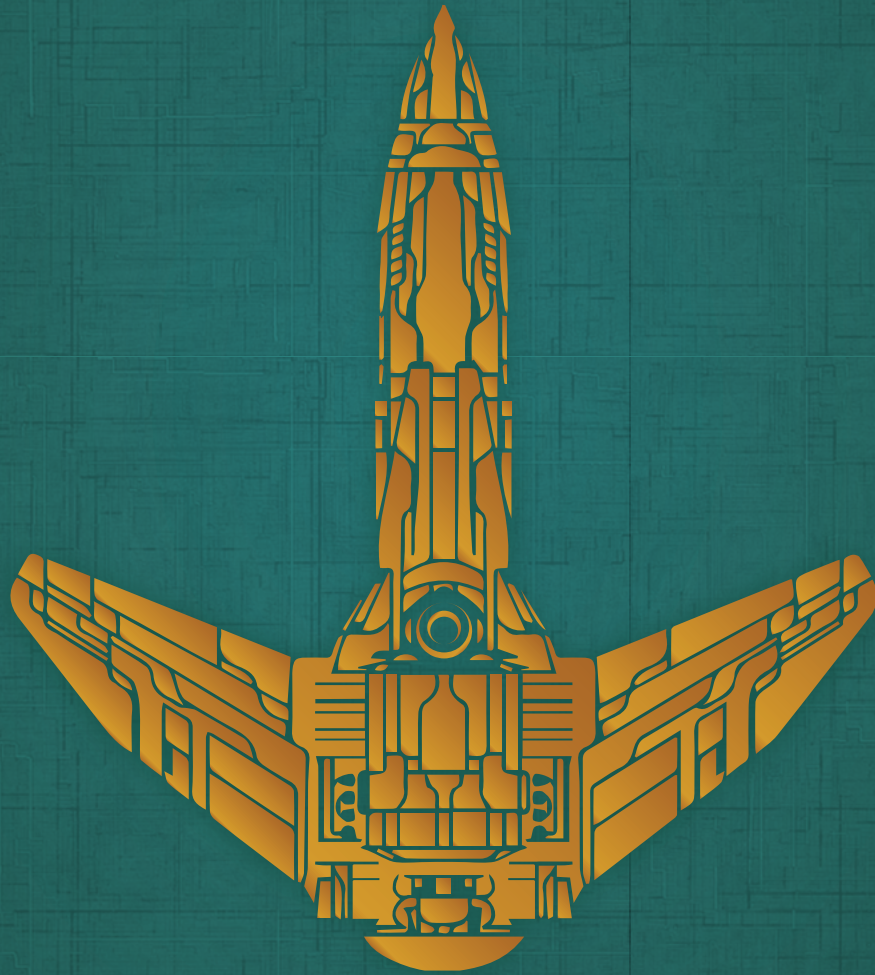


PIRATES OF DRINAX:

HARRIER

CLASS

COMMERCE RAIDER



TRAVELLER



# TRAVELLER

## PIRATES OF DRINAX: HARRIER-CLASS COMMERCE RAIDER

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# INTRODUCTION

The *Harrier*-class commerce raider is the starship used in the *Pirates of Drinax* epic campaign. It is loaned to the Travellers by King Oleb of Drinax as both a means of transportation and instrument of policy. Although the ship is advanced, it is in poor condition due to age and long years of neglect. Repairing and perhaps upgrading the *Harrier* is likely to be an important goal in the campaign.

This supplement presents the *Harrier* in more detail, along with expanded rules for repairs and upgrades. Of course, there may be other examples of this class in service elsewhere, or lying derelict waiting to be salvaged. The class could even be put back into production by a suitably well-equipped shipyard.

Although very few vessels of this type have survived into modern times, ship-recognition databases used by most

vessels in the Trojan Reach region will recognise the vessel's configuration and electromagnetic emissions unless they are disguised. This itself may arouse suspicion, since the class was built specifically as a commerce raider, but there are numerous plausible explanations for why a group of Travellers might have such a ship yet not be pirates.

A commerce raider, almost by definition, makes an excellent secure courier or well-protected light transport. The same vessel might be used by mercenary forces or as a naval ship. It should not be hard to come up with a believable excuse that will allay suspicion, at least to some extent. However, there will always be those who consider a design with piracy-potential to be worthy of suspicion so, whether or not the operators are staying within the law, they will need to be ready to explain themselves.





# C H A P T E R - O N E

# COMMERCE RAIDING OPERATIONS

Commerce-raiding, sometimes referred to as cruiser warfare, is not the same thing as piracy. There are those who consider them similar and related, and who will attempt to space captured raiders as pirates, but legally – on most worlds – there is a difference between commerce raiding and spacegoing thievery.

A pirate is primarily concerned with how much money they can make, or at least how much they can make for their patron. If they make this money by shooting up merchant ships so they require extensive repairs, or destroy them in the process of obtaining components and cargo, then the economic damage inflicted tends to be far more than any profit gained. Pirates may not be overly concerned about this, but keeping the economic damage within tolerable limits is a good way to prolong a career in piracy.

A pirate who is merely a nuisance and steals a bit of cargo now and then will not attract a determined response; one who disrupts trade and costs shipping operators huge amounts of money will rapidly make the Most Wanted list. This is simple economics – shipping operators and their insurers have large amounts of money and political influence, and will lobby governments to deploy naval assets in order to remedy the situation. The government and navy may also want to do away with the pirate, since his exploits will undermine their credibility – not to mention injuring and killing innocent people.

Thus pirates – the sort willing to put some effort into staying alive, anyway – will usually try to limit the economic damage they cause. Piracy still disrupts trade and harms the economy, but staying below the ‘must-react’ threshold of the local government is a good way to ensure a long career.

However, attacks on interstellar shipping can also be used as an instrument of policy. Wanton, wasteful piracy can be used to make money and further a cause, though there is always the danger of backlash. Anyone who makes money raiding in this fashion will be treated as a

pirate if caught – and rightly so. However, it is possible to undertake commerce raiding operations without being a pirate. A commerce raider always risks being tried as a pirate, especially if there is no war or legitimately declared dispute in progress, but at least he has some chance of being treated as a combatant rather than a criminal.

Commerce raiding is defined as attacking the enemy’s economy by means of disrupting trade. The most obvious way of doing this is to capture or destroy merchant ships, but there are other means that can be far more effective. Damage to a starship might take it out of commission; crippling the unloading docks at a major starport can cause all trade in the area to be disrupted. The intent behind commerce raiding is to damage the economy of the target rather than to make a profit, though it is considered legitimate to take fuel, supplies, ammunition and components from a target ship in order to maintain the raider.

In some cases a pirate who steals cargo but harms no-one will be treated more harshly than a raider who puts a spread of missiles into a highport’s docking area and kills dozens of people – though this depends very much upon local conditions and the nature of the conflict in progress.

Raiders, and pirates who want to pretend to be legitimate commerce raiders in order to escape the death penalty if caught, often operate in uniform and display a transponder code declaring their allegiance before attacking. It is considered a legitimate *ruse de guerre* to pretend to be an innocent merchant ship or non-hostile warship until the moment of attack, perhaps by using a doctored transponder code claiming to be a mercenary escort vessel. However, a ship that opens fire without declaring its true nature will be treated as a pirate. Some raiders, particularly those operating on the orders of a third party who wishes to remain anonymous, will use a variant of the blank identification code – a transponder display analogous to the black flag used by some privateers on Old Terra.



Commerce raiding has several uses as an instrument of policy. In addition to the direct economic damage inflicted, a spate of raids in a given area will make other merchant ship operators reluctant to go there, causing further slowdown in interstellar commerce. In addition, the cost of sending out hunter groups and providing escorts for merchant traffic or guardships for ports is considerable. A single raider can tie down multiple vessels, and may continue to do so even after it has ceased operations.

Not surprisingly, commerce raiding was a facet in the internal conflicts of the late Sindalian Empire period. It is traditionally the province of the weaker power; one that cannot directly challenge its enemies' naval might. Such was the vindictiveness of the Sindalian Empire that ravaging innocent merchant traffic was normal in most conflicts, some characterised by an orgy of raiding. It was at least in part for this style of warfare that the *Harrier*-class was developed.

Small raiders like the *Harrier*-class cannot take on large, well-armed freighters except en masse, and they will suffer heavy losses in doing so. However, a small raider is easier to conceal than a 1000-ton-plus vessel, and requires much less logistic support. There is also the question of coverage; many smaller hulls can cover more systems than a single more potent raider.

In-system traffic is often a softer target than interstellar trade. The major shipping routes run from highport to jump point, then in to the next system's highport, and it is in this area that naval forces will concentrate their efforts. A highport may also have missile batteries and small craft such as fighters, creating a well-defended zone of limited size. Beyond this area, raiding is much safer.

Raids on outsystem assets and traffic can be highly effective. A world that derives much of its raw materials from asteroid mining in the outsystem may suffer reduced industrial output after a raid on the mining

ships or ore transports, and these might not be well protected at all. Even a quite minor raid, which causes the local government to deploy warships to protect the distant asset, creates a drain on economic and military capabilities.

The same goes for attacks in backwater systems used as refuelling points on major shipping runs. It is much harder to protect a system one or more jumps away, and any ship deployed there is unavailable for any tasks that might arise. It may also be vulnerable to attack. This is one of the more daring commerce-raiding strategies; draw naval assets away from support and then hit them en masse with many raiders or more powerful warships.

Counters to commerce raiding are generally obvious. Most highports have a defended zone, and guardships can be posted at vulnerable points or along important routes. Convoys are another option, especially if several armed merchant craft can add their guns to the general defence. Various expedient merchant-escort craft have emerged at times of particularly intense raiding.

However, none of these options is particularly proactive, and all of them tie up considerable resources covering places where attacks might occur – which can then be avoided by the raiders. Deterrence does protect the most critical shipping areas but does not end the commerce raiding problem. That can only be done by hunting down or otherwise finding and attacking raiding vessels.

Q-ships, posing as innocent merchant vessels, are an option, as are naval sweeps of possible raider bases or staging areas. Good intelligence work is essential to breaking a raider force – collating reports of when and where a particular vessel has struck can give an indication of where it is getting fuel and supplies. It may even be possible to get a lead on the raider's base and launch an attack. However, this task can be thwarted by inventive and opportunistic raider captains who vary tactics and conceal the identity of their ship. When predictability can be a death sentence, imagination might be the raider's most potent weapon.



