



VERSION 9.1.02

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INTRODUCTION

This is about space battles in the far future. It is closely linked with the low level dogfighting game, *Cruel Void*, and the background and concepts developed in the *Starship Marine* rules, known collectively as **The Universe**.

The idea of the game is to look at the outcomes of big fleet actions in The Universe either in the context of a campaign or as one-off battles.

There is some more information on The Universe web pages, as well as battle reports on the course of the Exterminator! War and Starship Marine background.
Point your browser at:

<http://www.pastpers.co.uk/universe>

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GAME LAYOUT

The game is built around teams of players, most of whom are single ship's captains.

The fleet has a hierarchy, with admirals, squadron commanders etc. This is scenario specific, in that the exact rank structure will be determined for each game.

Players move their own models on the hex grid, under the supervision of Game Control, who has the final say in rule interpretation and operations.

In some scenarios, certain players may be separated from the grid to represent non-combatants or high command roles, and they will communicate with the other ships by intercom or the equivalent.

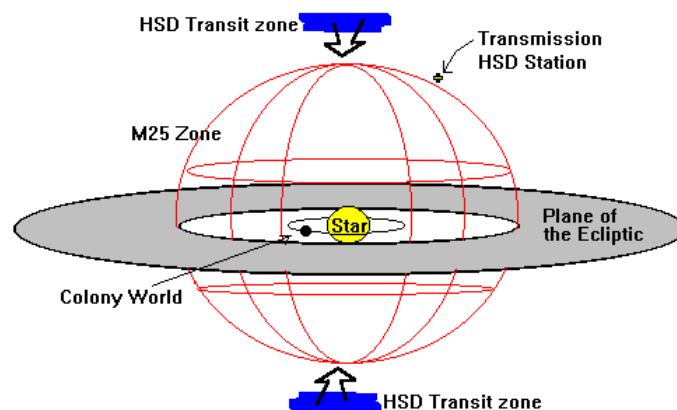
The Technology

The key elements of the technological background are :

1. Faster Than Light Drive (FTL). Without going into a boring technical treatise, the points to remember are:
 - FTL only operates safely beyond a certain distance from a star (or planet), known as the M^{25} **Limit**
 - It moves the ship through Hyperspace and interception, normal communication or combat are impossible while in Hyperspace.
 - There is an upper limit to the size of the vehicle that can be sent though Hyperspace. This is a immutable physical law.
 - FTL drives are VERY EXPENSIVE. (especially if you buy retail)
2. When moving in normal space ships use Reaction Thrusters. They are therefore limited because....
3. Artificial gravity and inertial dampening technology does not exist. This means that ship crews would suffer the averse effects of massive accelerations of multiple Gravities (or 'g').
4. Force shields, Deflector Screens, Transporter Beams, Tractor Beams and Invisible Cloaking Stealth Fields etc. do not exist in this universe.

Hyperspace speeds and communications

Just so that you understand some of the wider background - current human technology allows ships in hyperspace to move at a fixed 1 parsec per day. Communications are via a modulated 'hyperspace packet', projected through hyperspace using a HS field generator (or ship's drive). Communications packets travel at 2 parsecs per day. They must be generated and received by a working



Hyperspace Field Generator (the basis of the Hyperspace Drive). Given the limits of where such fields can be created, interstellar communication must be conducted via starships or orbital transmission stations located outside the M^{25} Limit.

Hyperspace fields - size limits

The maximum size of a hyperspace field is defined by the mathematics and h-space physics. This means that the largest field defines the largest ship type. The physically largest interstellar ships are Battleships, Carriers and Class 5000 Merchants, and these are roughly spherical to maximise the use of their field size. The field size is roughly 100 metres across.

For ease of production and standardisation, interplanetary ships built for system defence rarely exceed these sizes also - although in principle they could be of any size.

Geography of HS travel

The HS limit of the M^{25} boundary poses some problems in terms of transiting the distance from the M^{25} to the planetary or colony station, several AU sunward. The exit velocity is sometimes several million km per hour, and therefore there is a tendency to make the entry and exit points of the system at or near either the 'north' or 'south' poles of the system, relative to the plane of the ecliptic (where most of the spare matter in the system tends to be). This is to reduce the risk of lethal collision with a small rock. Obviously the risk is very very small, but ships do still vanish without trace from time to time.

When Do Battles Take place

The very high transit speeds and long periods of acceleration make battles uncommon out near the M^{25} limit. If fleets can match velocities then combat can occur. In general, however, battles are fought near colony worlds or orbital stations, and therefore fleets tend to be moving at orbital speeds - actually quite slowly in game terms. Since all the manoeuvring is relativistic the absolute speed of the various ships isn't important, it is the relative acceleration that counts.

SEQUENCE OF ACTION

Write Orders - which **must** include;

- Damage control intentions
- Movement orders
- Chaff or flare launch and position orders
- Long range missile orders (i.e. designated target)

Power Allocation

Reveal orders / power allocation (and correct errors/impossibilities)

Place missile, pacifier, chaff or flare counters.

Update stock records (noting missile, flare or chaff use).

Move all large ships in accordance with orders

Move all pacifiers

Move all long range missiles

Adjudicate fire effects and damage (this is simultaneous)

Calculate Morale Effects

Movement

- Movement is on a 2D hexagon grid. (This is because a 3D hexagon grid would be just too hard to manage).
- Manoeuvring requires power use.
- Movement is Newtonian - that is it costs no power to continue moving at a constant velocity in a straight line, but it *does* cost power to accelerate, decelerate, change direction or change facing.

