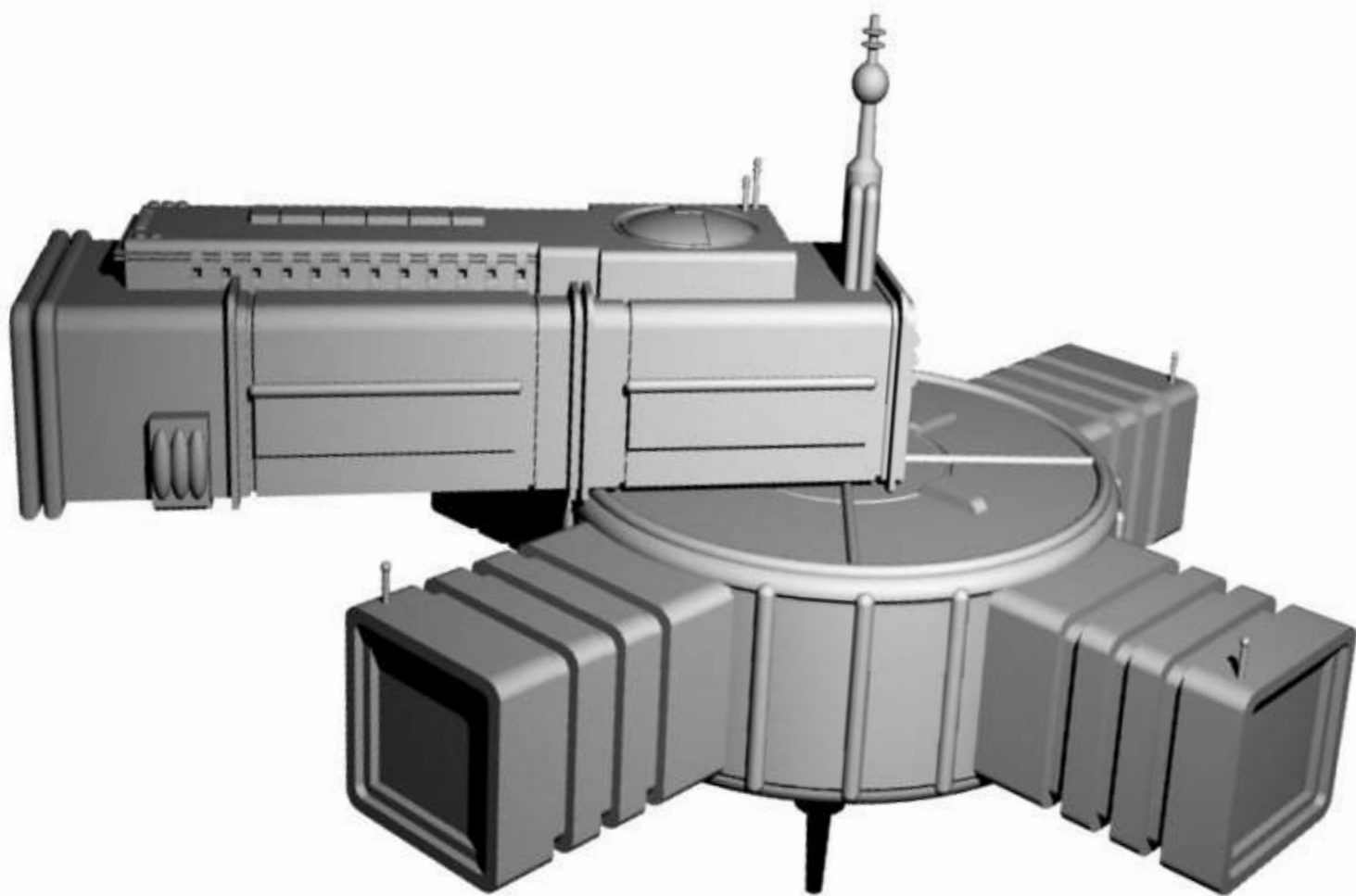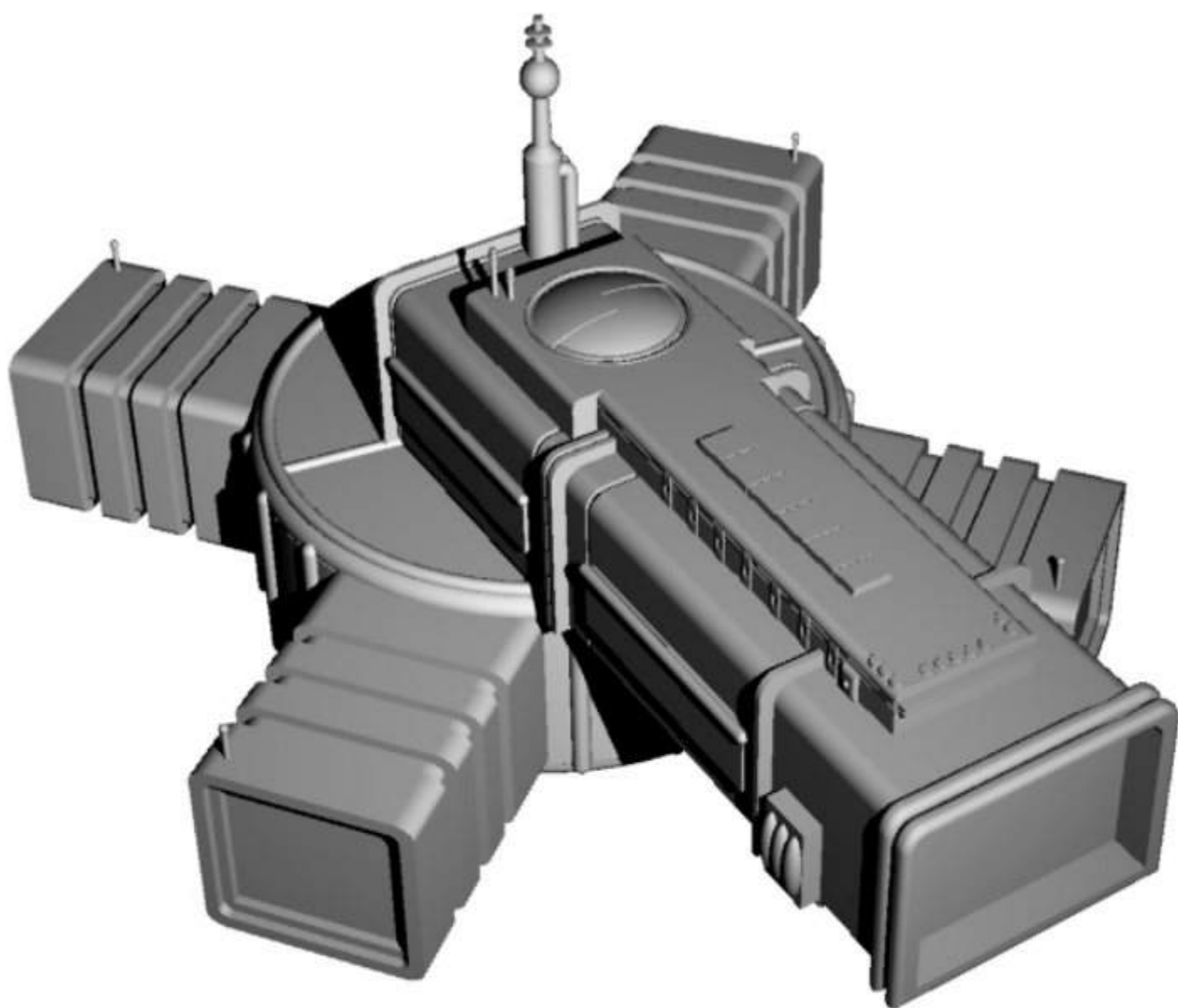
	Engineering		Command		'North'	
2D	External	Internal	External	Internal	External	Internal
2	Armour	Crew	Hull	Crew	Hull	Crew
3	Docking Arms	Basic Manufacturing	Sensors	Docking Spaces	Docking Arms	Docking Arms
4	M-Drive	P-Plant	Hull	Hangar	Sensors	Structure
5	Hull	Fuel	Sensors	Command	Hull	Fuel
6	Hull	Structure	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure	Hull	Structure
9	Docking Arms	Hangar	Sensors	Computer	Hull	Hangar
10	M-Drive	P-Plant	Hull	Hangar	Sensors	Structure
11	Hull	Basic Manufacturing	Sensors	Docking Space	Docking Arms	Fuel
12	Armour	Critical	Hull	Critical	Hull	Critical

Asteroid Miner

Throw System

Deck 2

Tug Pods

Common Area

1

2

Deck 3

Shuttle

Shuttle

Cargo

Shuttle

Shuttle

Deck 1

Iris Valve	⋈	Access Hatch	⊔	
Iris Valve Floor	○	Hatch	⊶	
Iris Valve Ceiling	◌	Hatch Floor	••	
Iris Valve Both	◉	Hatch Ceiling	••	
Power Plant	▓	Hatch Both	••	
Manoeuver Drive	▒	Lift	▪	
Escape Pod	●	Sensors	⌄	
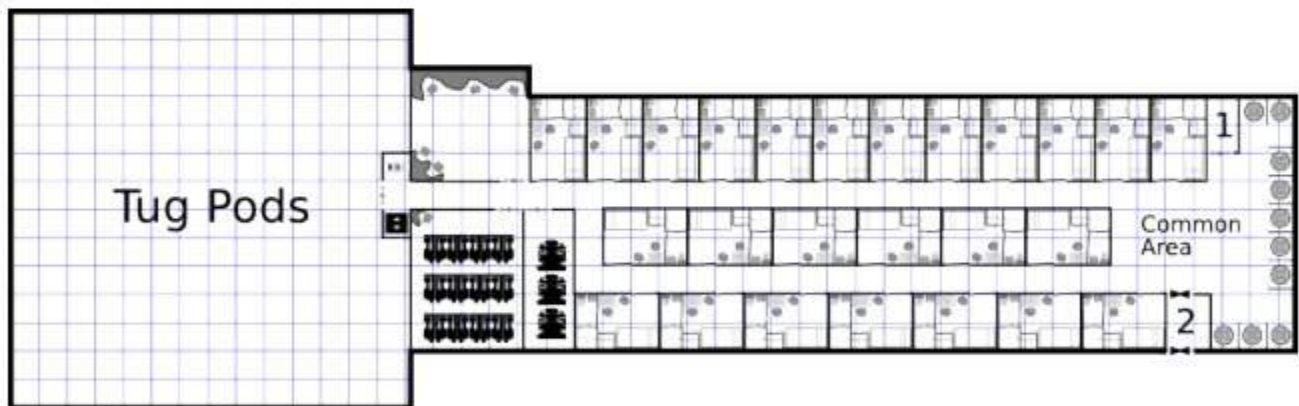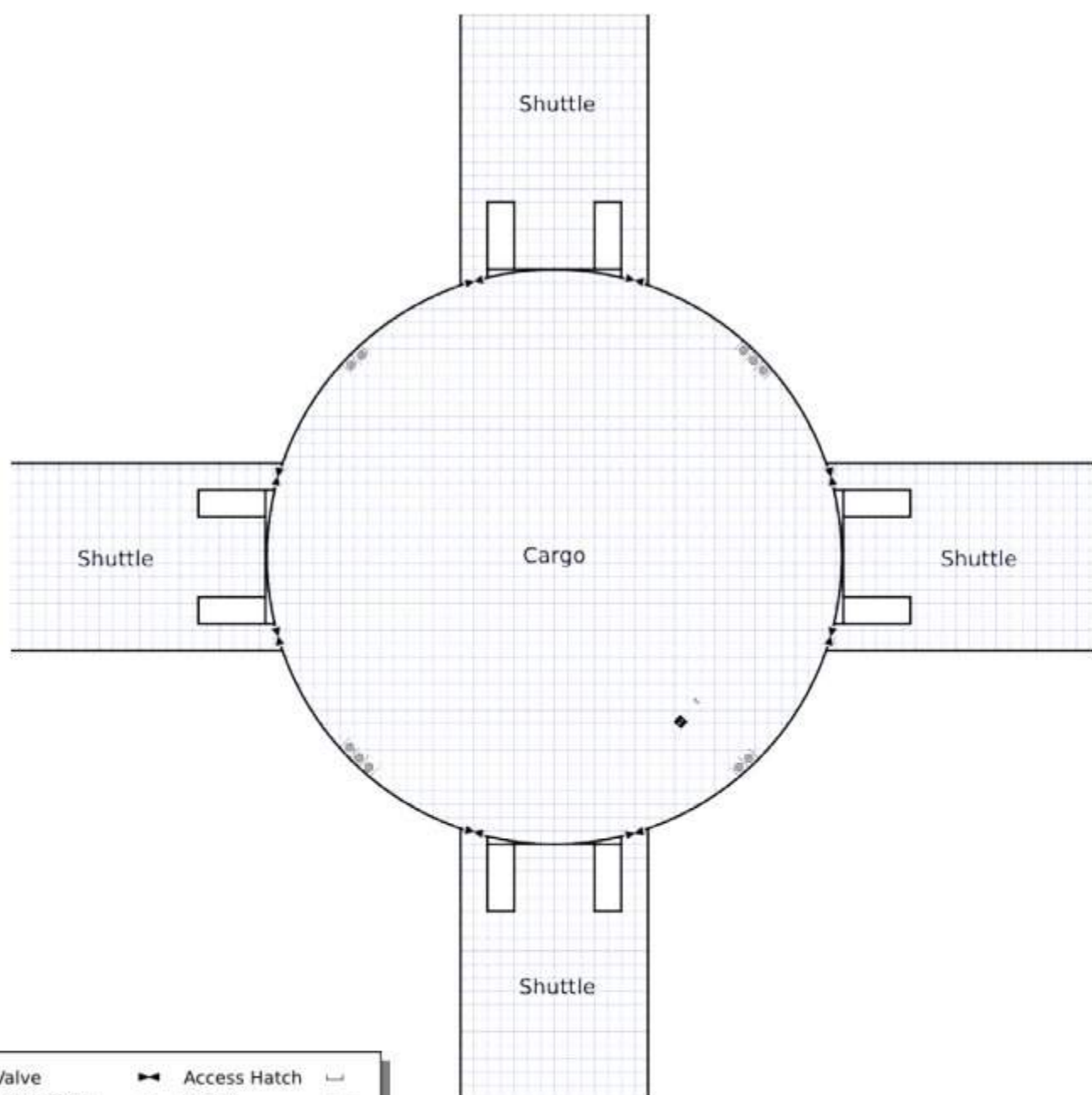
1. Storage Compartment
2. Airlock

CONSTRUCTION STATION

The heart of any space borne empire is the construction facilities that produce ships to speed between systems and hold society together. Public or hidden, enclosed or open to space, spinning in orbit or hidden among the most distant planets, these stations are constantly busy putting together new fighters and fresh starships. Some are run by the military, others by local government, and more still are private concerns that give out space to contracts in return for significant compensation packages.