**TARGET**

OUTSYSTEM  
ASSETS



**TARGET**

OUTSYSTEM  
TRAFFIC



**DANGER**

GUARDSHIPS  
ON DUTY



**DANGER**

ESCORTED  
CONVOY



**DANGER**

HIGHPORT  
DEFENCE ZONE



**DANGER**

PATROLS



**DANGER**

NAVAL SEARCH



**DANGER**

Q SHIP BAIT



**TARGET**

REFUELING  
POINTS



**TARGET**

BACKWATER  
PORTS



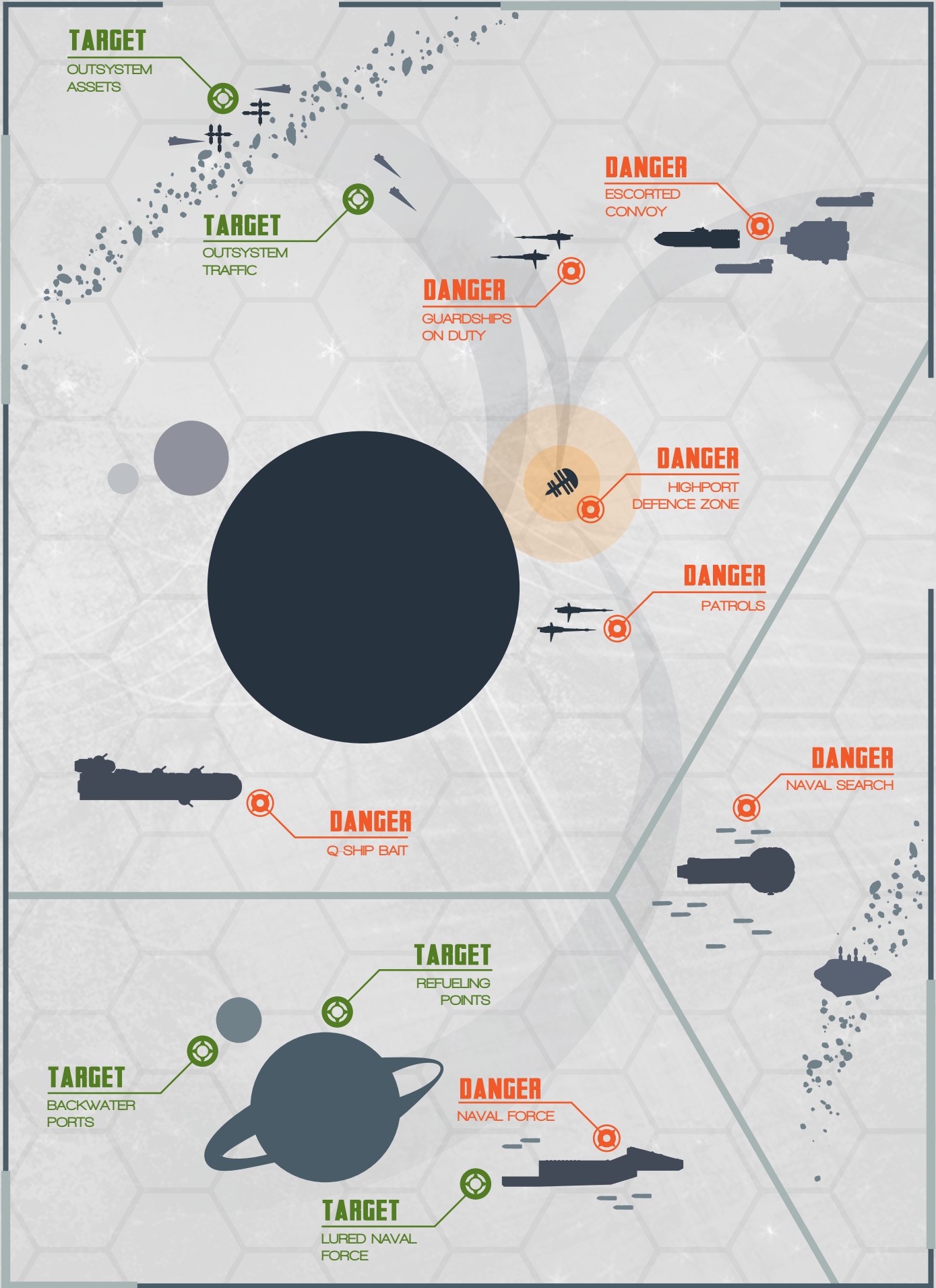
**DANGER**

NAVAL FORCE



**TARGET**

LURED NAVAL  
FORCE





# THE *HARRIER*-CLASS

Like many Sindalian designs, the *Harrier*-class was designed with aesthetics in mind as much as effectiveness. The hull form is generally efficient, with a two-deck main section in the aft of the vessel and an elongated forward area containing mainly fuel-related and utility systems. The ship's long nose has been criticised as a design weakness; there are those who maintain that a hit on the ship's 'neck' could cause it to break apart. However, a hit powerful enough to do such damage to this ship would probably go through both sides of a more compact vessel, with a similarly devastating effect.

The ship's external appearance is both graceful and intimidating. This is a ship intended to look good during parade flybys or when parked on a landing area, and to make morale-boosting footage when filmed en masse, sweeping in for an attack. The down-swept wings are a deliberate affectation, though they do provide some benefits when operating in an atmosphere. Indeed, the ship's original documentation claims lift and control provided by the wings decreases time to climb out of an atmosphere and grants the ability to pursue a fleeting target or evade pursuit by making a 'hot' atmospheric entry. Whether or not this actually makes any difference is a question debated hotly by pilots and aficionados of the *Harrier*-class.

Both internally and externally, the *Harrier*-class is a work of art. Even functional surfaces are patterned and engraved; most internal areas are richly decorated with engravings of battle scenes, famous Sindalian leaders and inspirational quotes rendered in beautiful script. Wood panelling is used in most parts of the ship. It is backed with more mundane materials to give the ship structural strength, but wherever possible the bulkheads and walls are covered in richly patterned oak or similar woods. This is no mere veneer; panels are thick and solid.

All this panelling, along with the drapes that cover many walls and doorways, is a fire hazard and makes access for maintenance unnecessarily complex. As a result, some panels are chipped and gouged from being removed in a hurry many times over, with some missing entirely. Likewise, some of the original brass fittings and gilding that once covered many consoles may be missing or damaged. The overall effect is incongruous and a little sad; beautifully shaped brass fittings have been replaced by functional steel ones in many cases, creating an odd mix of styles that ruins the whole effect.

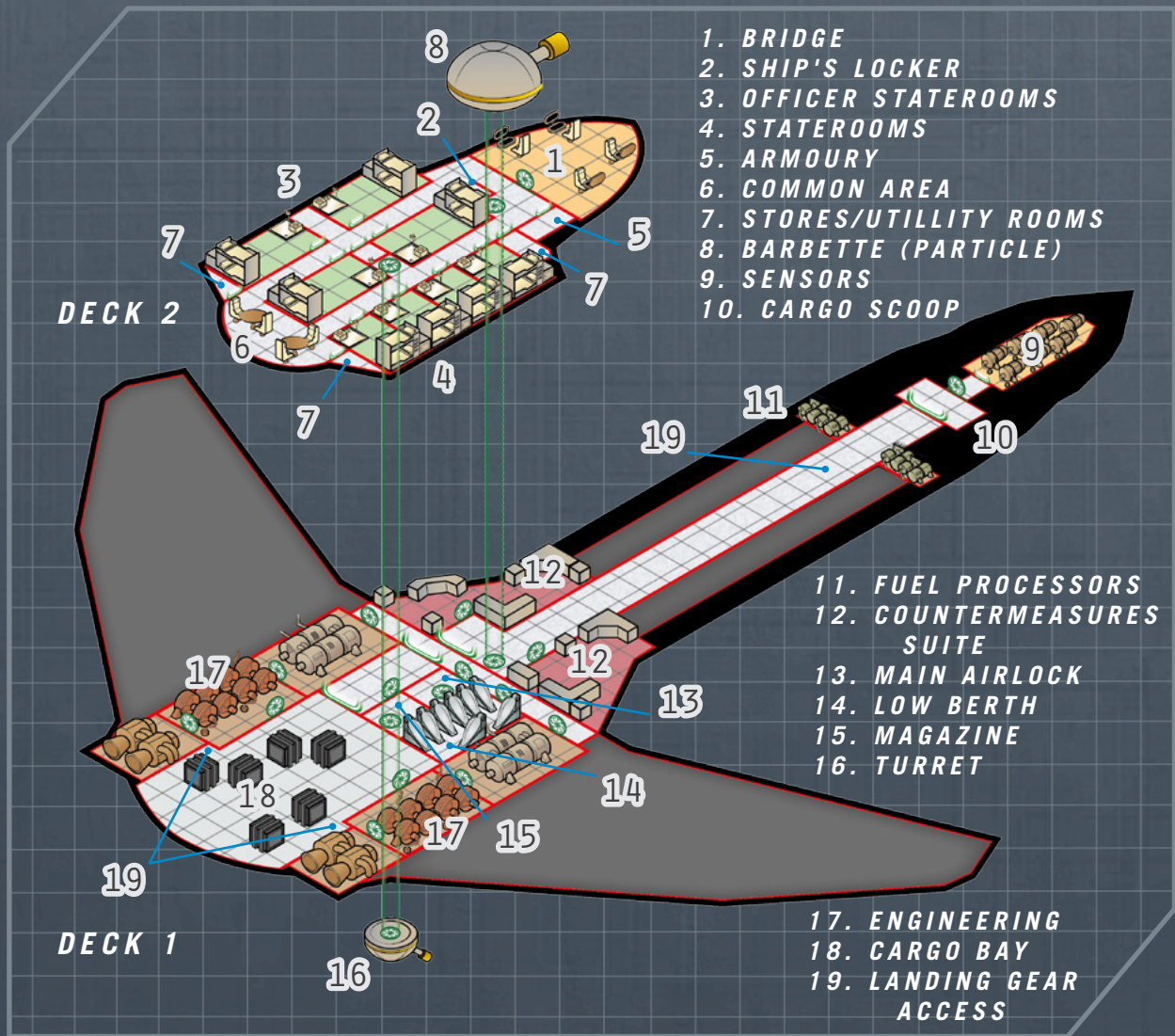
The faded opulence of the *Harrier*-class is an embarrassment in some compartments, but others retain their glory. Undamaged components and panelling have been moved, creating at least a few areas of the ship where it is possible to see how things were supposed to be back when the ship was new.





# COMMERCE RAIDER

[ HARRIER-CLASS ]



## ISOMETRIC DECKPLAN KEY



BUNK



FRESHER



WORKSTATION



G-CHAIR



LOW BERTH



CRATE



HATCH



IRIS VALVE (WALL)



IRIS VALVE  
(FLOOR/CEILING)



INTERNAL WALL



HULL



FUEL PROCESSOR



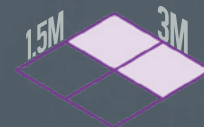
POWER PLANT



JUMP DRIVE



MANOEUVER DRIVE





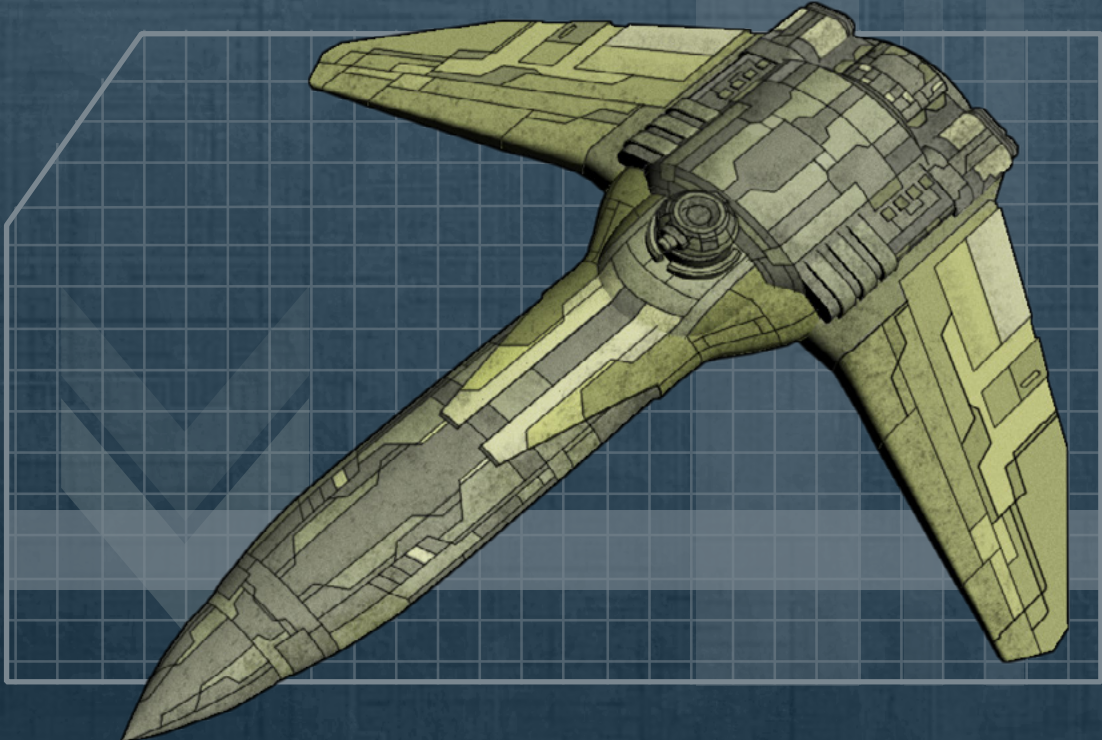
# COMMERCE RAIDER

[ HARRIER-CLASS ]

TL15		TONS	COST (MCR)
<b>Hull</b>	200 tons (streamlined, reinforced)	-	18
	Superior Stealth	-	200
<b>Armour</b>	Bonded Superdense (Armour 4)	6	2.6
<b>M-Drive</b>	Thrust 6 (reduced tonnage x 3)	8.4	25.2
<b>J-Drive</b>	J-2 (early jump, size reduction, stealth jump)	13.5	3.0375
<b>Power Plant</b>	Fusion (TL15), Power 260	13	26
<b>Fuel Tanks</b>	J-2, 4 weeks of operation	42	-
<b>Bridge</b>	Holographic Controls	10	1.25
<b>Computer</b>	Computer/20	-	5
<b>Sensors</b>	Advanced	5	5.3
	Military Countermeasures Suite	15	28
<b>Weapons</b>	Particle Barbette (accurate, high yield)	5	7.5
	Single Turret (missile rack)	1	0.95
<b>Ammunition</b>	Missile storage (12 missiles)	1	-
<b>Systems</b>	Armoury	1	0.3
	Cargo Scoop	2	0.5
	Fuel Processor (40/tons day)	2	0.1
	Holographic Hull	-	20
<b>Staterooms</b>	Standard x 8	32	4
	Low Berths x 8	4	0.4
<b>Software</b>	Evade/1	-	1
	Fire Control/2	-	4
	Jump Control/2	-	0.2
	Library	-	-
	Manoeuvre/0	-	-
<b>Common Areas</b>		8	0.8
<b>Cargo</b>		29.7	-

**TOTAL: 318.94875**





**88**

HULL POINTS

**CREW**

CAPTAIN, PILOT, ASTROGATOR, ENGINEER,  
MAINTENANCE, GUNNER X 2, MEDIC,  
MARINES X 3

**RUNNING COSTS**

**MAINTENANCE COST**

Cr2657/month

•••••

**PURCHASE COST**

MCr318.94875

**POWER REQUIREMENTS**

**120**

MANOEUVRE  
DRIVE

**40**

BASIC SHIP  
SYSTEMS

**40**

JUMP DRIVE

**8**

SENSORS

**THE POWER  
PLANT AND  
CHOICES**

The Harrier is an extremely capable ship – however, all this sophistication comes at a price and it is one the installed power plant sometimes has trouble paying. When performing complex operations, the Travellers may have to make some painful choices with regards which systems to route power to. The basic power requirements are listed above, but the Travellers should also be aware of the power consumption of the additional systems.



- Missile Rack Turret                      Power 1
- Particle Barbette                        Power 15
- Holographic Hull                        Power 100
- Low Berths                                Power 1





## UPPER DECK

The upper deck is more richly decorated than the lower one, and retains some of its splendour with the help of panels and decorative items moved from below. The forward part of the deck is for commanding the ship; aft is accommodation.

The upper deck is built around a central corridor, with a heavy bulkhead separating the command section from accommodation area. A slightly lighter, but still substantial, transverse bulkhead segregates the bridge from the rest of the ship. The short corridor between these bulkheads gives access to the ship's office and locker, with an iris valve leading down to the lower deck.

The forward valve, into the bridge, is normally operated in 'secure' mode, requiring an officer's authorisation (biometric recognition at the door or remote operation elsewhere) to open. At need, any iris valve can be put into 'locked' mode, requiring the entry of an officer's personal code or request to the bridge for access rather than simply opening when the officer approaches.

The aft and lower-deck access valves are normally operated in 'crew' mode, and will automatically open when a recognised crewmember approaches. Like all other iris valves aboard the ship, they can be switched to 'access' mode in which case they open for anyone who approaches, but this is not a secure way of running a ship and is normally done only when the ship is in space with a trusted crew aboard. In the days of the Sindalian Empire, most ships spent all their time in locked mode, with access between sections restricted to certain personnel only.

### 1A. Upper Bridge

In many ways, the bridge sums up the rest of the vessel. It is the area that retains most of the spirit of the original design, largely due to brass fittings and gilding having been scavenged from elsewhere on the ship. Preference was given to items in immediate view, with those fittings that could not be replaced with properly decorative items moved to corners of the bridge or covered by discreet drapes that can get in the way of shipboard operations but serve to disguise the ugly, plain and functional nature of the secondary fittings.

The captain has a railed walkway, with brass stanchions to hold when he is caught mid-pace by a violent manoeuvre. He has a gloriously upholstered chair and dark-oak panelled console to work from, but mostly directs his ship by way of dramatic gestures and verbal orders from his high platform. Most observers agree that this bridge requires the commander to wear both cape and sword, and indeed there is a receptacle on the side of the command chair for such a weapon.

### 1B. Lower Bridge

The remainder of the command crew have stations around the lower part of the bridge, where their captain can observe and inspire them from above. The majority of shipboard functions are controlled from the bridge, with local controls present mainly as backup. The exception is the engineering section, which is normally manned by drive hands. The engineering officer, however, would normally be found on the bridge running his department from a gloriously engraved console rather than getting his hands dirty.





All consoles on the bridge, including that of the captain, can be configured to carry out any role – piloting, astrogation, sensors, engineering or gunnery. However, it is common to leave each console optimised for a given role rather than a particular operator, and for consoles to be known by their customary position. Pilot and navigation officer face forward, gunners face sideways behind them and the engineering console is at the aft port side of the bridge. The captain's console is normally configured for tactical readouts and general monitoring.

## 2. Ship's Locker

The *Harrier*-class was originally designed to carry spares of many decorative components, from drapes and panelling sections to stanchions and even cutlery. These items have long ago been used, but the neat compartments where they were stored remain. This gives the ship's locker a very odd layout which can make it difficult to stock anything that was not original equipment. Nevertheless, the locker has acquired a varied assortment of items over the years, including trophies of ships taken and installations plundered. The locker needs a good, hard sorting-out and the removal of unnecessary items, but in the interim the usual solution is to shove everything back and put frequently-needed items close to the entrance.

## 3. Officers' Staterooms

The four cabins dedicated to the command crew are unusually luxurious for a warship, with large double beds and fittings that would not be out of place on a luxury liner. Of course, these are badly worn, and have been moved around so the captain's cabin retains most of its original splendour and the most junior officer's cabin resembles an opulent junkyard.



## 4. Crew Staterooms

Crew quarters aboard the *Harrier*-class were never spartan. Although cramped and intended for double-occupancy, with bunks and more functional fittings than the officer's quarters, the crew staterooms were still far better than those most Free Traders consider fit for High Passage occupancy. At least, they were when they were constructed. The crew quarters were the first place items were removed from to maintain appearances in the rest of the ship, with the result that virtually everything has been replaced over the years, with items taken from wherever they were available.

Within any given cabin there may be a mix of styles and quality of components, with a few items seized from luxury liners and others bought cheap in some dingy backwater starport chandlery. Some bunks are comfortable, some luxurious and some downright unpleasant. The same goes for furnishings; one crewman might have a deliciously carved oak panelled footlocker whilst his bunkmate uses a beat-up cardboard box.

## 6A. Common Room

The common room retains its gorgeous round oak table and most of its carved chairs, though all fittings have seen better days. The services of a good furniture restorer might save most of these items, but currently the common room is tawdry rather than opulent. An ingenious device raises the central table and chairs into a ceiling storage space, enabling the common room to be used for other purposes. A similar device drops a protective cover over the wine rack and drinks cabinet, protecting it from damage when the ship is in action. The ship's silverware has its own well-protected cabinet, and is in almost perfect condition with just a couple of mismatched teaspoons to betray long years of service. Since the *Harrier*-class has no room for a medical bay, the common room can be pressed into service as an emergency casualty receiving station. Lives have been saved by impromptu surgery on the common room table.

## 6B. Galley

The galley retains little of its original appearance. Replacement of components began long ago, and has proceeded on a distinctly random basis. Although now a mix of rather cheap and ugly functional work surfaces and horribly disfigured original panelling, the galley is overstocked with gadgets and utensils salvaged from other ships. It is actually quite difficult to work in the galley for all the 'useful' items hanging everywhere or taking up worktop space.



## 7. Stores

Naturally, a ship like the *Harrier*-class needed extensive stores for high-class foods as well as bulk rations. The superfreeze units originally fitted remain functional, though they are not as efficient as they used to be. Nevertheless, it is possible to keep meat in near-perfect condition for months or even years; a skilled chef would be hard put to notice any degradation. There are also meat lockers and a small larder for hanging game.

## 8. Dorsal Barbette

As standard, the dorsal mount houses a particle barbette. The barbette is normally commanded from the bridge, though it can be fired under local control from a workstation within the mount itself. The currently installed weapon is a TL15 Accurate High Yield particle beam. It grants DM+1 to hit rolls, and re-rolls any damage dice of a 1 or 2.

## LOWER DECK

The lower deck of a *Harrier*-class raider is far more functional than the upper areas, but was still originally outfitted to a very high standard. Some elements still remain, though in most cases panels are scratched to the point where their etchings are virtually unrecognisable, or so dented and dinged that they just look a mess.

The lower deck is in two main sections, surrounded by fuel tanks. The long forward 'nose' of the ship serves to keep the main sensor array as far distant as possible from the drives and any interference they may generate. There is much debate about whether or not this actually makes any difference, but the practice is followed on many ship designs. The nose also houses fuel scoops and the cargo-capture system. This is separated from the cargo bay by a long, wide corridor lined with storage lockers for tools and spares. Captured cargo has to be manhandled all the way down the corridor, through three bulkheads and finally into the cargo bay. Some ships carried a cargobot for this purpose, even if they only unload in ports where one is not needed.



It has been suggested that the *Harrier*-class can survive and even remain in a flyable condition with this section completely shot away. If enough fuel remained then this is theoretically possible, but it has never been put to the test. Certainly the ship could not land, and the loss of the main sensor array would be serious, but maybe a wounded *Harrier* could limp away from battle and get her crew to safety.

The main section, located below the command and living area, contains drives, machinery, weapon systems and cargo. The 'split machinery' design used on the *Harrier*-class has been criticised, like that of many vessels using the same arrangement, of making life difficult for the engineering crew. However, since *Harriers* are designed to carry quite a large crew, there is normally little need for drive hands to be rushing from one side of the engineering spaces across the cargo bay to the other – and of course, the ship's engineer works from an armchair on the bridge.

The distributed machinery also contributes to survivability. The vessel is unlikely to remain jump-capable with half her drives shot away, but it is likely that, short of catastrophic damage, a *Harrier* could retain enough powerplant and manoeuvre drive capability to escape even after sustaining a direct hit on the engineering chambers.

Armament layout seems unusual at first glance, but there is a logic to it. Most small vessels carry dorsal, ventral or side-mounted turrets for a defensive style of combat, but the *Harrier*-class is a strike ship. Her two turrets are restricted to a forward arc when using direct-fire weapons, but this suits both the image of the ship and her intended role – the common tactic is to make a sweeping gun pass and then a rapid escape if unsuccessful, or a hard deceleration and boarding if necessary.

Standard armament is a particle barbette and missile mount. The latter has the advantage that additional missiles (or torpedoes, if the armament is altered) can be carried in the cargo hold and moved to the magazine or directly into the turret with relative ease. Crew can also access the turrets easily, and move to other areas (e.g. engineering) for damage control operations when necessary. Under most circumstances, the iris valves leading to the turrets are kept in locked mode, requiring authorisation from an officer or crewmember already granted permission to access the turret before opening. These valves also provide a safety seal in the event a turret is damaged or suffers an internal missile explosion.