Construction Station			Tons	Cost (MCr)
Hull	5,000 tons TL 11 Distributed AG Hull	Hull 42 Structure 42		360
M-Drive	Non-orbital	Thrust 0.1G	12.5	6.25
P-Plant	Non-orbital		25	62.5
Fuel	217 tons	26 weeks of operation	217	
Command	2 Standard Modules		20	2
Computer	Distributed/2	Rating 30		7.5
Electronics	Very Advanced	DM+2	5	4
Cargo	267.5 tons		268.5	
63 Staterooms			252	31.5
Armaments	10 x Triple Turret	3 x Beam Laser	10	40
	5 x Triple Turret	3 x Pulse Laser	5	12.5
Extras	Construction Yard	2,000 tons build space	4,000	2,000
	Escape Pods		58	11.6
	Repair Drones		50	10
	2 x Ship's Boats	Full Hangars	78	51.258
Software	Manoeuvre/0			
	Library/0			
	Fire Control/2	Rating 10		4
	Auto-Repair/2	Rating 20		10

Maintenance Cost (Monthly)				0.218,275
Life Support Cost (Monthly				179,000
Total Tonnage and Cost			5,000	2613.108

	Engineering		Command	
2D	External	Internal	External	Internal
2	Hull	Crew	Hull	Crew
3	2 x Pulse Laser Turret	Fuel	Construction Yard	Structure
4	M-Drive	P-Plant	5 x Beam Laser Turret	Hangar
5	Construction Yard	Advanced Manufacturing	Sensors	Command
6	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure
9	Construction Yard	Advanced Manufacturing	Sensors	Computer
10	M-Drive	P-Plant	3 x Pulse Laser Turret	Hangar
11	5 x Beam Laser Turret	Hold	Construction Yard	Structure
12	Hull	Critical	Hull	Critical

Department	Crew
Command	9
Engineering	1
Gunnery	13
Flight	5
Service	15
Facility	80
Total	123
Passenger staterooms	0

Repair Facilities
Small Craft: 2,000 (Full)
Starships: 2,000 (Full)
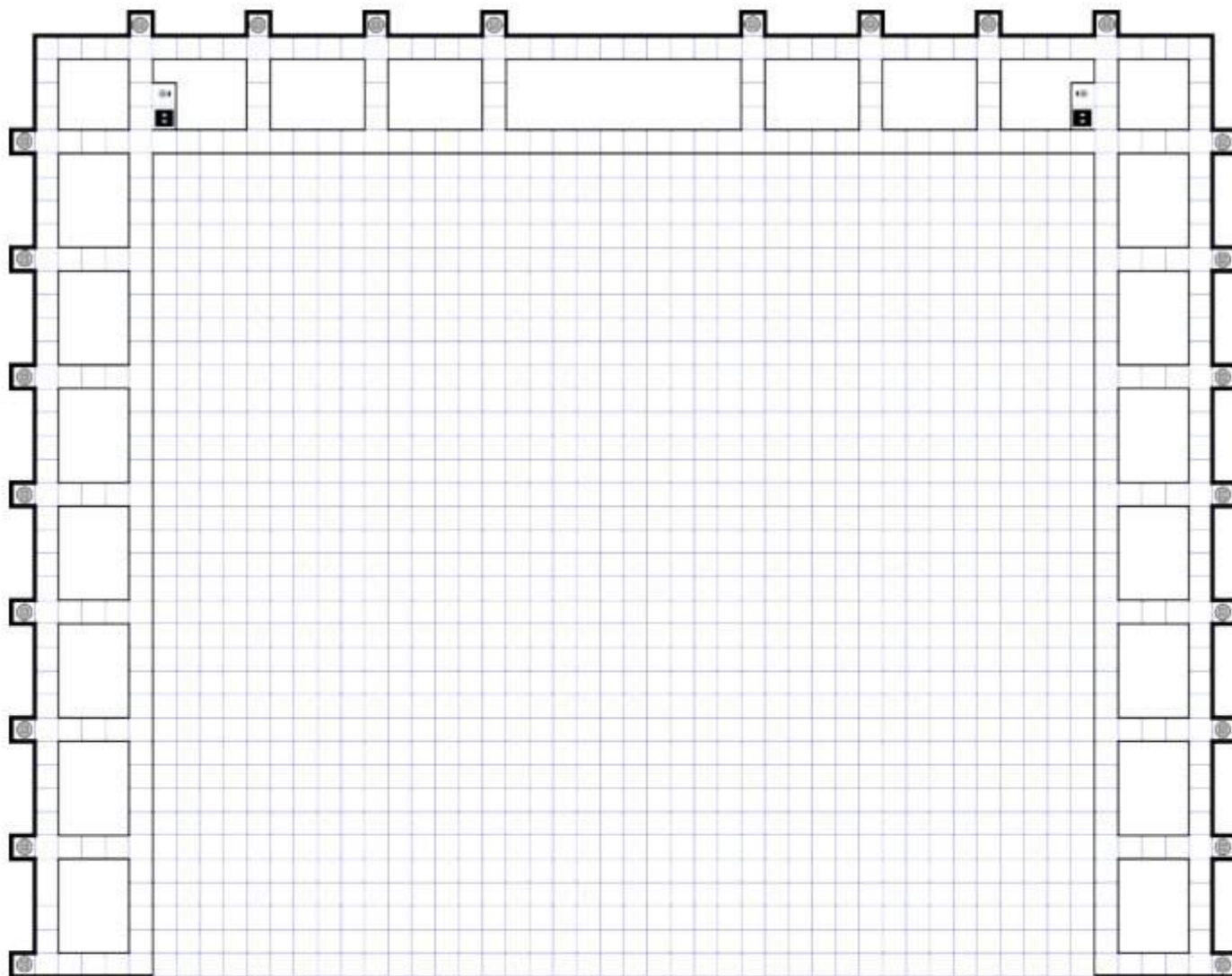**Waiting Time**
Small Craft: 1D-2
Starships: 1D-2
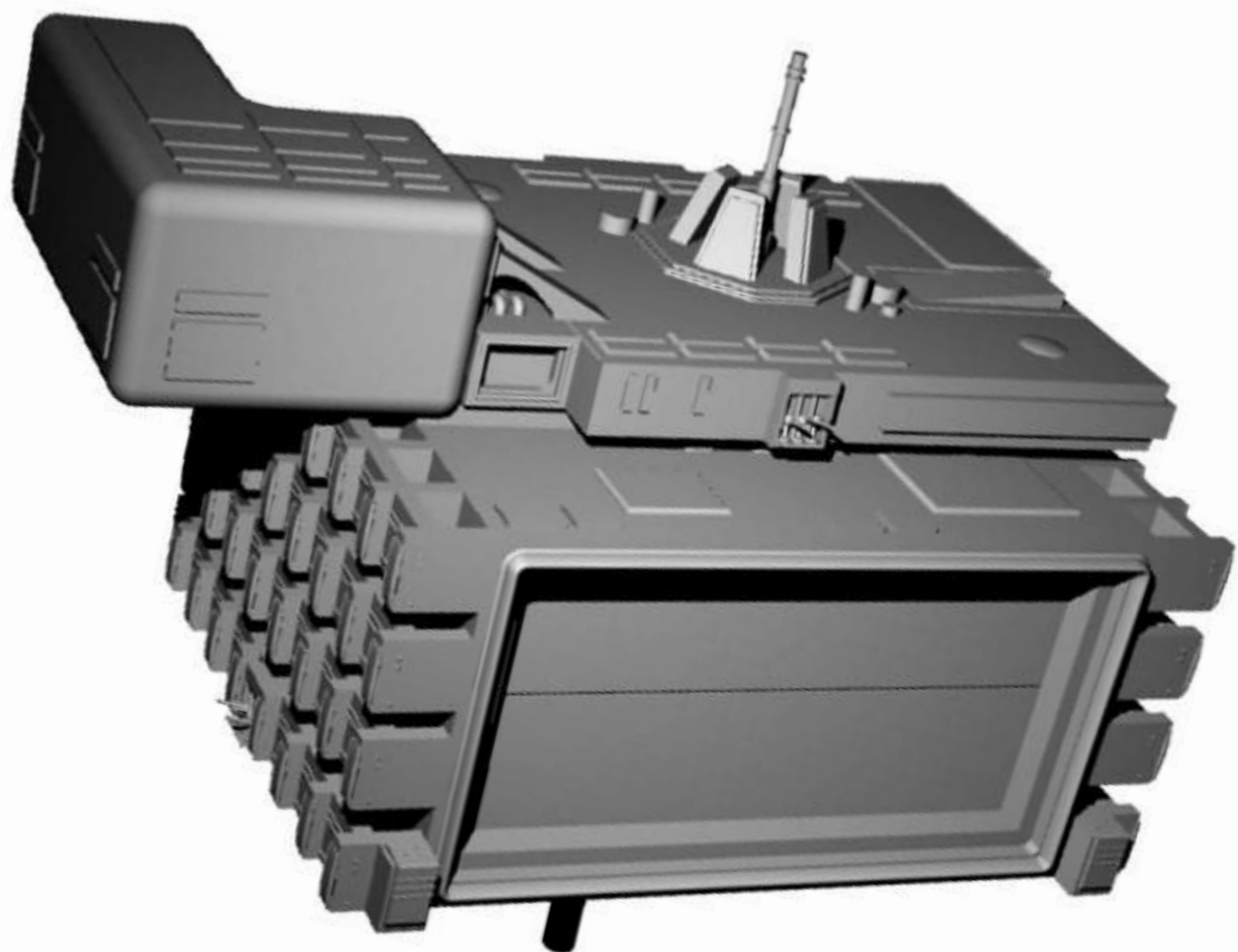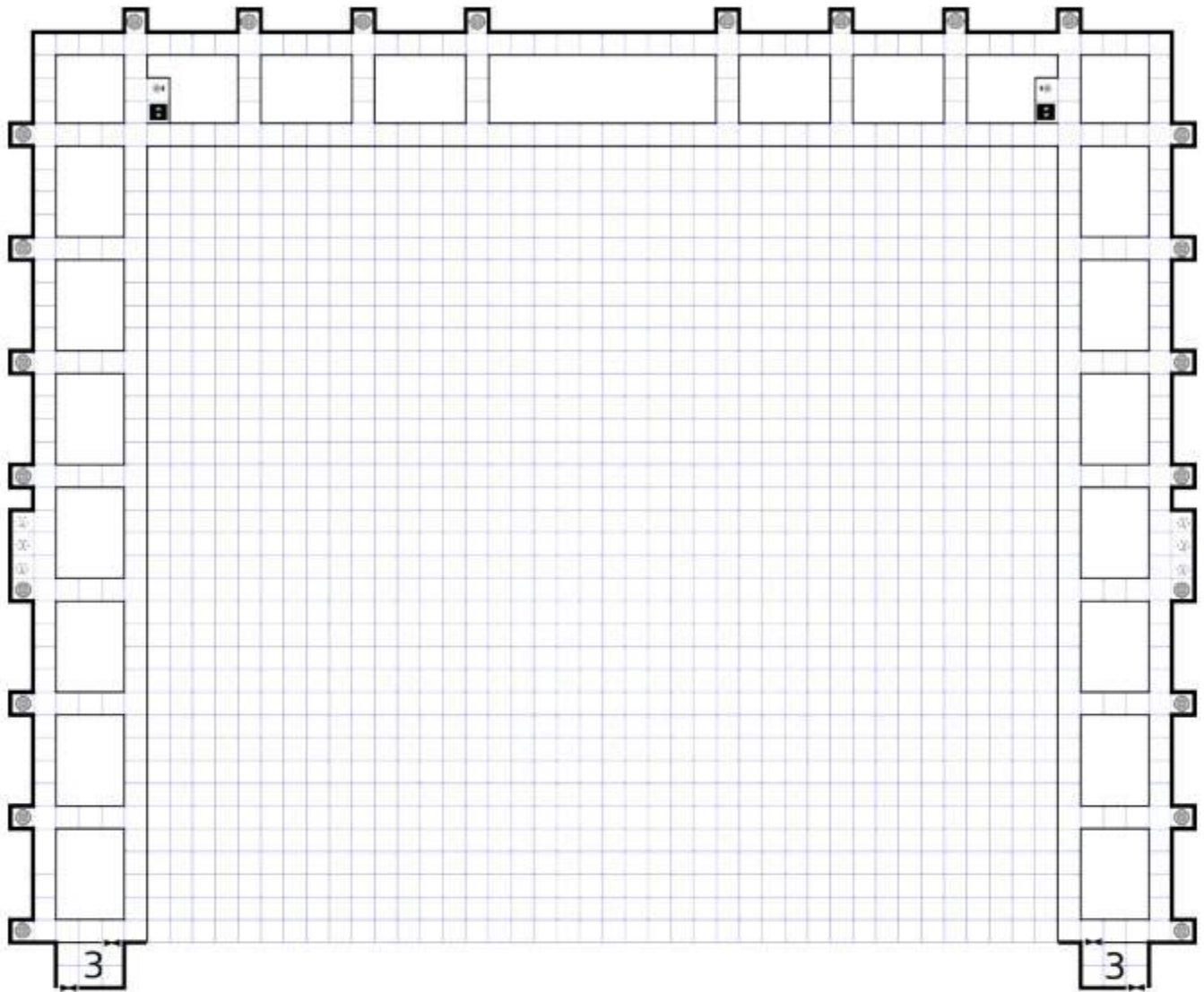
Deck 1