## 9. Avionics/Sensors

The main sensor array and associated electronic systems are located right forward in what was originally a demountable pod. Getting the pod in and out is quite an evolution, requiring the removal of a section of hullplate, but the intent was that an upgraded or modified sensor package could be retrofitted without undue difficulty. The original sensor fit was impressive enough, including neural activity sensors and a standoff densitometer in addition to more conventional sensors such as radar, lidar and a jamming suite. The ship's primary communications equipment is also housed here; loss of this chamber would reduce communications bandwidth and range, but not completely cripple it as there are backup systems distributed throughout the ship.

## 10. Cargo Scoop Airlock

The cargo scoop uses a strong magnetic field to manipulate a cargo container or other metallic object and bring it into the receiving chamber. There is a limit to how much can be achieved with a scoop however; picking up a cargo container is mostly a matter of delicate piloting. Not surprisingly the area around the cargo scoop, and also the rear of the receiving chamber, is very battered.

The cargo scoop is also used to pick up escape pods, either for humanitarian reasons or so the occupants can be ransomed. Escape pods are more delicate than cargo containers, so great care must be used when bringing them aboard. A common tactic is for vacc-suited crewmembers to open the airlock and guide themselves to the escape pod (or even a cargo container, if the pilot is not confident of a clean pickup), then bring it aboard using an attached cable. There is a powerful winch in the scoop chamber for this purpose, which can

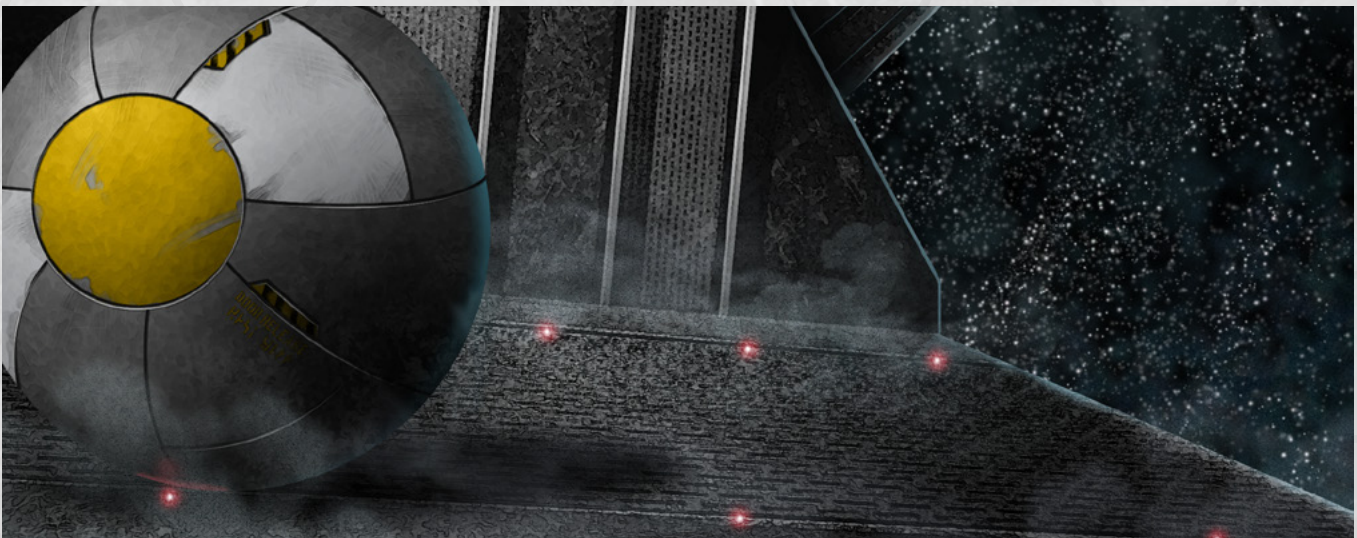
also be used for other duties such as lifting an object planetside. Using a starship as a light construction crane is wasteful in the extreme but with no better options it can speed up construction of a base – or looting of an installation.

## 11. Fuel Processors

The *Harrier*-class is designed to be as self-sufficient as possible, and has scoops and processors to enable fuel to be obtained without visiting a starport. The normal source is a gas giant's atmosphere, skimming for hydrocarbons which can be processed into liquid hydrogen fuel and various by-products. These are mostly vented from the ship, but oxygen is usually added to the ship's stocks. Fuel can also be produced by cracking water or ice, again producing oxygen and hydrogen. The fuel processors can be run to purify the ship's drinking water at need, though this requires adjustments that takes a few hours. The result is that a *Harrier*-class ship can endlessly supply her crew with fuel, water, air to breathe and ice cubes for their drinks.

## 12. Countermeasures Suite

The ship's countermeasures suite is housed in these compartments. Secondary computer nodes are located throughout the ship, enabling operations to continue even if these rooms were out of action. However, efficiency would be severely curtailed in this case. The countermeasures suite has been plundered of its panelling and most decorative items, with the exception of the beautifully decorated doors leading onto the central corridor. The countermeasures suite also serves as an intelligence centre for the ship, with a large holotank enabling officers to stand in the midst of displays, simulations and projections, immersing themselves in data and assessing options.







### 13. Main Airlock

The main airlock exits the belly of the ship, which is convenient for groundside operations. It is large enough for four people at a time, or two heavily equipped personnel in combat armour. This limits the amount of troops that can be delivered for an assault, but the *Harrier*-class was never intended for this sort of hostile boarding – she is a raider, not a pirate, and would normally shoot up the target before boarding or simply destroy it.

### 14. Low Berths

The eight low berths carried by the *Harrier*-class are rarely used for passengers. They provide a survival margin in the event of serious damage to the ship or a shortfall in supplies, and are sometimes used to carry additional crewmembers in case of casualties or when a prize crew is desired for a captured vessel. The low berths are also used to house prisoners; it is no coincidence that the low berth chambers are a short walk (passing through no sensitive control areas) from the cargo scoop receiving chamber.

### 15. Magazine

The default armament for a *Harrier*-class raider includes a missile turret in the Vent mounting. This chamber is used to house ammunition for the turret when it is so equipped, and can serve as a secure cargo or equipment locker at other times. The chamber is designed to vent blast outwards in the event of a detonation; its internal bulkheads are strongly built, making this an ideal place to store sensitive items or perhaps a prisoner who cannot be put into a low berth.

### 16. Ventral Turret

As standard, the *Harrier* mounts a missile system in its ventral turret, sometimes replaced with a torpedo launcher or occasionally additional beam weapons. The lack of light weapons such as a laser is considered by some to leave the *Harriers* vulnerable to attack by fighters and similar small craft and the lack of a point-defence weapon makes incoming missiles a serious problem, but there is only so much that can be mounted onto a small hull. The missile system is often used to make an attack on a vessel that has already received a particle beam strike, which can deter pursuit or keep the opposition busy whilst the *Harrier* comes around for another pass. It is also possible to run in behind a missile salvo, forcing the enemy to choose between point-defence or engaging the *Harrier*.



The ventral turret is normally operated from the bridge, but can be fired under local control if necessary. Loading is automatic, so no crew are required to be in the turret other than to deliver additional missiles from the magazine. The ventral turret of the Harrier in the Pirates of Drinax campaign was disabled by damage a long time ago. The turret space has been rather crudely restored to environmental integrity but needs complete replacement before any weapons can be mounted. At present the space is used for storage.

## 17. Engineering Spaces

The drive and power systems of the *Harrier*-class are split between two more or less identical engineering spaces, each with a portion of the jump and manoeuvre drives and the powerplant. The ship's complement generally includes several multiskilled personnel who function as drive hands and maintenance technicians under the control of the engineering officer. The cargo area between the engineering spaces is sometimes used as a maintenance bay or converted to workshops. This is quite common on vessels that may be away from a friendly port for some time or are trying to establish their own base of operations.

There are several multifunction consoles within the engineering section, and it is common practice to leave one configured as an emergency or backup piloting station. This is often used when repositioning the ship on a landing pad to receive cargo or for repairs, making a trip up to the bridge unnecessary for minor adjustments. All control operations can be overridden from the bridge however, and the secondary piloting station must be released by an officer before use. Preference is always given to commands coming from the senior pilot and main piloting station.

## 18A. Cargo Bay

The cargo bay is subdivided by internal partitions, and is not efficiently designed. It suffers from a low ceiling and far too much clutter in the form of busts and reliefs of important Drinaxian figures peering down from the walls. This area is normally the first part of the ship a visitor sees (unless they are hauled out of an escape pod in the receiving chamber), and is quite imposing at first. For those that have to work in this area, the odd shapes and general lack of functionality can be quite annoying.

## 18B. Aft Cargo Hatch

The aft cargo hatch is accompanied by a retractable ramp for loading, and can be used for planetside assaults if this seems desirable. Cargo handling equipment is extremely basic, but since the *Harrier*-class is intended to operate with an oversized crew this is not generally much of a problem. Raiders rarely undertake commercial-style cargo transfers; more commonly they are loaded at the beginning of a mission by personnel at a naval dockyard or base, with unused supplies unloaded the same way at the end of the deployment or jettisoned if necessary.

## 19. Landing Gear Access

The landing gear is retractable, enabling the vessel to maintain its streamlining. The downside of this is a requirement for heavy-duty hydraulic and electrically-operated gear to move the landing legs in and out of their housings. This in turn requires maintenance on the bulky but not overly complex system to be carried out in a confined space. Normally maintenance is done on the ground or in port, but at need the retraction spaces can be entered whilst the ship is in flight and a defect dealt with before arriving at the ship's destination.





# CREW REQUIREMENTS & SHIPBOARD OPERATIONS

The *Harrier*-class can be operated, at a minimal level, by two personnel; a pilot/astrogator and engineer will suffice to get the ship from one star system to the next. However, this leaves absolutely no margin for dealing with problems, and requires that maintenance schedules – and indeed some routine operations – are simply ignored. In the longer term (measured in weeks rather than months), a *Harrier* operating without a proper crew will suffer breakdowns or some kind of incident.

The official full crew roster for a *Harrier*-class raider is twelve, a large complement for a 200-ton ship. When in action, the extra crew are intended to conduct damage control operations, assist more expert crewmembers and occasionally board a captured vessel. It may be possible to put a prize crew aboard a captured ship, but if this is the intent the *Harrier* will normally carry a couple of spare specialists in her low berths, rather than stripping her own crew. Outside combat, the extra personnel help keep the ship clean and well-maintained, though it has been suggested that one reason for so many personnel is simply to make the captain feel important.

The officer positions of a Sindalian (or Post-Sindalian, i.e. Drinax) ship follow a hierarchy similar to that used in many navies, with the ship's captain supported by his specialist officers. There are four officer positions aboard a *Harrier*: Captain, Executive Officer, Navigation Officer and Engineering Officer, in order of seniority.

The remainder of the crew is made up of ratings (non-officers), some of whom are specialists in their own field. A fully crewed *Harrier* carries two gunners, a medic and three marines, in addition to an assistant engineer and backup pilot.

## ACTION STATIONS

When a fully crewed *Harrier* is at action stations, the bridge is crewed by the captain, first pilot, navigation officer and engineering officer, plus both gunners. The drive chief and second pilot will be in the engineering spaces, with the medic in the common room standing ready to receive casualties. Marines will suit up and muster at the main airlock, but will almost immediately be assigned other tasks including damage control, visual inspection of possible damage and assistance in the engineering spaces.

## ROUTINE OPERATIONS

Under routine conditions, standard practice is to have a qualified bridge officer or pilot dedicated to sensor watch on the bridge, and a qualified person in the engineering spaces. This can be the drive chief or any other crewmember with sufficient skills to monitor the readouts, possibly a marine or the second pilot, but almost never the engineering officer. An Officer of the Watch is also normally on duty; if he is not standing a watch on the bridge he will use the ship's office.





## Captain

The senior officer aboard the ship is her captain, though his or her actual rank might vary. The captain is usually, but not always, a qualified bridge officer who can replace an injured crewmember or one who has been sent off as part of a prize crew. Occasionally, the captain's role is taken by a non-spacer who might be a ground combat specialist or political leader. Some of these individuals have proven to be shrewd tacticians and effective raiders, but a ship's captain should be the conductor of an orchestra. It is hard to do this effectively without understanding music, so to speak, and ships whose commander is not an experienced spacer have generally underperformed in action.

## First Pilot

The first pilot role is traditionally assigned to the executive officer of the ship, though this can vary. The thinking behind this practice is that a successful executive officer will next progress to captaincy of his own ship, and since the first pilot is responsible for controlling the ship in combat, an understanding of this role is essential to commanding a ship. Many navies consider the mathematics-heavy role of astrogator to be more senior than that of the pilot, but the Sindalian Empire and its successors felt that a captain should have recently been a pilot in order to fully understand how a ship behaves in combat. The first pilot is often referred to as the first lieutenant if he is the executive officer, and to many Drinaxians the terms are interchangeable.

## Navigation Officer

The navigation officer is responsible for astrogating the ship in normal and jump space, and for overseeing all sensor tasks during combat and other spaceborne operations. The navigation officer is usually the ship's second lieutenant.

## Engineering Officer

The engineering officer is responsible for overseeing all maintenance and repairs as well as monitoring the drive systems. The role is largely managerial aboard a *Harrier*-class vessel, with the engineering officer normally visiting the drive rooms only to carry out inspections. Most tasks do not require physical presence aboard a high-tech vessel, so this arrangement is entirely workable unless the ship takes damage that requires a hands-on approach. In that case, the delay in getting to the engineering spaces has doomed some *Harriers*, but the fact there is an engineer outside the machinery spaces has at times saved ships from losing their entire technical complement. The practice remains controversial, with no hard-and-fast conclusions either way.

## Second Pilot

A fully-crewed *Harrier* carries a backup pilot, who is not normally an officer. This role is often taken by officer cadets or personnel being trained for a command role, but this is by no means universal. The second pilot is usually assigned a duty station away from the bridge when the ship is in action, typically leading the damage control party or standing ready to assist any personnel who need it. The second pilot is often an odd-job-man aboard a *Harrier*, especially when other crewmembers are busy at their specialist tasks. This gives rise to various figures of speech such as 'busier than a second pilot' or 'leave that for the S-P'.

## Drive Chief

The drive chief is a specialist non-officer, typically a rating of considerable experience. He is in charge of the machinery spaces when the engineering officer is not present, which is most of the time, and is assisted by the marines and gunners not required for combat duties. The second pilot is often co-opted to assist with engineering tasks when others are unavailable.

## Gunners

A fully-crewed *Harrier* carries two gunners, of whom one is normally a missile specialist and the other a beam gunner. Maintenance of the turrets and any missiles carried falls to the gunners, but in action their duty stations are normally on the bridge, with loading of weapons left to the autoloader or any personnel who can be reassigned to bring fresh missiles in from the magazine.

## Medic

The ship's medic is (hopefully) a part-time post, and most of the time the medic acts as a chief steward. Even in combat, his role is more commonly to supply the bridge crew with sandwiches and coffee than to patch up wounded crewmembers. However, his duty station is the common room/galley area where casualties can be brought to him at need.

## Marines

The ship's three marines must be competent in groundside combat and vacc suit operations, of course, but most of the time they act as additional technicians and maintenance crew. Marines may be tasked with anything from assisting with cargo handling through food preparation to helping out in the engineering spaces. Their combat duty station is officially close to the main airlock, but more commonly marines will be encountered rushing from one necessary task to another or helping the drive chief. Properly qualified marines are trained to at least a basic level in a non-officer shipboard skill such as Engineer, Electronics, Gunner or Mechanic. All marines should also be capable of conducting damage control operations.



# DAMAGE & DEFECTS

The *Harrier* was built using advanced techniques and exotic materials. This was highly advantageous when the ship was first constructed, as it gave her greater resilience than a comparable vessel. When Drinax could still create these materials, the fact they were difficult to obtain and work with was not too much of a problem – her home dockyard could make good any damage or replace entire sections of the hull. The fall of Drinax two centuries ago changed all that.

Not only was the Drinaxian fleet pounded into wreckage, but the dockyards and spares warehouses were smashed too. The industrial centres that created the *Harrier's* exotic materials were bombed along with the rest of the planet. The loss did not stop at facilities – the techniques of forging these materials and working with them survived in a few databases, but the body of experience needed died along with the engineers and technicians. Today, the materials used to build the *Harrier* are all but lost to history.

It is possible to repair damage to the *Harrier* using conventional materials, but normally simple tasks like welding or creating a good seal are extremely difficult. The exotic materials originally used have different behaviour under stress, heating and other conditions to more common metals and ceramics. The result is that repairs come undone under high acceleration, weapons fire or even just the heating and cooling cycle as the ship turns different surfaces towards a system's star.

In order to avoid the prospect of springing leaks or losing sections of hull plate, repairs must be done slowly and carefully, with frequent references to the few surviving texts on the subject. This problem can only be rectified by obtaining a supply of the original materials. The discovery of a stash somewhere or, even better, machinery capable of producing a reliable supply of advanced materials, would be of enormous benefit to the operators of the *Harrier*. Alternatively, a wrecked Drinaxian or Sindalian ship could be stripped of its useable components to offset the need to work with inferior materials for a while; a crew who heard rumours of such a treasure might be tempted to turn aside from almost any mission in order to solve their long-term repair problems.

## CONDITION OF THE *HARRIER*

When she is first assigned to the Travellers, the *Harrier* is far from her original glory. She is still an impressive ship, but in many ways also tragic. Her present reduced status is a sad reminder of what once was... or perhaps it is a symbol of what might once again come to be. Indeed, King Oleb wants the *Harrier* to represent the restored glory of Drinax, and that means putting her back into the condition she deserves.

This is not just about combat capability and spaceworthiness; Oleb wants the drapes and cushions to match; he wants all of the ship's silverware found and functional controls to be replaced with beautiful brass ones carved into baroque shapes. This might get tiresome for the ship's operators – demands for an explanation why they bought more missiles instead of replacing the second lieutenant's cabin fittings might be annoying – but to Oleb, the symbology is important.

He may actually have a point – the *Harrier* might be worth more as a symbol than a fighting ship. Drinax might claw its way back to prominence by the vigorous application of style rather than substance. After all, a slight upgrade to the ship represents a marginal increase in Drinax' power but impressing a raider band so much they throw in their lot with Oleb could bring in two or three more ships. Ultimately, sending out the *Harrier* is a means to an end. She is a tool, not a goal, and even if the Travellers forget this, Oleb will not.

## REPAIRING THE *HARRIER*

The *Harrier* requires three kinds of repairs: Structural, Technical and Cosmetic. Most of the defects she has are a combination of these types. For example, repairing the crippled ventral turret requires a combination of Structural and Technical components. Ideally, the appearance of the damaged area should also be restored, requiring cosmetic improvements, but this is not necessary for the efficiency of the ship. It will please Oleb (or at least stop him shouting so much) and may be important in the long run.



Repair components are abstracted as Repair Units (RU) and subdivided into these three categories. Obviously, a Cosmetic RU cannot be used to patch a hull breach or replace a burned out console (except by disguising the missing component with something decorative perhaps...), but to do the repair job properly (so the ship is restored in appearance as well as function) requires an expenditure of five Cosmetic RU for every Structural or Technical RU expended. This is in addition to any cosmetic work noted further on.

Emergency repairs of battle damage can be carried out as normal, but there is a real chance that the repair will fail after a while if the correct procedures for matching mundane materials to the ship's exotic components are not followed – something that is simply not possible in the middle of a space battle. Skill checks made to carry out an emergency repair indicate whether or not the repair was successful at the time. Once things have calmed down a bit the referee should secretly roll 2D and consult the Quality of Repair table. The same procedure should be used any time work is done on the ship without taking care to match materials and procedures, though this is far less risky than a mid-battle jury rig.

### Quality of Repair

2D	Result
4-	The repair begins to fail. The crew will get some warning, but the damage effect will be re-implemented after 3D minutes. A complete new repair job is required to fix the damage.
5-8	The repair holds for now, though it produces alarming creaks or intermittent faults. After 1D days, the referee should roll again on this chart.
9+	The repair is good and will hold indefinitely.

A result of 5-8 can be obtained repeatedly, requiring another roll after 1D days.

- DM -4 if the repair was a rushed emergency damage control procedure made without proper materials
- DM-2 if the repair was an emergency procedure made with the correct materials.
- The highest appropriate skill level working on the repair can be applied as a positive DM. This will usually be the Engineering Officer's skill, which can be applied to all repairs ongoing at once if he directs the process in the proper manner from the bridge.

Any repair made with due regard to correct procedures, or with the correct materials, takes three times as long as normal but is not subject to this process. Emergency battle repairs cannot be done slowly and carefully, and are always considered rushed but are much more likely to be successful if the correct materials are available.

Many opportunities for roleplaying and dramatic narrative can arise from this process. A repaired hull section that suddenly blows out again as the *Harrier* makes its landing approach could be... interesting. The crew might figure out ahead of time that jumping with a hastily repaired drive could require a second emergency repair in jump, with the field about to collapse. Sooner or later, the desire to fix the ship properly will become overwhelming, and of course that will lead to new adventure possibilities.

## INITIAL DEFECTS

The following defects are present when the Travellers first receive their ship. The amount of Structural RU, Technical RU and Cosmetic RU required for each repair are noted at the end of the entry.

### Hull

When built, the *Harrier* had a hull value of 88 rather than the 80 she would have had with conventional shipbuilding materials. However, her age and the damage she suffered in the fall of Drinax reduced this to a mere 40. Without extensive repairs the *Harrier* is rather fragile. Each Structural RU assigned to repairing the hull increases Hull value by 2D, to a maximum of 88.

### General Systems

The *Harrier's* running costs are double what a ship of this type should normally require. The extra cost is absorbed in replacing minor systems and components, and ongoing losses through leaks, spoilage and other ongoing costs. Each Technical RU assigned to making general repairs reduces the extra operating cost by 20%, to a maximum reduction of 100%, which represents a return to normal operating costs.

### Ventral Hardpoint

The entire turret mechanism for the ventral weapon mount was destroyed by a direct hit from a fusion weapon. Repairing the turret to the point where it can fire into the ship's frontal arc only will require 1 Structural RU and 1 Technical RU. A full repair, enabling the weapon to fire in any direction will require an additional 1 Structural RU and 2 Technical RU.



## Manoeuvre Drive

The M-drive has been restored to full function, but is slightly unreliable. Any time a double-1 comes up on a Pilot check, the drive cuts out, and the ship is without manoeuvre drive for that round. Remedying this problem requires a proper diagnostic of the drive (requiring 3-4 days and partial dismantling of the drive system) which will indicate the level of repair required. Remedying the problem will require D3 Technical RU and a further 3 days of rebuilding the drive.

## Jump Drive

The *Harrier's* jump drive is fully functional, but a little wayward. It imposes DM-2 on all skill checks associated with it, which increases the chance of a serious misjump. Remedying this is a two-stage process. It can be reduced to DM -1 by the replacement of various components with fairly obvious defects. This will require one day and one Technical RU. Fully fixing the drive means an in-depth inspection and testing of all components. The drive will need to be dismantled (a process requiring D3 days of work) and the problems carefully catalogued. D3 Technical RU will be required to make good the defects, with installation and reassembly taking 1-2 more days.

## Cosmetic Repairs

Cosmetic repairs do not affect the functionality of the ship, but do improve its ability to function as a diplomatic symbol. Most repairs require only Cosmetic RU, but in some cases a few technical systems will have to be replaced to make the ship look right again.

- **The Bridge** requires D3 Technical RU and 12 Cosmetic RU to fully restore its former glory.
- **The Crew Accommodation Area** requires 16 Cosmetic RU to fully restore its appearance.
- **The Lower Deck** requires D3 Technical RU and 12 Cosmetic RU to fully restore it.
- **The Outer Hull** requires 20 Cosmetic RU for full restoration.