Decks 2-4

Iris Valve		Access Hatch	
Iris Valve Floor	○	Hatch	
Iris Valve Ceiling	○	Hatch Floor	
Iris Valve Both	○	Hatch Ceiling	
Power Plant		Hatch Both	
Manoeuver Drive		Lift	
Escape Pod	●	Sensors	

1. Beam Laster Turret
2. Pulse Laser Turret
3. Airlock
4. Storage Compartment

FLEET STATION

The military variant of a trade station, the fleet station has the capacity to dock and supply thousands of tons of naval vessels at any one time. Docking them internally or externally, stevedores and cargo drones surround ships to bring food, materials and ordnance so warships can keep on flying. Many mount their own fuel refinery so naval vessels do not have to look elsewhere or, more importantly, pay for that most vital of supplies. Others have R&R or habitation facilities for crews on rotation.

Fleet Station			Tons	Cost (MCr)
Hull	10,000 tons	Hull 83		800
	TL 11 Standard AG Hull	Structure 83		
Armour	Crystaliron	12 points	1,500	480
M-Drive	Geostationary	Thrust 1G	100	50
P-Plant	Geostationary		150	375
Fuel	800 tons	16 weeks of operation	800	
	2,000 tons	Starship fuel stores	2,000	
Command	Command Bridge		80	12
	2 Standard Modules		40	4
Computer	Distributed/3	Rating 40		10
Electronics	Very Advanced	Distributed arrays, improved signal processing	16	16
Cargo	570.5 tons		570.5	
67 Staterooms			268	33.5
16 Staterooms			64	8
Barracks	50 Troops		100	10
Armaments	25 x Triple Turret	3 x Beam Laser	25	100
	10 x Triple Turret	3 x Pulse Laser	10	25
	1 x Nuclear Damper		20	30
Extras	6 x Scoop Drones	300 tons input per day	60	60
	Fuel Refinery	300 tons per day	15	1.5
	Docking Spaces	600 ton hangar bay	1,800	450
	Docking Arms	8 x 5,000 ton arms	2,000	200
	4 Briefing Rooms		16	2
	8 Armouries		16	4
	Escape Pods		41.5	8.3
	Repair Drones		100	20
	4 x Ship's Boats	Full Hangars	156	102.516
	Pinnace	Full Hangar	52	30.511
Software	Manoeuvre/0			
	Library/0			
	Fire Control/4	Rating 20		8
	Auto-Repair/2	Rating 20		10
Maintenance Cost (Monthly)				0.24
Life Support Cost (Monthly				0.18
Total Tonnage and Cost			10,000	2850.327

2D	Engineering External	Internal	Command External	Internal	'North' External	Internal
2	Armour	Crew	Hull	Crew	Hull	Crew
3	Docking Arms	Fuel	Nuclear Damper	Docking Spaces	Docking Arms	Docking Arms
4	M-Drive	P-Plant	5 x Beam Laser Turret	Hangar	Sensors	Structure
5	5 x Beam Laser Turret	Fuel	Sensors	Command	5 x Beam Laser Turret	Fuel
6	Hull	Structure	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure	Hull	Structure
9	3 x Pulse Laser Turret	Fuel Refinery	Sensors	Computer	3 x Pulse Laser Turret	Hangar
10	M-Drive	P-Plant	4 x Pulse Laser Turret	Hangar	Sensors	Structure
11	Hull	Hold	5 x Beam Laser Turrets	Docking Space	5 x Beam Laser Turret	Fuel
12	Armour	Critical	Hull	Critical	Hull	Critical

Department	Crew
Command	15
Engineering	3
Gunnery	39
Flight	20
Service	30
Facility	1
Troops	50
Total	158

Passenger staterooms 16

Berthing
Small Craft: 40,600
Starships: 40,600
Capital Ships: 40,000

Waiting Time
Small Craft: 1D-5
Starships: 1D-4 (1D-5 on arms)
Capital Ships: 1D-4
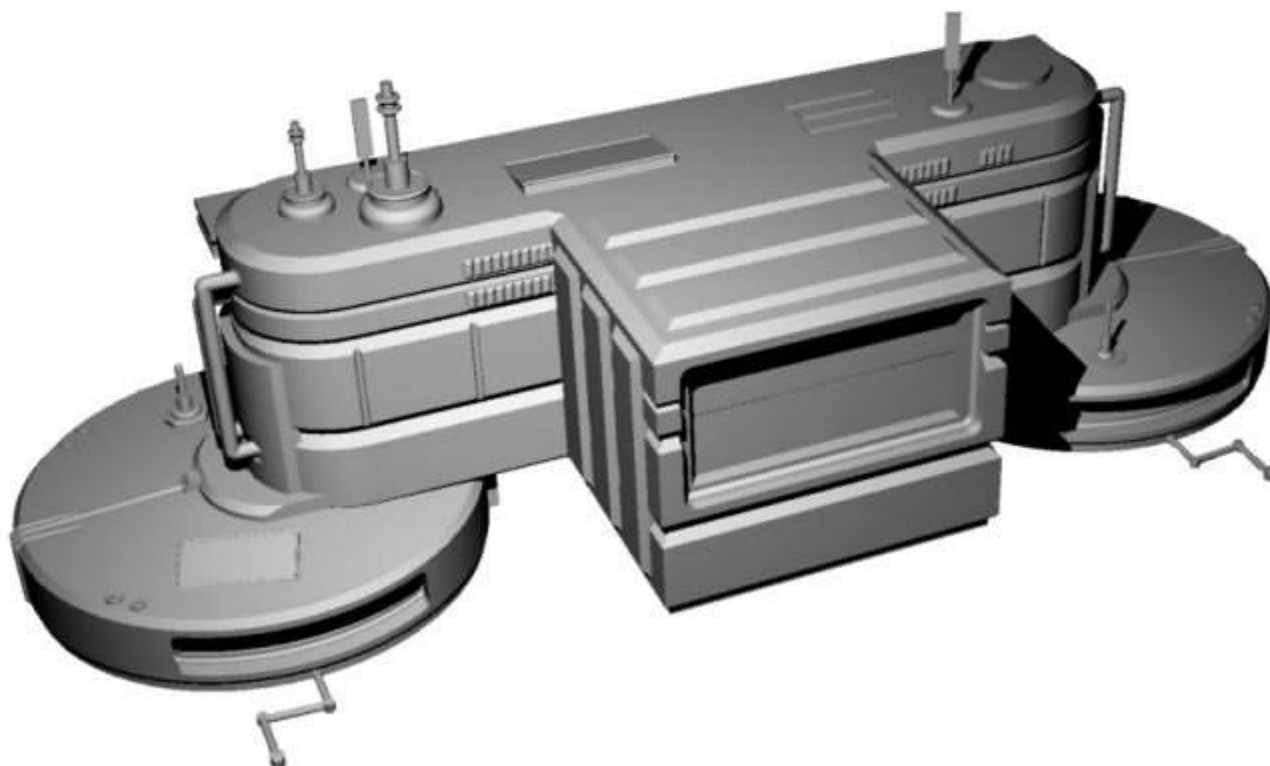
Fuel Waiting Time
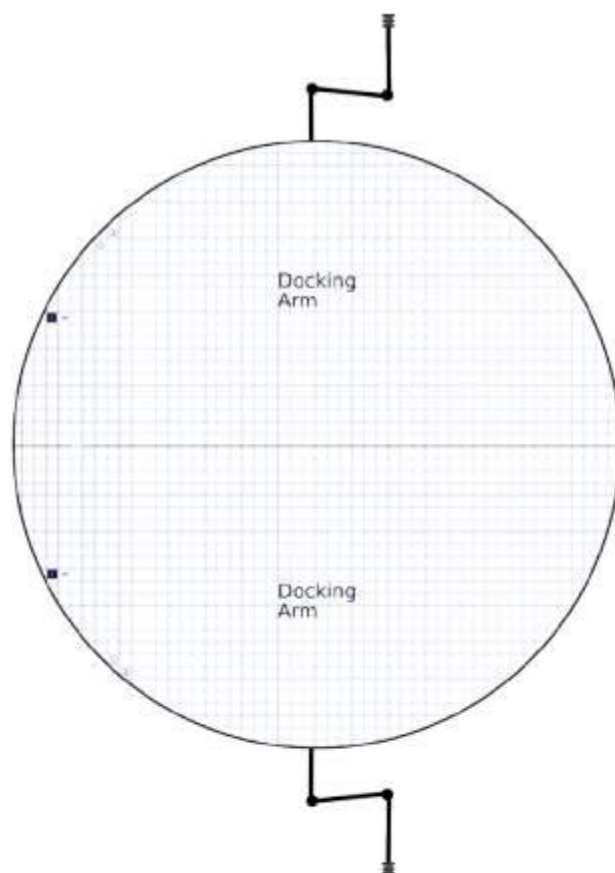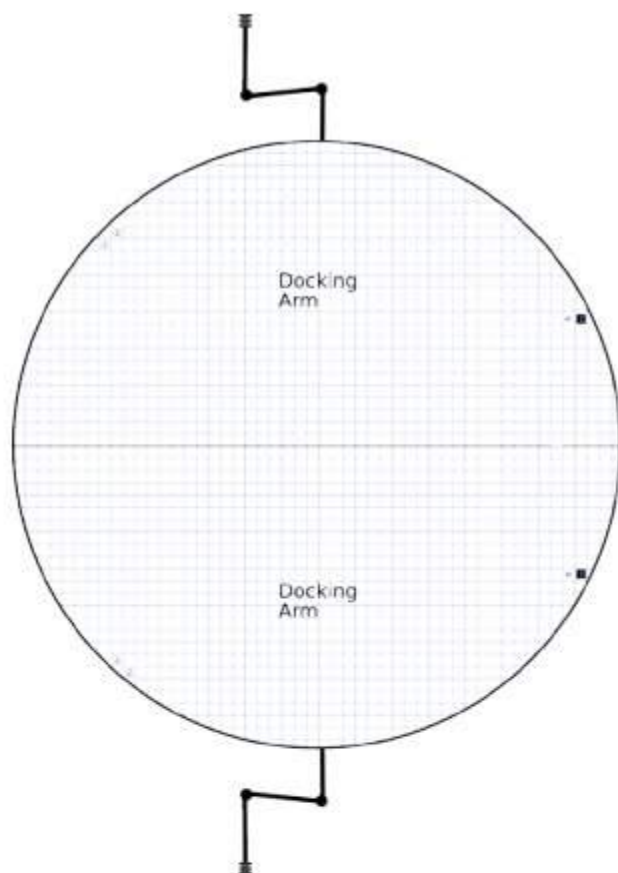Small Craft: 1D-2
Starships: 1D-2
Capital Ships: 1D-2