Whenever the Travellers are involved in diplomacy on behalf of Drinax, the impression their ship makes will be relevant at the referee's discretion. For example, conducting diplomacy by video conference from a patched and mismatched bridge will create a negative impression, whereas treating visitors to a black-tie dinner in an opulent compartment may convince them that Drinax is a power worth taking seriously. It should

be possible to conceal some aspects of the ship – for example, it is unlikely that most planetside dignitaries will see the engineering spaces – but the revelation that the highly decorated bridge is a front for a ship in severe disrepair could undo previous good impressions. The referee should impose the following DMs on diplomacy conducted on behalf of Drinax if the Travellers can contrive to display their beautiful ship or its run-down nature becomes apparent.

- DM-2 If the ship has unrepaired new damage
- DM-1 If the ship is in the state the Travellers first received it
- DM+0 If the ship makes a mixed impression, (e.g. the hull is a mess but the bridge is gorgeous)
- DM+1 If the ship makes a good impression, it has been sighted in port with a fully restored hull, or video conferences are conducted from a restored bridge
- DM+2 If the ship has been fully restored and the Travellers find a way to show it off

Note that this applies to cosmetic repairs only. A jump drive that looks like a baroque masterpiece but does not work properly can still create a good impression provided its internal defects are not revealed.

## MAKING REPAIRS

Full restoration of the ship is likely to require 6-10 Structural RU, 12-16 Technical RU and 60 Cosmetic RU.

At the beginning of the campaign, Travellers with Ship Shares can spend them fixing the ship. One Ship Share can be traded for one Structural RU or Technical RU, or 2D Cosmetic RU. These can be spent before the *Harrier* begins her first cruise, or can be held in reserve for later upgrades.

Once play has begun, it is possible that RU of various sorts might be found in supply caches or salvaged from wrecked Drinaxian ships. They can also be obtained by converting standard components gained by purchase, piracy or plundering. Each Structural RU requires MCr0.25 worth of standard starship components or heavy-industry produce. Each Technical RU requires MCr0.75 worth of starship components or light industry produce. A Cosmetic RU costs MCr0.1 for raw materials and must be custom-fitted, etched or otherwise installed 'just right' at the rate of one RU per 8-hour shift.



FOR THE ATTENTION OF THE ENGINEERING OFFICER.

REPAIR UNITS (RU)	STRUCTURAL (SRU)	TECHNICAL (TRU)	COSMETIC (CRU)	SHIP SHARES
NOTES				THE COST GIVEN IN [ ] IS THE MINIMUM FOR A PARTIAL REPAIR.
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## HULL

DESCRIPTION OF FAULT: *Reduced Hull Points*

REPAIR COSTS	SPENT	CURRENT STATUS	REPAIRED?
<b>STRUCTURAL RU</b> 1 for 2D Hull Points			
<b>COSMETIC RU</b> 5x SRU Spent			

## GENERAL SYSTEMS

DESCRIPTION OF FAULT: *Loss of efficiency, wear & tear.*

REPAIR COSTS	SPENT	CURRENT STATUS	REPAIRED?
<b>TECHNICAL RU</b> 1 for 20% reduction			
<b>COSMETIC RU</b> 5x TRU Spent			

## VENTRAL HARDPOINT

DESCRIPTION OF FAULT: *Complete loss of function.*

REPAIR COSTS	SPENT	CURRENT STATUS	REPAIRED?
<b>STRUCTURAL RU</b> 2 [1]			
<b>TECHNICAL RU</b> 3 [1]			
<b>COSMETIC RU</b> 5x SRU & TRU Spent			

## MANOEUVRE DRIVE

DESCRIPTION OF FAULT: *Intermittent drive failure.*

REPAIR COSTS	SPENT	CURRENT STATUS	REPAIRED?
<b>TECHNICAL RU</b> D3			
<b>COSMETIC RU</b> 5x TRU Spent			

## JUMP DRIVE

DESCRIPTION OF FAULT: *Increased possibility of missjump.*

REPAIR COSTS	SPENT	CURRENT STATUS	REPAIRED?
<b>TECHNICAL RU</b> D3+1 [1]			
<b>COSMETIC RU</b> 5x TRU Spent			

## COSMETIC REPAIRS

LOCATION	COSMETIC RU COST	TECHNICAL RU COST	REPAIRED?
Bridge	12	D3	
Crew Accommodation	16	-	
Lower Deck	12	D3	
Outer Hull	20	-	



# UPGRADING THE *HARRIER*

In addition to making repairs, there are certain upgrades that can be made to the *Harrier*. Blueprints for these exist in records at the Floating Palace, along with notes on how to install and operate them. However, the process is still one of trial and error, as no body of experience exists for working on such a ship.

## VENTRAL TURRET

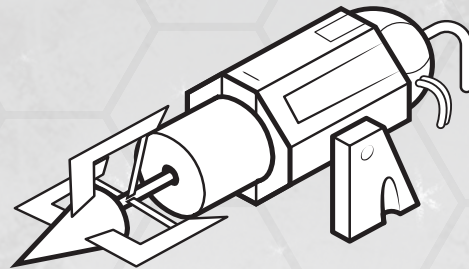
The ventral turret needs rebuilding from the mechanism up in order to function as a weapons mount. There are a number of ways this space could be made useful without doing this, however.

### Line Gun

It would be a simple matter to build a line launcher into the turret space, replacing the already makeshift turret front piece with a new one. A line gun is used to fire a towing cable or tether across to any free-floating object. Attachment is usually by way of magnetic grapple, which can take a few attempts to properly 'stick', or a harpoon which penetrates thin metal such as a cargo container. The harpoon can also be used to tether a ship to an asteroid, either to hide or obtain resources from it.

Once a target is harpooned, the ship can be slowly winched into contact with it, which is safer (if slower) than using the engines. More importantly, the vessel will remain in close contact with the target without using power, which can be useful when trying to evade detection. Any ship attempting to detect or locate a ship tethered to a substantially larger target (such as an asteroid) DM-2 on Electronics (sensors) checks.

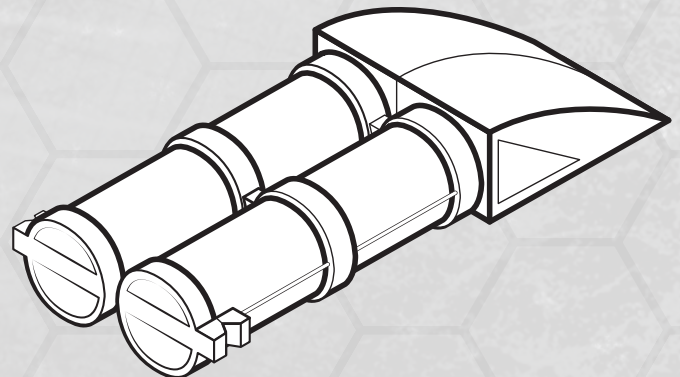
A standard line gun, with a set of grapples and harpoons, costs Cr50000. Fitting it in the turret space would require a couple of days and another Cr50000 if existing materials were reused. A more advanced version of the line gun, capable of taking core samples from asteroids, costs Cr200000 and is used by some scientific and prospecting craft.



### Fixed Torpedo Mount

For operators enchanted by the image of one or more *Harriers* sweeping in to make a devastating strike, the idea of turning the ship into a jump-capable torpedo boat may appeal. There is no room to convert the existing mount into a torpedo barrette, but a fixed mount could be set up in the existing hull space. There is room for launch cradles carrying two torpedoes in the turret space, but reloading would have to be manual. The adjacent one-ton missile magazine could hold three spare anti-ship torpedoes. Weapons mounted in this manner would only fire into the ship's forward arc, but this suits the fast-pass style of combat favoured by many *Harrier* operators.

Creating a fixed torpedo mount would require one Structural RU, plus 3 Cosmetic RU if the internal and external appearance of the ship is to be preserved. Torpedoes can be found on page 31 of *High Guard*.

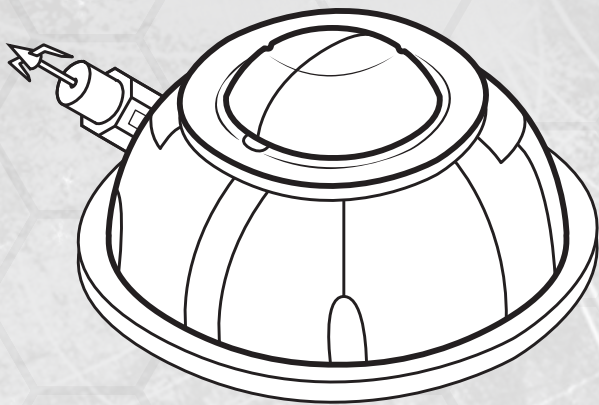




## Anti-Personnel Weaponry

Up to four weapons, each of less than 250kg, could be installed in the ventral turret space. In addition to the cost of the weapon, mountings and power feeds would cost Cr1000 per weapon. However, some modification would be necessary to the turret, costing an additional Cr5000 per weapon and one Cosmetic RU to maintain the ship's external and internal appearance.

Anti-personnel weapons mounted in this way would have a limited arc of fire, but could strike targets in front of and below the ship which would permit strafing or direct ground-attack operations. The ship can pivot in place easily enough to align her anti-personnel guns if a greater arc of fire is desired, though this would make her an easy target.



## Assault Pod

The ventral turret could be converted into an assault pod for up to four armoured marines. The pod consists of a ready chamber which can be pressurised, and is covered by a large hatch. The two iris valves in the corridor leading to the missile magazine would serve as an airlock when this chamber was open to vacuum, and the magazine itself as storage and maintenance space for boarding suits.

The assault pod conversion includes a light version of the line gun described before, designed only to allow personnel to make a rapid transfer onto the hull of another vessel. Any serious strain, such as a ship trying to pull away, would snap a light line but transfer down it would be fast and secure. At the far end, the anchoring unit fired by the line provides a safe landing and tethering spot for marines before they attempt to enter the target craft.

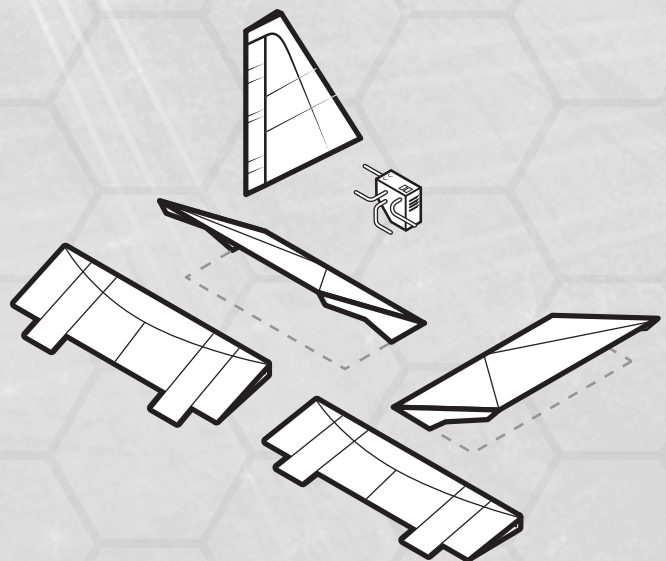
Conversion to an assault pod costs Cr200000 plus one Cosmetic RU if the ship's appearance is to be maintained; in addition, the crew may wish to obtain boarding suits or other high-end space armour.

## SPECIALISED ATMOSPHERIC MANOEUVRE KIT

The *Harrier* has a streamlined configuration, and is claimed by many aficionados to perform very well in an atmosphere. However, it is not really optimised for in-atmosphere operations. Its wings are streamlined but have no control surfaces; the ship relies on its normal propulsion system to manoeuvre. However, it would be possible to rebuild the wings to give proper aerodynamic assistance with an upgrade designed specifically for the *Harrier*, rather than using off the shelf components. This is more expensive than standard aerofins (see page 43 of *High Guard*) but consumes less space when applied to the *Harrier*.