Repair Facilities
Small Craft: 1,000 (Hull)
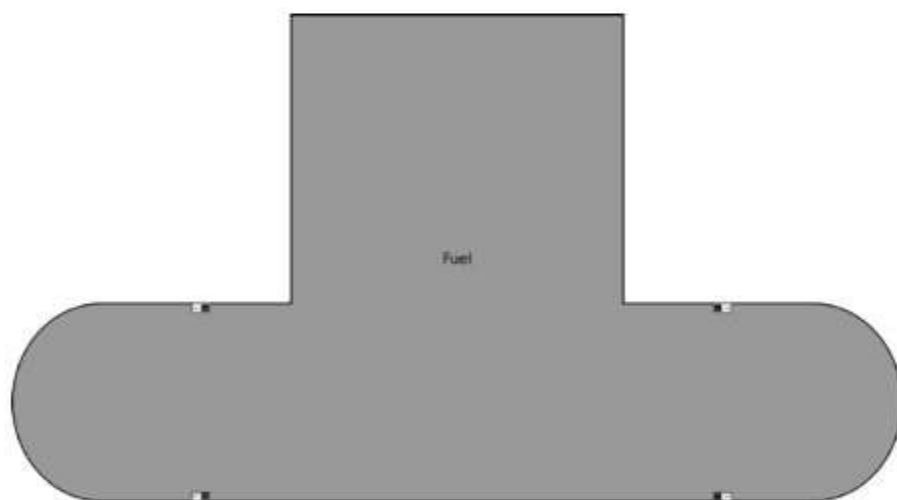Starships: 1,000 (Hull)
Waiting Time
Small Craft: 1D-2
Starships: 1D-1

Deck 1

Deck 2
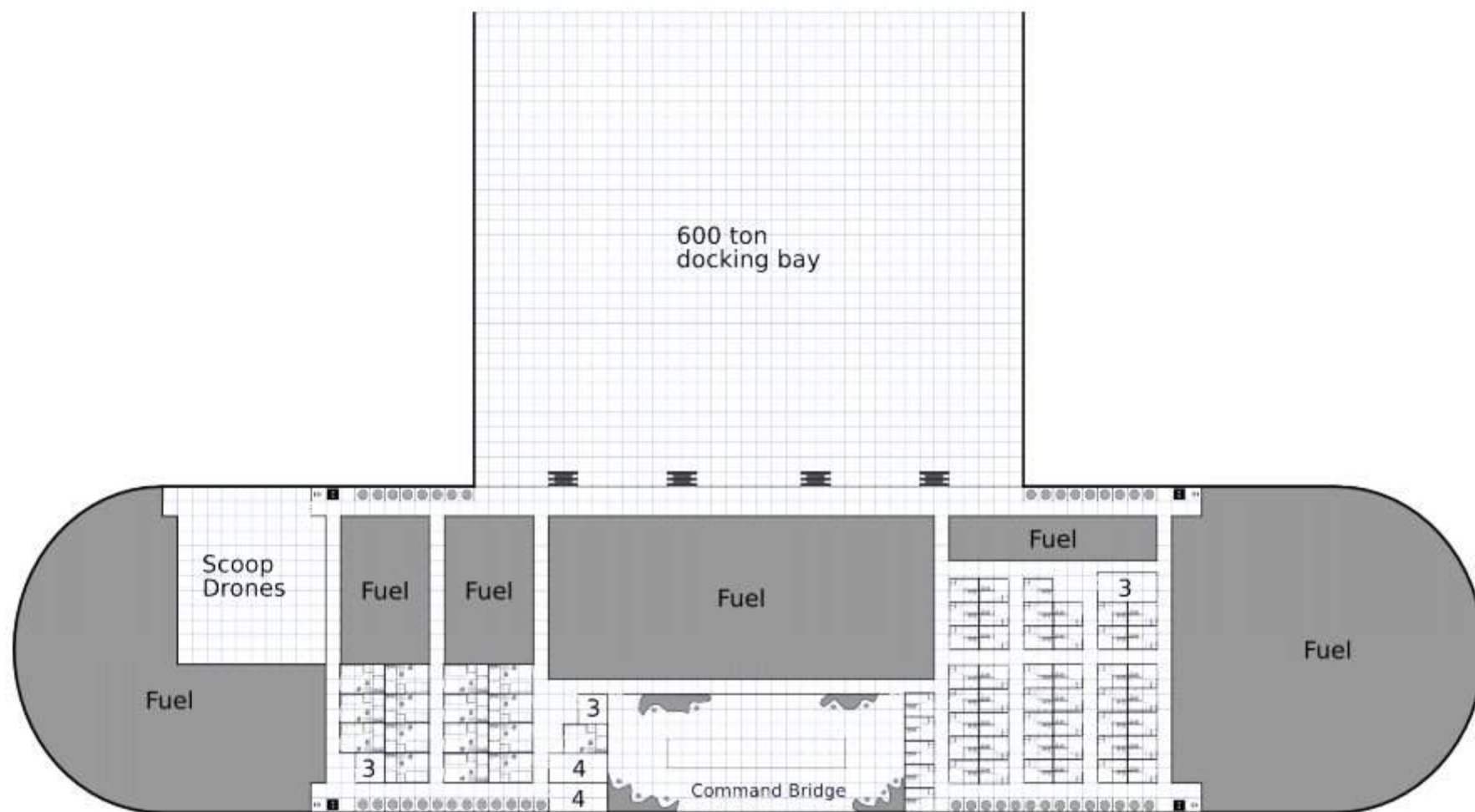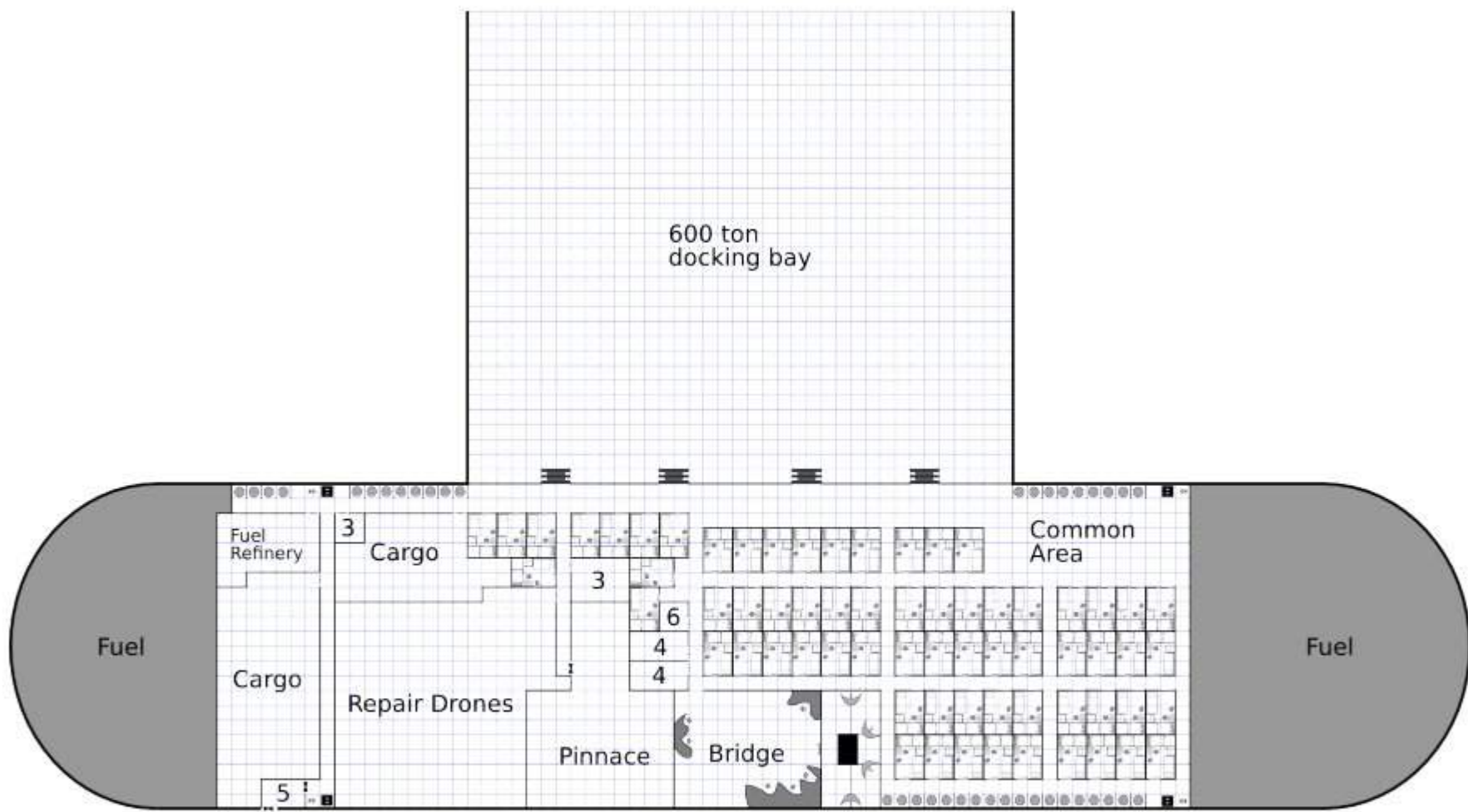(4 metres high)

Iris Valve		Access Hatch	
Iris Valve Floor		Hatch	
Iris Valve Ceiling		Hatch Floor	
Iris Valve Both		Hatch Ceiling	
Power Plant		Hatch Both	
Manoeuver Drive		Lift	
Escape Pod		Sensors	

1. Beam Laser
2. Pulse Laser
3. Armoury
4. Briefing Room
5. Airlock
6. Storage Compartment

Deck 3

Cargo

Cargo

Ship's Boats

Cargo

Cargo

Cargo

600 ton
docking bay

600 ton
docking bay

Scoop
Drones

Fuel

Fuel

Fuel

Fuel

Fuel

Fuel

3

3

3

4

4

Command Bridge

Fuel

Deck 4

600 ton
docking bay

Fuel
Refinery

3

Cargo

Fuel

Cargo

Common
Area

Fuel

3

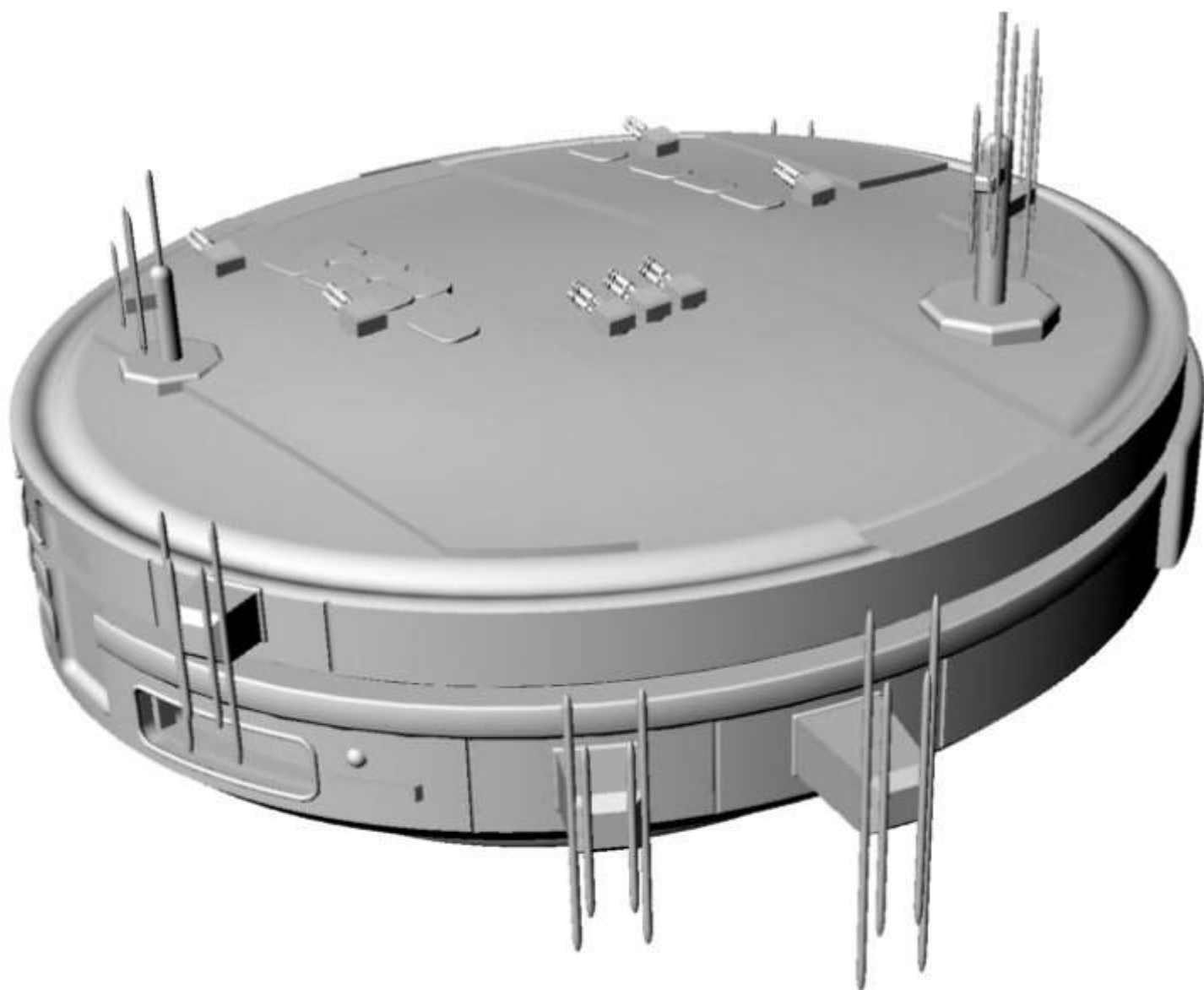6

4

4

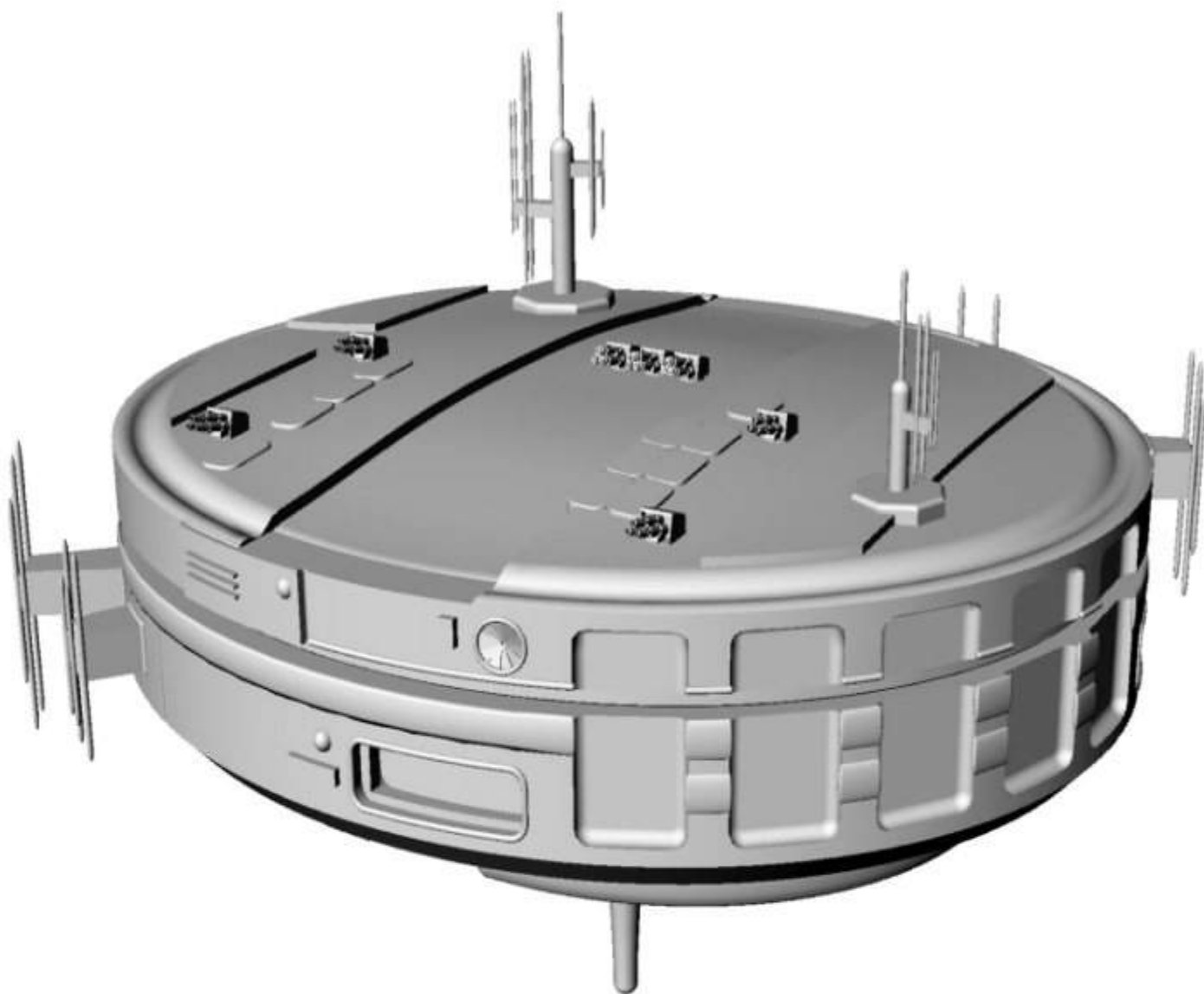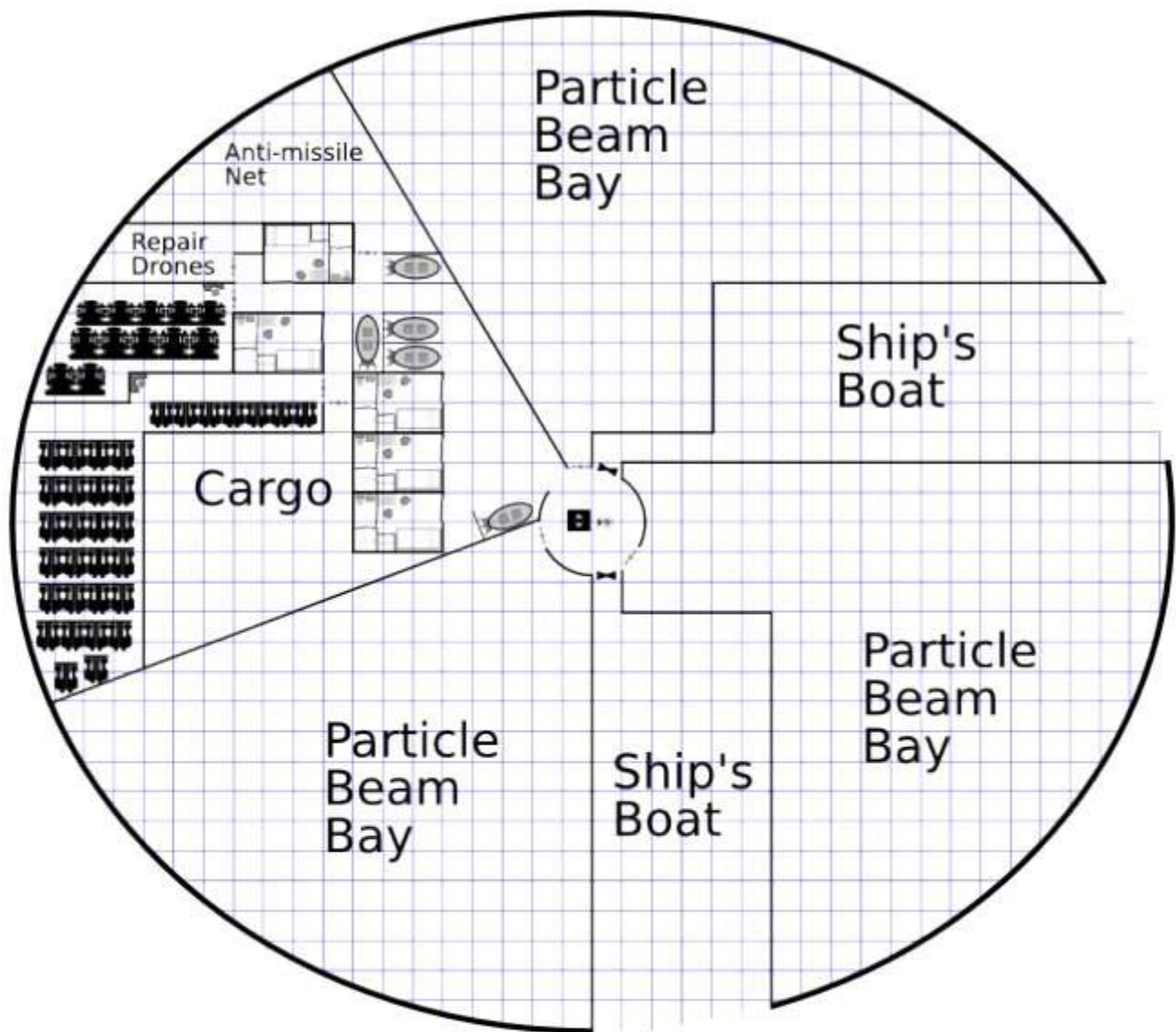Repair Drones

5

Pinnace

Bridge
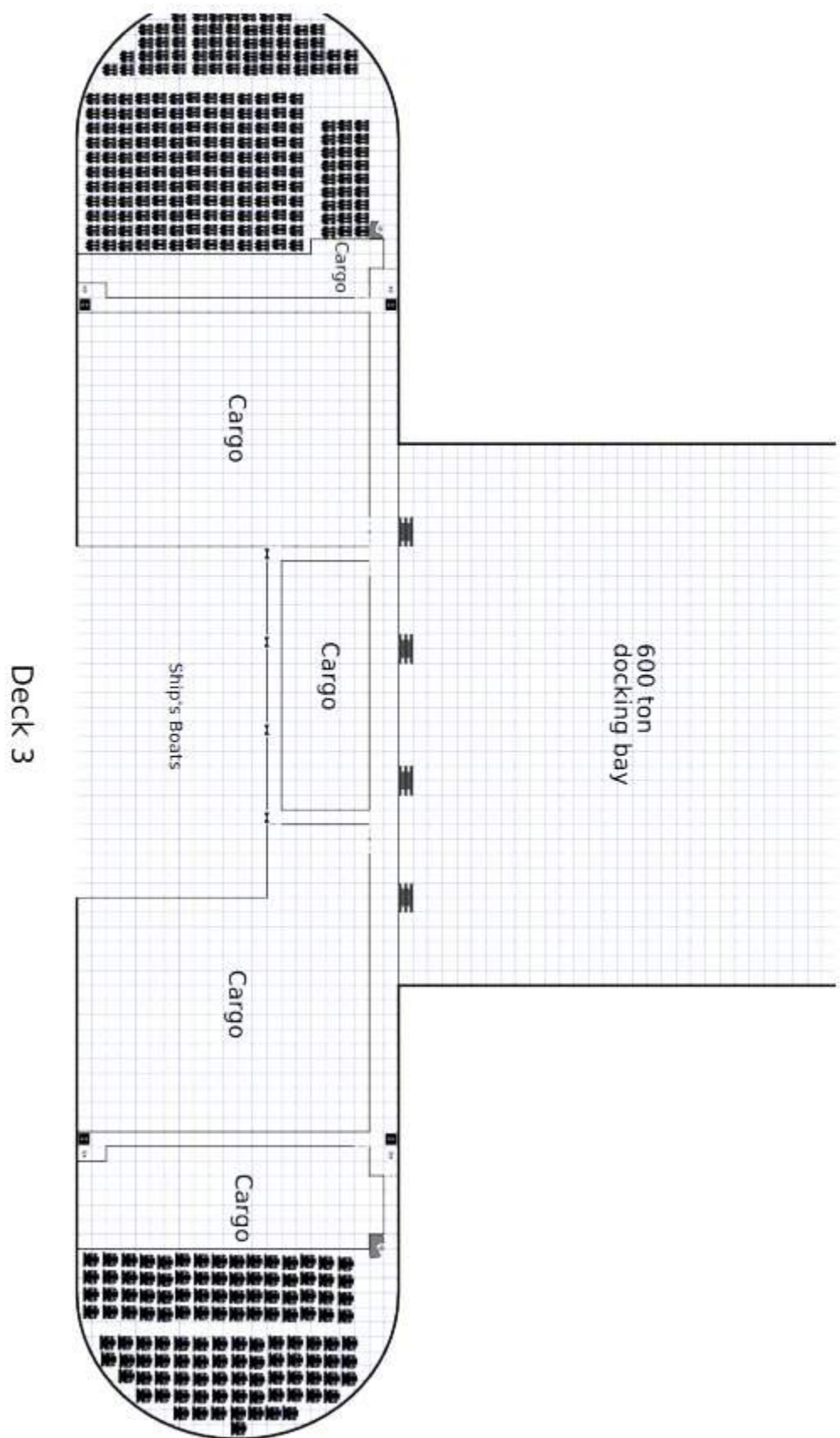
Deck 5

DEFENCE STATION

Everything on these stations is either weapons or armour, and anything not given over to battle or maintaining readiness is considered wasted space. Crews are cramped, command spaces are limited and luxuries are at an absolute minimum. While not really capable of holding off a serious invasion attempt, the ratio of weapons to hull makes defence stations a good investment for many less wealthy systems.