This is a fairly major undertaking, requiring a week or more in a maintenance facility or dockyard. When the work is complete, the *Harrier's* wings will function as control surfaces, micro-controlled by a specialist flight computer. The result will be DM+2 to all Pilot checks made in an atmosphere that is Thin (type 4) or higher. This also applies when manoeuvring in a gas giant's atmosphere or underwater, though it does not give the *Harrier* the ability to penetrate to great depths.

The atmospheric manoeuvre kit will require one Structural RU and 2 Technical RU as well as 2 Cosmetic RU if the external appearance is to be maintained. It also uses 1 ton of cargo space to house displaced fuel, the flight computer system, and actuators for the control surfaces. The specialised computer costs an additional Cr250000; without it the kit provides DM+1 instead of DM+2.





## UNDERWATER OPERATIONS HIT

Almost all starships can survive being submerged in shallow water, but this does not equate to operating underwater in an effective manner. Under normal conditions, a starship is in vacuum with an internal pressure not much greater than one atmosphere, and is designed to keep air in at this pressure differential. There is a large margin of safety built into most ship designs, but there is a huge difference between keeping air in and keeping high-pressure fluids out.

One atmosphere of pressure is encountered on an Earth-mass world at a depth of just ten metres below the surface. This is in addition to the normal atmospheric pressure of the world. A starship can easily withstand this of course, even though its seals are designed to work in the opposite direction. Five atmospheres should not be much of a problem for most ships, but this is encountered just 50 metres down.

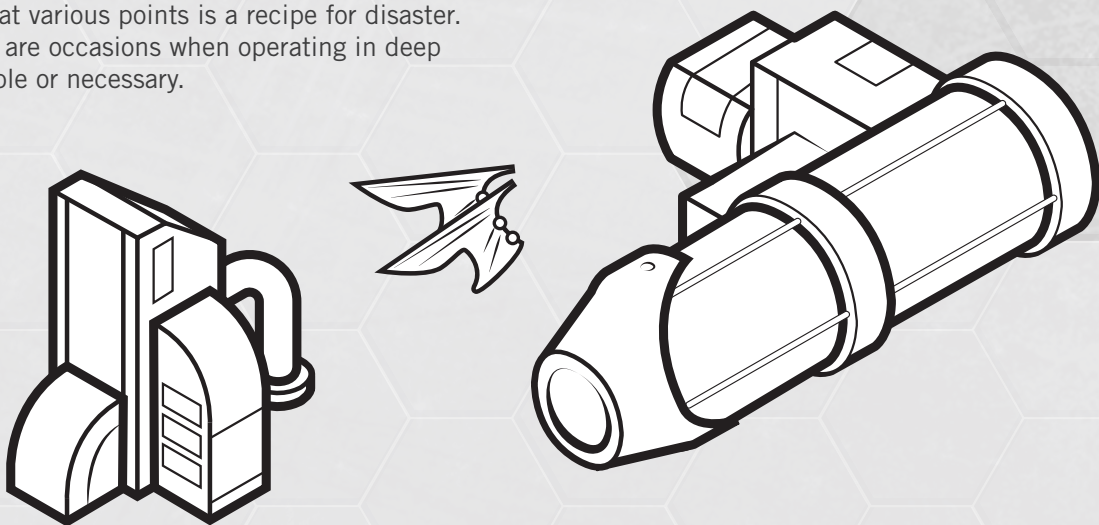
The *Harrier* is about 40 metres long. Should she somehow end up standing on her tail in water, the pressure on her cargo doors would be about four atmospheres greater than on her avionics access hatch. This situation is unlikely to arise (though, with Travellers, who knows...) but it does illustrate the rapid increase in water pressure at depth.

By way of comparison, the average depth of water over the continental shelf on Earth is about 60 metres, but can be as much as 150 metres. Few starships can operate at depths of more than 50 metres without starting to leak a little, but this is generally tolerable for a period; at 100 metres down the leaks will be serious. Crush depth is much greater, but operating a highly complex vehicle filled with electronic components with water entering at various points is a recipe for disaster. However, there are occasions when operating in deep water is desirable or necessary.

The usual reason for entering deep water is to hide. System defence boats and raiders both use this practice to good effect, and are often modified to permit such operations without undue hazard. The *Harrier* can be partially or fully configured for underwater operations. Partial modification permits operations down to a depth of 300 metres without hazard, and also installs an underwater manoeuvring system. This is a modification of the ship's fuel scoop system which is fitted with a powerful pump and exhaust capable of driving the ship at 10 knots underwater (equivalent to Idle speed). Small fins provide guidance, and compartments within the fuel tanks can be used to trim and ballast the vessel. This comes at the cost of 2 Structural RU and 2 Technical RU, plus 2 Cosmetic RU if appearances are to be maintained, and takes up 2 tons of cargo space for extra machinery.

Partial modification is entirely sufficient for operations on the continental shelves of most worlds and along their fringes. Full modification is more comprehensive, permitting operations down to 1000 metres. The average depth of Earth's oceans is around 3500 metres, but those of many worlds are shallower and, in any case, there will usually be seamounts or shallower areas where a modified starship can 'land'. Full modification also includes a more powerful drive system capable of 20 knots underwater (equivalent to Very Slow speed) plus a bank of powerful lights and specialised underwater sensors. Airlocks are also strengthened to allow the use of deep-diving suits should the Travellers wish to go outside. Full underwater modification costs 5 Structural RU and 3 Technical RU plus 4 Cosmetic RU if appearances are to be maintained. In addition, 6 tons of cargo space are also consumed.

If any underwater modifications are made and an atmospheric manoeuvre kit is also installed, the DM on Pilot checks applies when operating in any fluid medium.





# CARGO CAPTURE DRONE

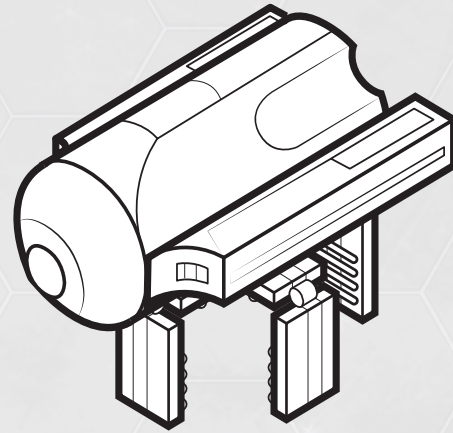
Using the scoop to pick up cargo containers is quick but often hazardous. A capture drone is an alternative which can also be used to grab debris, ice chunks for refuelling or distressed crewmembers who have drifted clear of their working area. The grab mechanism consists of a set of serrated jaws (designed to grip, not tear) and several interchangeable hook/scoop/claw devices on extendable arms.

The main drone unit takes the form of a cylindrical central body with multiple gas jets. Most of the interior is consumed by a tank for liquid gas. Carbon dioxide is by far the most common propulsion medium but in an emergency a drone can be 'refuelled' using the ship's air system. There is, in addition, a disposable cold rocket unit at the rear of the drone, which when activated generates high thrust directly along the drone's main axis. This is created using chemical reaction between two solid compounds, which can be separated by a simple mechanism to cut off the reaction and therefore the thrust.

Using the emergency thruster, the drone can accelerate at 4G for about 4 minutes with a payload equivalent to a vacc-suited casualty. This can be enough to reach a distressed Traveller and grab them, flip and decelerate, then convey them back to the ship. This is a low-percentage and rather desperate rescue method, but has worked. More commonly, a capture drone used in a rescue would tow rescue balls or softsuited evacuees out of a damaged ship.

The primary use for a capture drone is, as the name suggests, to grab cargo containers and attach a tow line. The parent vessel can then winch the container aboard, with the drone applying corrections to the container's vector. This has the advantage of allowing the container to be manoeuvred at a greater distance than the magnetic fields of a cargo scoop would normally permit.

Cargo capture drones are tricky to handle, inflicting DM-1 to Electronics (remote ops) checks made to control them. A drone costs Cr70000 new, but one is already aboard the *Harrier* when the Travellers take command. A single drone consumes negligible space, but ten will consume one ton.



# CONFIGURABLE POD

The central section of the *Harrier's* cargo area can be converted into a mission-configurable pod. This involves little more than creating attachment points for internal walls and fittings, and replacing existing partitions with more substantial light bulkheads to preserve atmospheric integrity when the rear cargo doors are open. Creating a pod requires 1D days' work and costs Cr250000 for materials. The ship loses 10 tons of cargo space to the pod, and the forward section of the cargo area (about 10 tons of space) becomes inaccessible from the aft cargo hatch. Small items can still be brought aboard through the main airlock, of course.

Once in place, the pod can be reconfigured at need or simply swap one pod out for another, though there are expenses involved.

The pod can be used to create additional living space or house specialist facilities, for example. These have to be built within the pod at a cost of +20% more than usual. Cargo and fuel have no significant extra cost; suitable fittings are assumed to be created when the pod is installed. For example, if the pod is used to carry a 4-ton medical bay, a standard stateroom and a couple of tons of general stores, the cost will be (MCr2 + 20%) MCr2.4 for the medical facility plus (MCr0.5 + 20%) MCr0.6 for the stateroom, for a total of MCr3.

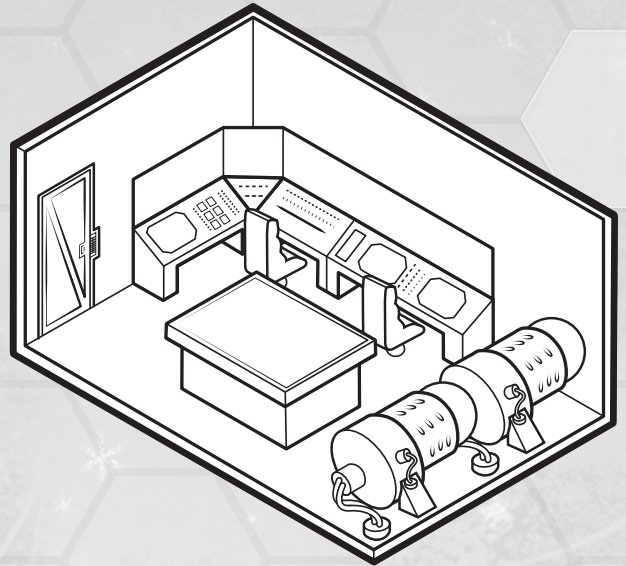
Many of the possible modifications could be directly installed into the ship on a permanent basis, but by creating a mission pod the Travellers can swap out components in a matter of an hour or so. Even an entire stateroom can be hauled out and replaced with something else. A selection of possible pod configurations follows:



## Command Suite

If the *Harrier* is intended to lead other ships, or simply requires additional electronic warfare capabilities, a command suite can be fitted. This contains an advanced electronic warfare suite granting DM+4 on all checks related to electronic warfare (e.g. jam an enemy ship's communications or punch a signal through hostile interference), plus a multi-spectral scanning system capable of penetrating the hull of a lightly armoured vessel (up to 4 points of armour) at a range of up to 50 km. Whilst not as powerful as the Shallow Penetration Suite found on page 42 of *High Guard*, within its operating range this system allows marines to be tracked within a hostile vessel and pockets of resistance to be identified, as well as building a map of the target ship indicating damage or important objectives.

In addition, the command suite has dedicated workstations allowing a flotilla or marine commander to coordinate forces. This gives DM+1 on all Tactics checks made by vessels or personnel under the command of the leader using the suite, including the *Harrier's* own crew. The cost is MCr7.5.



## Diplomatic Suite

A conference area equivalent to an extremely luxurious version of the briefing room (giving DM+1 on Diplomacy checks) and an associated common area can be fitted for a total of MCr0.7.