Defence Station			Tons	Cost (MCr)
Hull	1,000 tons	Hull 10		100
	TL 12 Standard AG Hull	Structure 10		
Armour	Crystaliron	12 points	150	60
M-Drive	Geostationary	Thrust 1G	10	5
P-Plant	Capital Grade	Rating 3	25	62.5
Fuel	217 tons	26 weeks of operation	217	
Command	2 Standard Modules		4	0.4
Computer	Distributed/2	Rating 30		7.5
Electronics	Very Advanced	DM+2	5	4
Cargo	43 tons		43	
23 Staterooms			92	11.5
Armaments	3 x Large Particle Beam Bays		303	120
	3 x Triple Turret	3 x Beam Laser	3	12
	4 x Triple Turret	3 x Pulse Laser	4	10
	2 x Nuclear Damper		40	60
Extras	Re-entry Capsules		16	2.4
	Repair Drones		10	2
	Anti-missile Net		15	30
	2 x Ship's Boats	Full Hangars	78	51.258
Software	Manoeuvre/0			
	Library/0			
	Fire Control/4	Rating 20		8
	Auto-Repair/1	Rating 10		5
Maintenance Cost (Monthly)				Cr459,631
Life Support Cost (Monthly				Cr59,000
Total Tonnage and Cost			1,000	551.558

2D	Engineering External	Internal	Command External	Internal
2	Armour	Crew	Hull	Crew
3	Hull	Fuel	Nuclear Damper	Particle Beam Bay
4	M-Drive	P-Plant	Beam Laser Turret	Hangar
5	2 x Beam Laser Turret	P-Plant	Sensors	Command
6	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure
9	2 x Pulse Laser Turret	Particle Beam Bay	Sensors	Computer
10	M-Drive	P-Plant	2 x Pulse Laser Turret	Hangar
11	Hull	Hold	Nuclear Damper	Particle Beam Bay
12	Armour	Critical	Hull	Critical

Department	Crew
Command	9
Engineering	1
Gunnery	21
Flight	8
Service	3
Total	42
Passenger staterooms	0

Deck 1

Particle Beam Bay

Ship's Boat

Particle Beam Bay

Particle Beam Bay

Ship's Boat

Cargo

Anti-missile Net

Repair Drones

Iris Valve	Access Hatch
Iris Valve Floor	Hatch
Iris Valve Ceiling	Hatch Floor
Iris Valve Both	Hatch Ceiling
Power Plant	Hatch Both
Manoeuver Drive	Lift
Re-entry Capsule	Sensors

1. Beam Laser Turret
2. Pulse Laser Turret
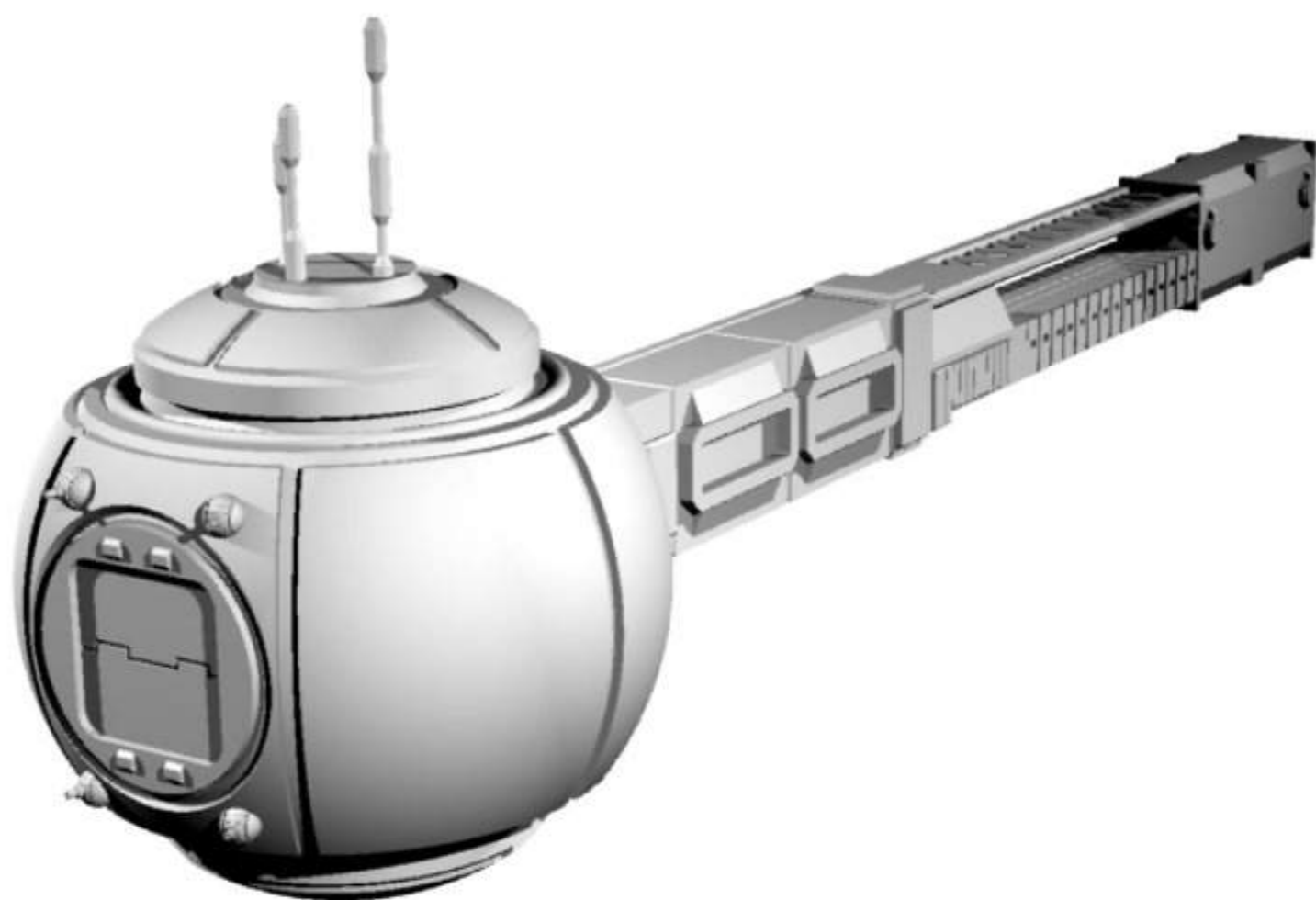3. Airlock

Fuel

Cargo
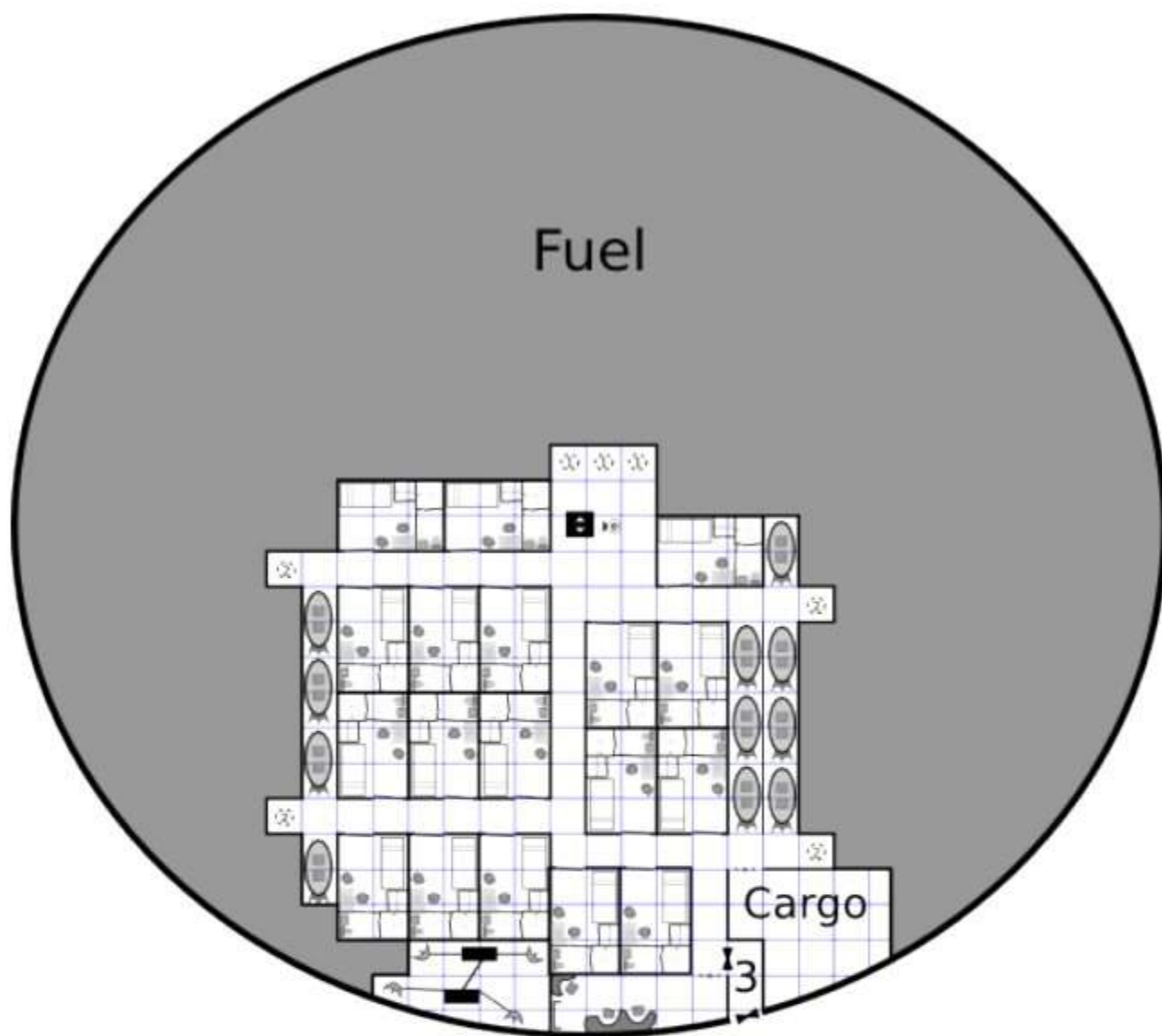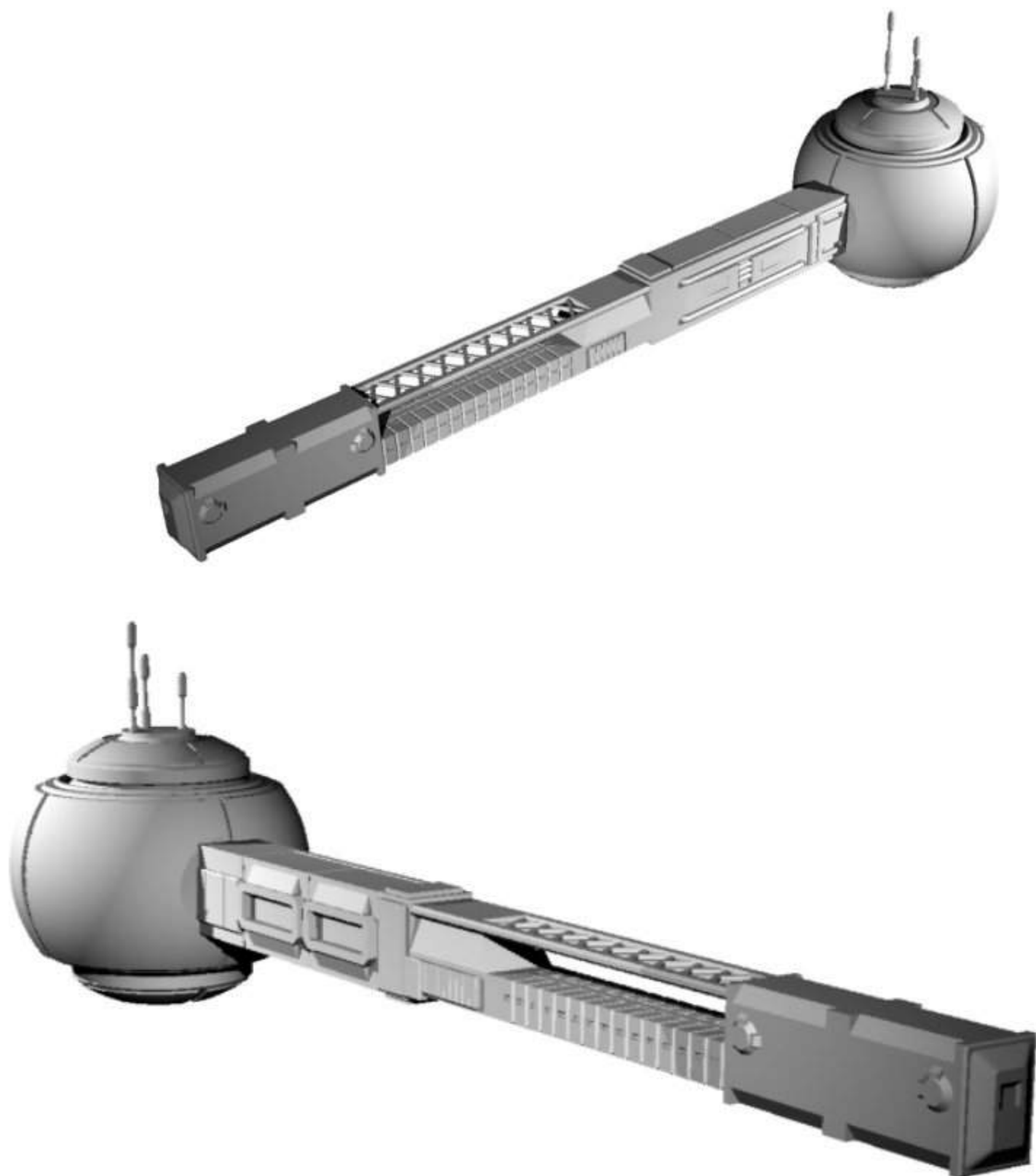
Deck 2