## Emergency Fuel Store

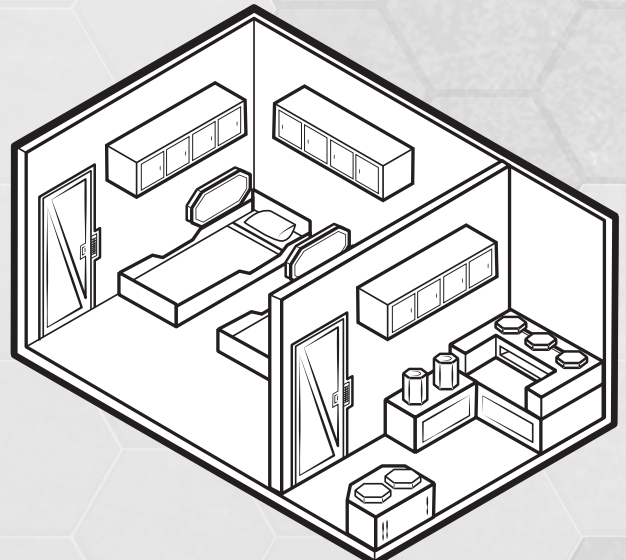
Tankage for 10 tons of fuel can be carried. This is insufficient for a jump, but will significantly extend the ship's powerplant endurance, allowing it to remain on station for an extended period. There is no cost to use the pod for fuel tankage.

## Marine Barracks

An extremely cramped accommodation area for four additional marines, plus an armoury for their equipment, can be set up in the pod for MCr0.8 plus life support costs of Cr500 per occupant per week.

## Medlab

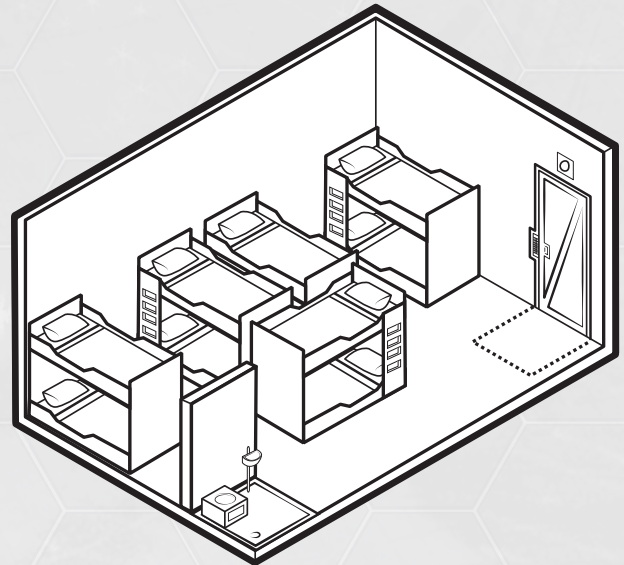
A large medical bay with additional bed space plus laboratory area can be fitted, creating an area that can be used to house up to ten casualties. If configured as a life sciences laboratory, this setup allows the *Harrier* to act as a mobile disease treatment facility or deal with the effects of chemical or biological weapons, or radiation poisoning. Whilst more useful to a support ship than a raider, this configuration might be useful in terms of winning friends. The laboratory could be reconfigured for other purposes such as analysing artefacts or discovering the origins of a starship component. The cost comes to MCr4.





## Prisoner Holding Facility

Travellers who expect to take a lot of prisoners, and prefer to keep captives awake rather than stuffing them in low berths, can convert the pod to a holding area capable of housing ten prisoners in relative comfort (compared to just locking them in the missile magazine). The facility costs MCr0.75 to build. Each prisoner costs Cr300 in life support per week.



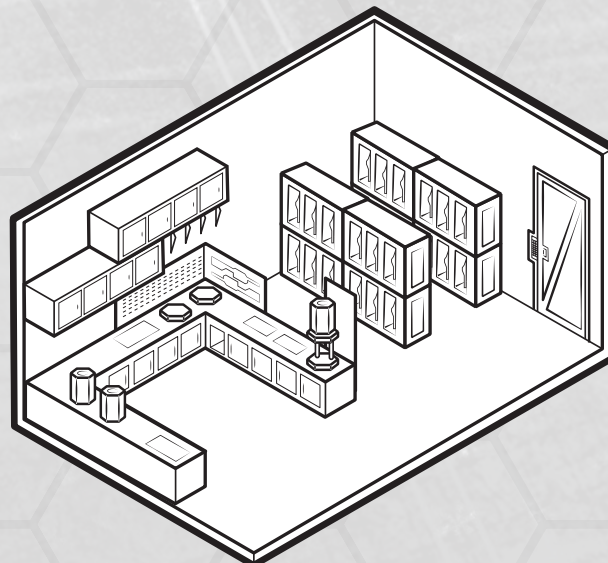
## VIP Accommodation

The mission pod can be set up to house one important passenger (or one Traveller with a massive ego), creating the equivalent of a High Stateroom and associated personal recreation space. This costs MCr1, plus 1 Cosmetic RU if the décor is to match the rest of the ship.



## Weaponry Workshop

The addition of a dedicated armoury enables the *Harrier* to properly maintain boarding suits and advanced weapons, or service large numbers of less complex devices and weapons. This could be useful when supporting and supplying an insurrection or friendly faction the Travellers hope to align with Drinax. The workshop facility could be used to fabricate basic weapons (e.g. making crude but effective submachineguns by stamping their components out of sheet metal), explosives and ammunition. Modifications to weapons can also be made, including experimental designs. The cost for this setup is MCr0.5.



Applications of the mission pod are almost infinite. The ship could be configured to carry a member of the Drinaxian elite to some important meeting, then later it might be churning out improvised grenades and simple assault rifles for a pro-Drinaxian militia set up by that dignitary. The final victory won by the militia might be coordinated from the *Harrier's* command suite, after which a diplomatic suite might be set up to accept the enemy's surrender. Alternatively, inventive Travellers might come up with all manner of other applications, some of which might be quite unexpected to the referee. The addition of a mission pod enables the *Harrier* to be quickly optimised for almost any mission, and of course it can be removed to regain the lost cargo space.



# C H A P T E R - S I X

# EQUIPMENT

Any piece of standard equipment can be encountered aboard a *Harrier*-class raider, often plundered or salvaged. Attempts have been made to keep the ship fully stocked with matching items, but this is difficult at the best of times. A few distinctively Sindalian items – or more commonly, reproduced versions of them made on Drinax or another successor state – may appear in the ship's locker.

**DX/64823**

## SINDALIAN OFFICER'S SWORD

When every Sindalian ship was commissioned, a small number of ceremonial (but functional) swords were also produced out of the same materials as the hull. One of these weapons was to forever remain aboard the ship. Others were presented to those considered worthy – the ship's first captain, her patron or admiral, and particularly influential individuals associated with her. By tradition, these swords represent the spirit and honour of the ship, and must be kept sharp and ready for instant use. They symbolise integrity, fidelity and lethality, and surrendering the ship's sword is a grave dishonour.

Weapons of a similar design were used by Sindalian officers. Many had an area for engraving the name of ships served aboard, but the finest instead had inscribed jewels fitted. It was possible to tell what classes of ship an officer had served aboard, and in what capacity, by the ostentation of his sword. A few of these weapons still survive, along with a far larger number of copies.

The standard pattern for a Sindalian officer's sword is a straight blade, flat but slightly oval in cross-section, with little taper towards the point. The result is a slightly



Weapon	TL	Range	Damage	Kg	Cost	Traits
Officer's Sword	15	Melee	2D+2	1	Cr300	-

blade-heavy feel, much like a schlager. As a result the weapon can cut reasonably well and deliver a lethal thrust. The blade is not as quick on the parry as some light swords, but the tradeoff is an improved cutting action. Hand protection takes the form of a knuckle bow and a traditional small 'butterfly' handguard, making the weapon easy to carry and reducing wear on the officer's uniform.

The listed cost is for a replica or weapon of dubious authenticity. An original Sindalian or Drinaxian weapon with verifiable provenance might cost a hundred times more on the collector's market.



**DX/70820****SINDALIAN OFFICER'S REVOLVER**

The Sindalian penchant for ostentation extended, not surprisingly, to officers' sidearms. The standard weapon for officers, inevitably referred to as a 'service revolver', was a complex but effective multi-barrel handgun. Originals still exist today, and there have been numerous replicas made. The main component is a long-barrelled revolver chambered for 8mm ammunition, with space for eight rounds in the chamber.

Two kinds of ammunition are available, colour-coded by type. Red cartridge cases represent 'hot' rounds with a very high muzzle velocity and modest anti-armour capability, but with correspondingly high recoil. Blue cases indicate 'cool' rounds with a much lower velocity, which perform poorly against armour and lack stopping power but generate virtually no effective recoil. This is useful in low-gravity combat or when overpenetration is a danger.

In addition, the weapon has a second, short barrel under the main one. A small lever on the side of the weapon realigns the firing mechanism, permitting a single shot



from this barrel. Reloading it is a complex evolution taking a couple of minutes and, in addition, the complex internal mechanism is prone to failure if not well maintained. The lower barrel contains a 'mutiny cartridge', consisting of what amounts to a miniature fragmentation grenade. The bursting charge is initiated almost immediately, causing the cartridge to fling a spray of small, sharp metal fragments in a cone from the muzzle. Effective range is very short but knockdown power is considerable for a handgun and the rather random effects of the cartridge can be a useful deterrent.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Officer's Revolver	15	-	-	1	Cr250	8 + 1	-	-
- Red Cartridge		10	3D-2				Cr10	AP 3
- Blue Cartridge		10	3D-4				Cr10	Zero-G
- Mutiny Cartridge		5	3D+3				Cr10	Blast 2

**DX/88830****BREACHING GUN**

The Sindalian Empire and its successors fought a lot of wars in space, or in installations attacked from space. The development of a weapon designed to breach light bulkheads and punch through an armoured vacc suit was an inevitability. Various designs were fielded, but the most common was a 15mm low-velocity microgrenade launcher fed from a revolving drum magazine.

The drum is not detachable. Instead, it is loaded through a gate and can be manually wound to allow-semi-automatic fire even when power is not available. A small battery powers the drum under normal circumstances, allowing fully automatic fire.

Grenades are coated with an impact-activated adhesive, which will stick to most objects, and contain a small shaped charge explosive. A skilled gunner can stitch a cross pattern into a bulkhead then duck into cover before



detonation sends a spray of fragments in all directions. Projectiles can also be used to breach an armoured suit or disable a robot.

The breaching gun is heavy and its drum noisy when activated, but the main drawback of this weapon is the long reloading time, up to a minute. Breach-gunners are normally issued a personal combat weapon for self-defence, though some alternative ammunition types have been trialled including an anti-personnel flechette round.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Breaching Gun	15	25	4D	4	Cr2400	20	Cr100	AP 6, Auto 5, Blast 1



DX/88830

## BOARDING GUN

The standard post-Sindalian combat system is a short-barrelled assault weapon somewhere between submachinegun and assault rifle. Chambered for a short 7.5mm round, the boarding gun is optimised for close range combat and highly inaccurate at range. Its high rate of fire makes up for this at close range.

Ammunition is carried in a 45-round helical-feed cassette rather than a standard magazine, and lies along the top of the barrel. This, combined with a secondary weapon system under the barrel, makes the boarding gun muzzle-heavy. Its standard ammunition does not penetrate armour well at all, but can deliver significant firepower in a short time, clearing an area of defenders in a single sweep.

For harder targets, the under-barrel weapon launches a rocket-propelled penetrator dart with an explosive warhead that can be set for impact, delayed or command



detonation. It can also function as a shaped charge for armour penetration or a blast weapon to stun defenders. The projectile is guided by a laser pointer on the muzzle of the boarding gun, enabling a skilled user to curve it around an obstacle by sweeping the aim point. This is extremely tricky and normally only done in demonstrations; few gunners have ever pulled it off in combat.

Weapon	TL	Range	Damage	Kg	Cost	Magazine	Magazine Cost	Traits
Boarding Gun	15	50	3D 6D (dart)	4	Cr2100	45 + 1	Cr60	Auto 5, Bulky Blast 2 (dart)