INTERDICTION STATION

Almost a fleet station in miniature, the interdiction station is a fighter base. They range in size from tiny single squadron stations to enormous bases that can hold an entire fighter wing with bomber and strike craft support elements. The hangars are the most spacious sections of these stations, since they are always at least partially empty as fighters are out on patrol.
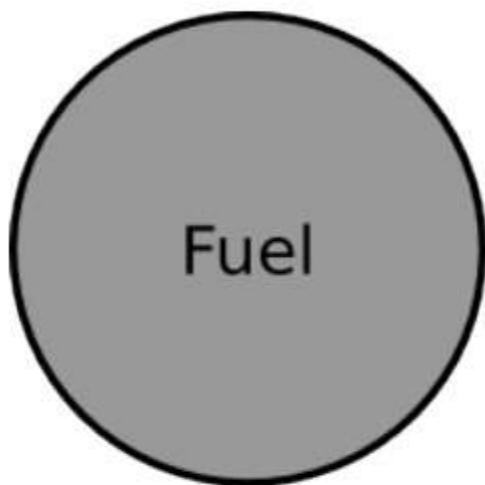
Interdiction Station			Tons	Cost (MCr)
Hull	1,000 tons	Hull 10		100
	TL 12 Standard AG hull	Structure 10		
Armour	Crystaliron	12 points	150	60
M-Drive	Non-orbital	Thrust 0.1G	2.5	1.25
P-Plant	Non-orbital		5	12.5
Fuel	87 tons	52 weeks of operation	87	
	50 tons	Fighter fuel	50	
Command	2 Standard Modules		4	0.4
Computer	Distributed/2	Rating 30		7.5
Electronics	Very Advanced	DM+2	5	4
Cargo	11.5 tons		11.5	
30 Staterooms			120	15
Armaments	6 x Triple Turret	3 x Beam Laser	6	24
	4 x Triple Turret	3 x Pulse Laser	4	10
	2 x Nuclear Damper		40	60
Extras	Re-entry Capsules		20	3
	Repair Drones		10	2
	Sensor Extension Net		1	1
	12 x Light Fighters	Full Hangars	156	149.244
	2 x Ship's Boats	Full Hangars	78	51.258
	Launch Tube	10 x 10 tons	250	125
Software	Manoeuvre/0			
	Library/0			
	Fire Control/2	Rating 10		4
	Auto-Repair/2	Rating 20		10
Maintenance Cost (Monthly)				Cr53,346
Life Support Cost (Monthly				Cr80,000
Total Tonnage and Cost			1,000	640.152

	Engineering		Command			Department	Crew
2D	**External**	**Internal**	**External**	**Internal**		Command	8
2	Armour	Crew	Hull	Crew		Engineering	1
3	Hull	Fuel	Nuclear Damper	Fighter Hangar		Gunnery	16
4	M-Drive	P-Plant	3 x Beam Laser Turret	Hangar		Flight	32
5	3 x Beam Laser Turret	Launch Tube	Sensors	Command		Service	3
6	Hull	Structure	Hull	Structure		Total	60
7	Armour	Hold	Armour	Hold			
8	Hull	Structure	Hull	Structure		Passenger staterooms	0
9	2 x Pulse Laser Turret	Launch Tube	Sensors	Computer			
10	M-Drive	P-Plant	2 x Pulse Laser Turret	Hangar			
11	Hull	Hold	Nuclear Damper	Fighter Hangar			
12	Armour	Critical	Hull	Critical			

Fuel

Deck 1

Iris Valve	⋈	Access Hatch	⊔
Iris Valve Floor	○	Hatch	⊶⊷
Iris Valve Ceiling	○	Hatch Floor	◄►
Iris Valve Both	○	Hatch Ceiling	◄►
Power Plant	▦	Hatch Both	◄►
Manoeuver Drive	▦	Lift	▣
Re-entry Capsule	◉	Sensors	▾

1. Beam Laser Turret
2. Pulse Laser Turret
3. Airlock
4. Sensor Extension Net

Fuel

Cargo

Ship's Boat

Ship's Boat

Deck 2

Light Fighters

Launch Tube

Light Fighters
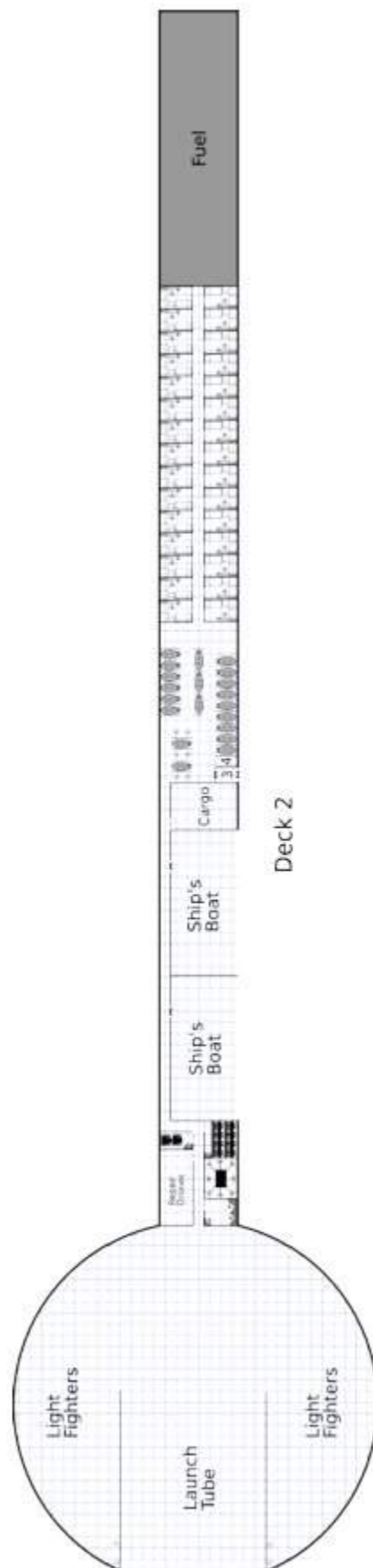
X-Boat Hub Station

The core of the X-boat network is the hub stations, the homes for all the crews and ships when they are not launching themselves across a sector on lengthy voyages. Capable of housing and maintaining several of the thousand ton X-boats, they are vital to maintaining the system that enables interstellar communications.

X-Boat Hub Station			Tons	Cost (MCr)
Hull	10,000 tons TL 11 Standard AG hull	Hull 83 Structure 83		800
M-Drive	Geostationary	Thrust 1G	100	50
P-Plant	Geostationary		150	375
Fuel	1,000 tons	20 weeks of operation	1,000	
	2,000 tons	Starship fuel	2,000	
Command	3 Standard Modules		60	6
Computer	Distributed/3	Rating 40		10
Electronics	Basic Military		2	1
Cargo	886 tons		886	
113 Staterooms			452	56.5
Armaments	10 x Triple Turret	3 x Beam Laser	10	40
Extras	Docking Spaces	1 x 1,000 ton Hangar Bay, 1 x 200 ton Hangar Bay	3,600	900
	Docking Arms	18 x 1,000 ton arms	900	90
	Deep Space Communications System		500	100
	Re-entry Capsules		32	4.8
	Repair Drones		100	20
	4 x Ship's Boats	Full Hangars	156	102.516
	Pinnace	Full Hangar	52	30.511
Software	Manoeuvre/0			
	Library/0			
	Fire Control/4	Rating 20		8
	Auto-Repair/2	Rating 20		10
Maintenance Cost (Monthly)				213,694
Life Support Cost (Monthly				0.342
Total Tonnage and Cost			10,000	2604.327

Department	Crew
Command	8
Engineering	5
Gunnery	5
Flight	15
Facility	10
Service	20
Total	63
Passenger staterooms	80

Berthing
Small Craft: 19,200
Starships: 19,200
Waiting Time
Small Craft: 1D-5
Starships: 1D-4 (1D-5 on arms)

Fuel Waiting Time
Small Craft: 1D-2
Starships: 1D-2

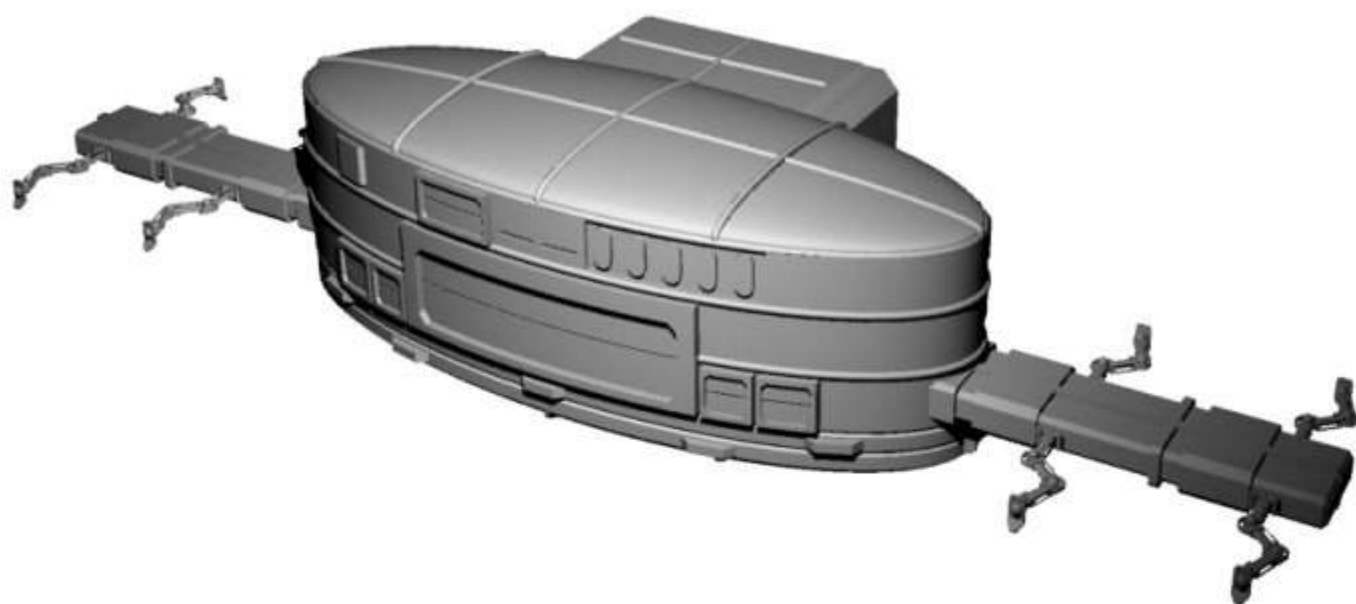**Repair Facilities**
Small Craft: 2,000 (Hull)
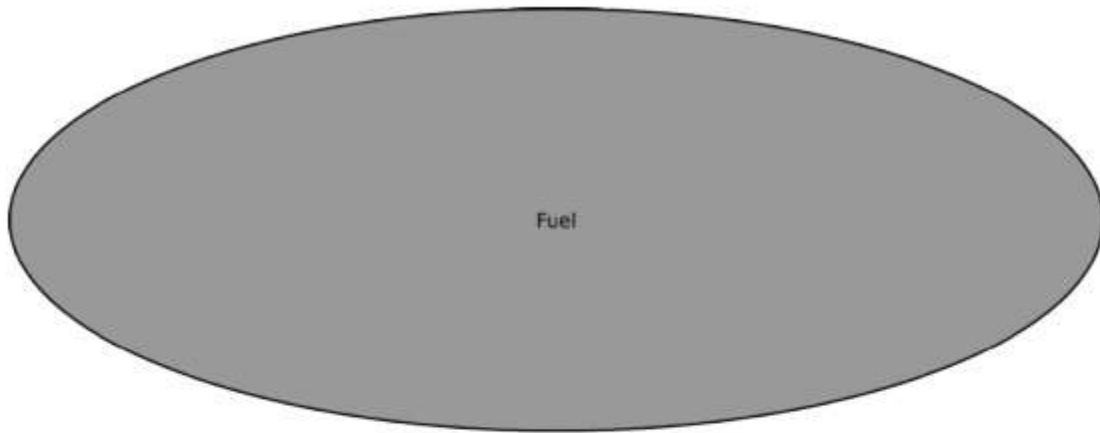Starships: 2,000 (Hull)
Waiting Time
Small Craft: 1D-2
Starships: 1D-2

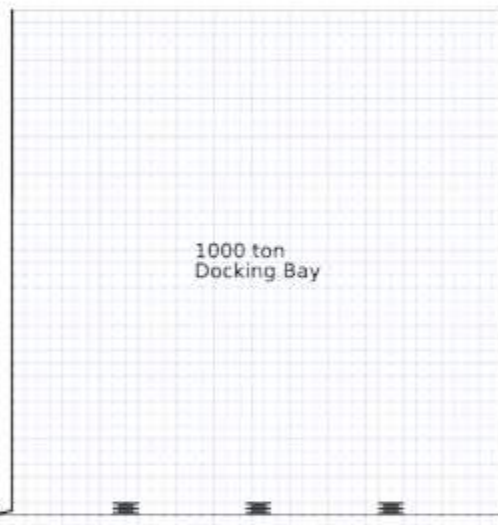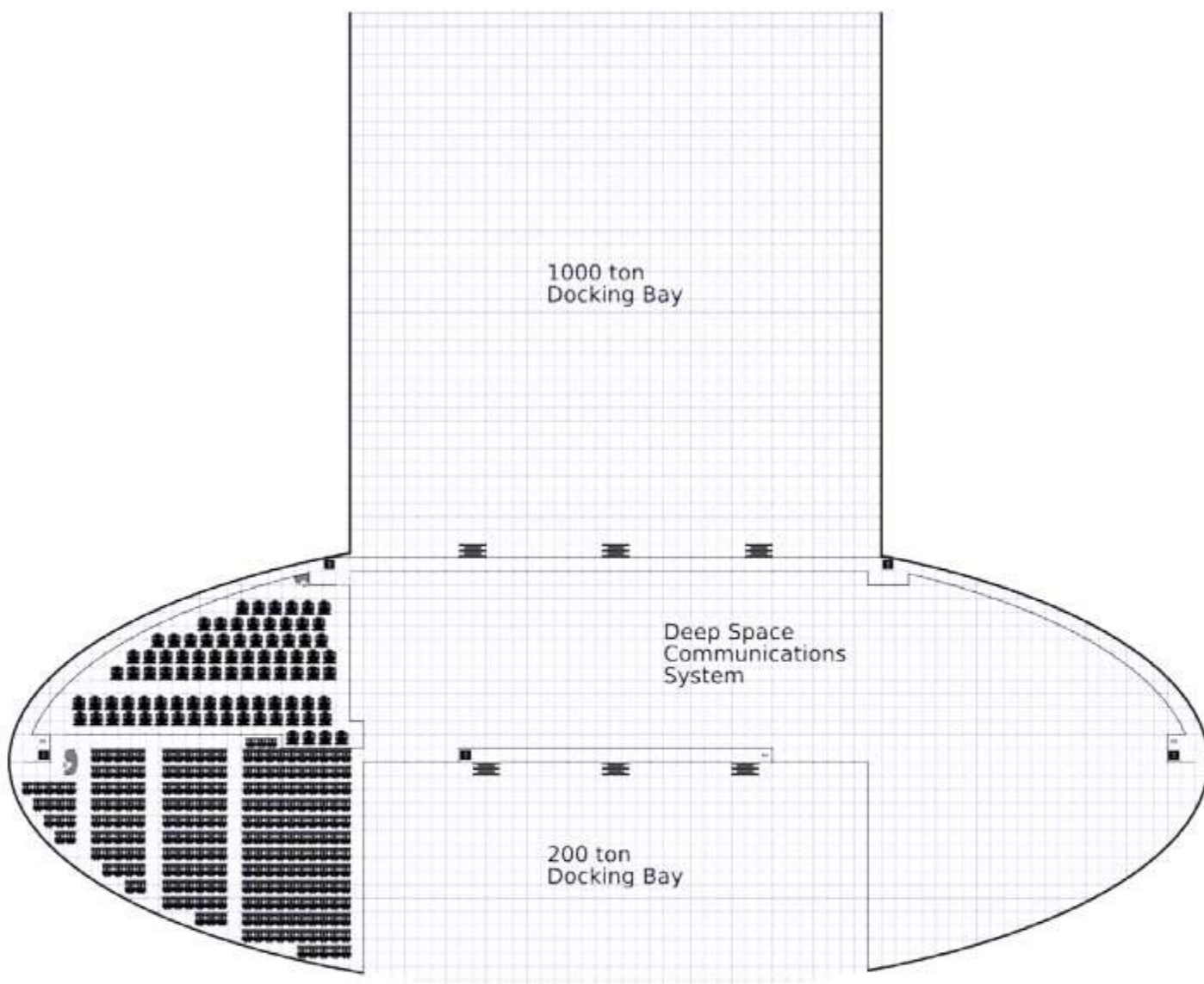| 2D	Engineering		Command		'North'	
	External	Internal	External	Internal	External	Internal
2	Armour	Crew	Hull	Crew	Hull	Crew
3	Docking Arms	Fuel	Docking Arms	Docking Spaces	Docking Arms	Docking Arms
4	M-Drive	P-Plant	Comms System.	Hangar	Sensors	Structure
5	3 x Beam Laser Turret	Fuel	Sensors	Command	2 x Beam Laser Turret	Fuel
6	Hull	Structure	Hull	Structure	Hull	Structure
7	Armour	Hold	Armour	Hold	Armour	Hold
8	Hull	Structure	Hull	Structure	Hull	Structure
9	Docking Arms	Fuel	Sensors	Computer	2 x Beam Laser Turret	Hangar
10	M-Drive	P-Plant	3 x Beam Laser Turret	Hangar	Sensors	Structure
11	Hull	Hold	Docking Arms	Docking Space	Docking Arms	Fuel
12	Armour	Critical	Hull	Critical	Hull	Critical

Fuel

Deck 1
(5.4 metres high)

1000 ton
Docking Bay

Fuel

Deck 2

1000 ton
Docking Bay

Deep Space
Communications
System

200 ton
Docking Bay

Deck 4

1000 ton
Docking Bay

Cargo

Pinnace

Repair
Drones

2
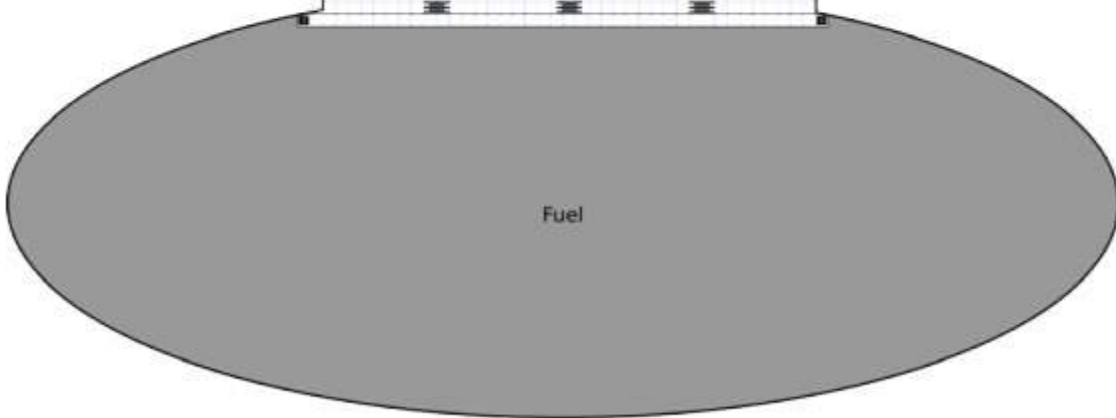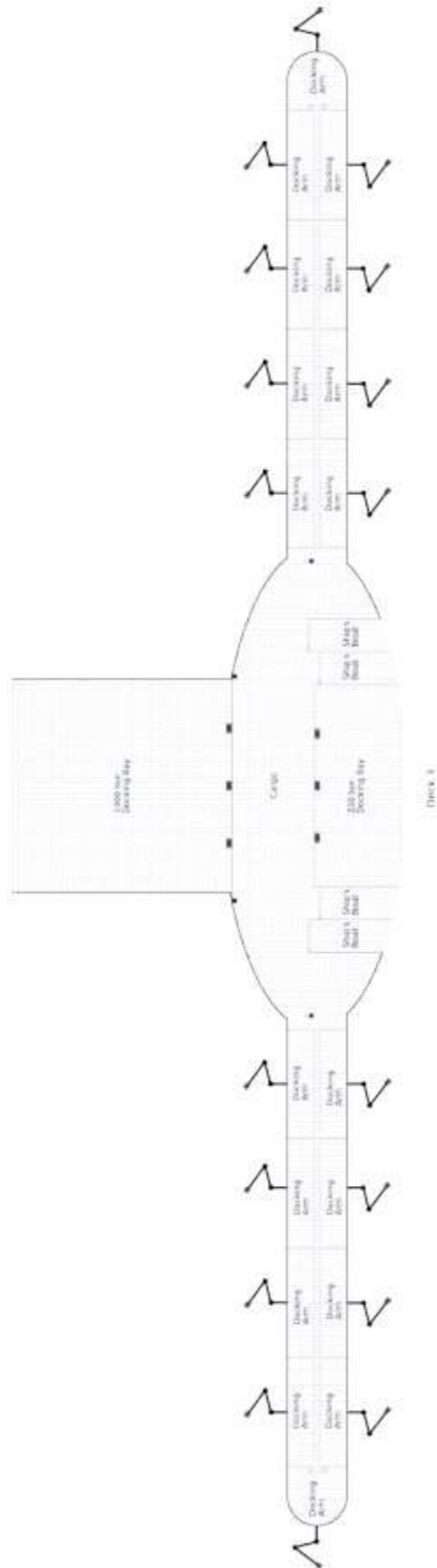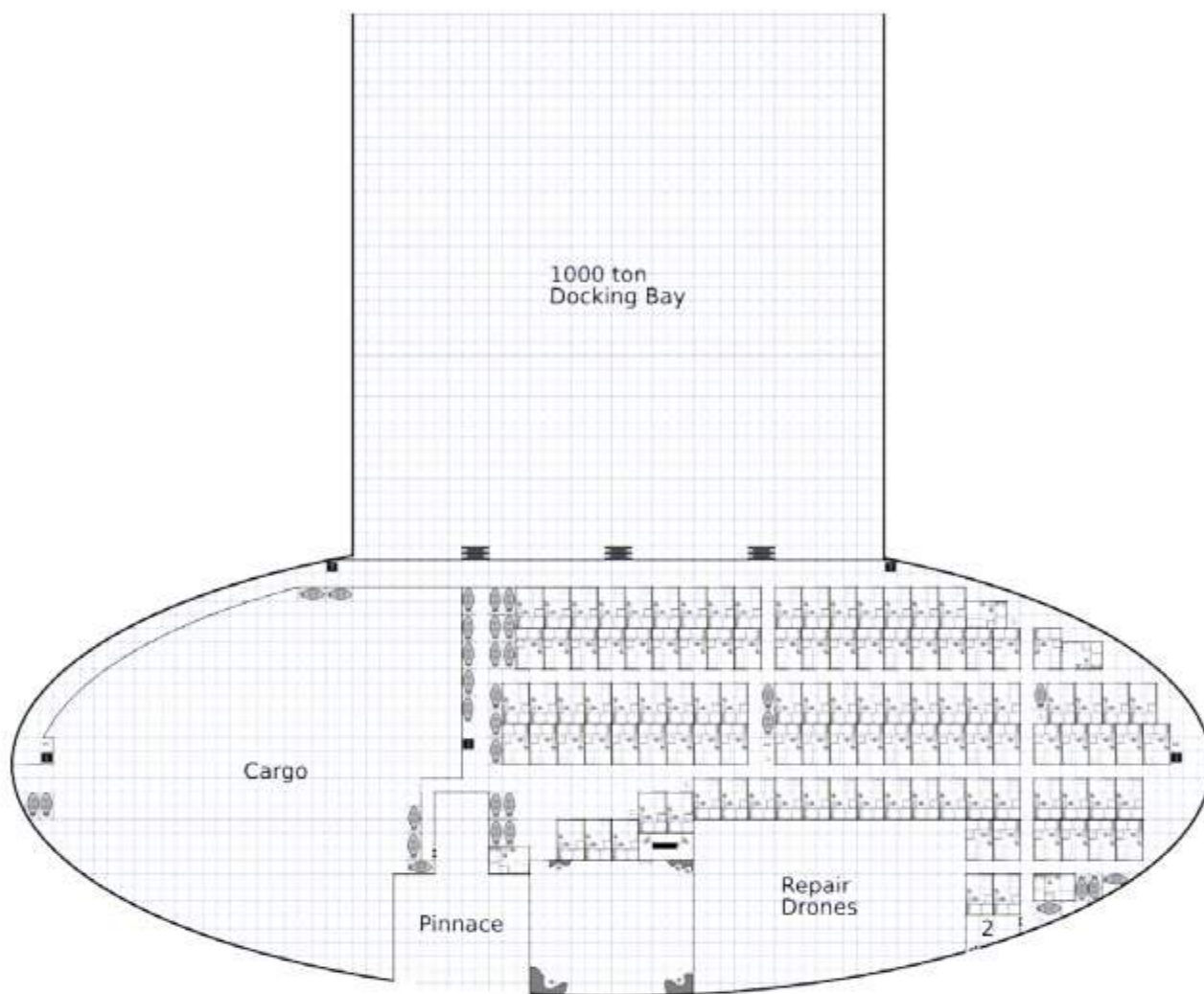
Deck 5

Iris Valve		Access Hatch	
Iris Valve Floor		Hatch	
Iris Valve Ceiling		Hatch Floor	
Iris Valve Both		Hatch Ceiling	
Power Plant		Hatch Both	
Manoeuver Drive		Lift	
Re-entry Capsule		Sensors	

1. Beam Laser Turret
2. Airlock