Each ship has two key characteristics that affect how it manoeuvres. The values for these are given in the ship statistics section later.

1. The power necessary for it to accelerate or decelerate by 1 hex per turn - it's **Δv Number**.
2. The maximum capability of the craft to manoeuvre - its **Δv Limit**. For ease of calculation, this is expressed as the maximum power that can be put in thrusting or manoeuvring in any turn.

The power costs of movement and other actions vary with the type of ship are as follows:

Action	Power use
Change direction of movement by 60 degrees (i.e. one side of a hex).	Ship's Δv Number of power times the number of hexes of current velocity Example: if a heavy cruiser (with a Δv Number of 5) is going at 3 hexes, it would therefore take $5 \times 3 = 15$ power to turn 60 degrees (and continue to move at 3 hexes in the new direction).
Accelerate or decelerate by 1 hex velocity.	Ship's Δv Number of power per hex accelerated/decelerated
Rotate up to 180°.	The ship's Δv Number of power

The ship may have a facing that is independent of the direction of travel, and the current direction of travel is marked by an arrow on the model's base (which may be oriented differently to the facing of the ship model and its weapons).

A ship does not have to reorient its main thrusters to manoeuvre, accelerate or decelerate.

G-Force

There are limits placed on acceleration/deceleration by the ability of the crew and the frame of the starship to withstand the G-forces of high velocity manoeuvring.

Fortunately none of the ships in these rules can accelerate fast enough for this to become a big problem in a battle.

Because of the fairly low manoeuvring ability of most ships, they tend to lumber about. So we can ignore the possibility that crews will black out or red out under G-force.

Order Writing

Movement orders must be written in secret for each move because all movement is simultaneous.

When everyone has written, all players must put their written order face up on the battle grid table *for all to see*, and they may not change it and are committed to that order, unless actually impossible.

In the case of illegal or impossible orders, Game Control will correct it to the nearest legal order.

Standard Notation is as follows:

Notation	Description
1, 2, 3 etc	Number of hexes moved on current heading that turn
rL60 [or ↶60]	rotate left 60 degrees
rL120 [or ↶120]	rotate left 120 degrees
rL180 [or ↶180]	rotate left 180 degrees
rR60 etc [or ↷60]	rotate right 60 degrees etc.
P	turn to port 60 degrees
S	turn to starboard 60 degrees
Flare	launch flares
Chaff	launch chaff
Ram	Intention to ram enemy

On the sample order sheet, it is helpful to note down the increase or decrease of velocity separately in the Δv column.

Examples of Order Writing

[to be added]

Important note: A change of direction of motion does not alter the facing relative to that direction of motion. So if your ship is facing 60 degrees off the direction of travel before you make a turn, it will still be 60 degrees off after you turn - remember to re-orient.

Collisions

If several craft end up in the same hex at the end of their movement, then roll 1d6 per craft and if the scores are the same there has been a collision between those craft.

In the event of a collision, each craft takes one damage roll/card per hex of resultant velocity.

So - if two ships moving at 2 make a head on collision, they each take 4 damage cards.

Or - if they are moving in the same direction at the same velocity they take no damage rolls.

If one or more of these ships issues order to RAM (see boarding actions below), then they may ± 1 to their die roll.

Entering Hyperspace

Ships cannot activate their HSD while within the M^{25} limit of a gravity well. The location of the M^{25} limit will be scenario specific. The power needed to activate the HSD varies with ship class.

Class	Power to Activate HSD
Battleship, Logistics Ship, Support Carrier	6
Carrier	4
Heavy Cruiser, Light Cruiser, Assault Landing Ship, Assault Carrier, Transport, Hospital Ship, Escort Carrier, Class 5000 Merchant	3
Destroyer, Class 2000-4000 Merchants	2
Class 1000 Merchant	1

Weapons

Weapon technology has not altered vastly in the last few centuries, the following are the main weapon systems:

Directed Energy Weapons (DEW): Basically the two types are the Plasma Weapon and the High Energy Laser. These are very powerful weapons but fairly inflexible to use.

In most smaller ships DEW fire along a single line of hexes, directly forward on the weapon's current facing.

Only the largest ships have movable DEW mountings, and then usually only on a limited arc.

Cannon: These are very rapid fire projectile launchers that deliver vast numbers of very fast explosive projectiles into a small area. Their effective range is shorter than DEW, but they are easier to direct than DEW and can be used to cover a wider area within close range. There are two classes of Cannon.

Missiles: These are useful because they are relatively cheap to produce and maintain (unlike DEW) and quite flexible as to use and warhead etc. The main type on big ships is the radar-guided *Heavy Missile* and warheads can be anything from the more common fragmentation-explosive through pulse-radiation all the way up to nuclear-explosive (although this last has some rather severe consequences – see later).

There is a secondary type of radiation-seeker *Light Missile* that is generally carried on pacifiers and has a lesser range and capability.

Point Defences: They include Chaff and Flares. Electronic Counter measures are used, but are assumed part of the normal combat environment and not separately represented in the game.

[Game note: You will observe that that old standard science fiction device the 'force shield' or 'deflector shield' is missing from the list. This is deliberate.]

Weapon Effects

Directed Energy Weapons (DEW)

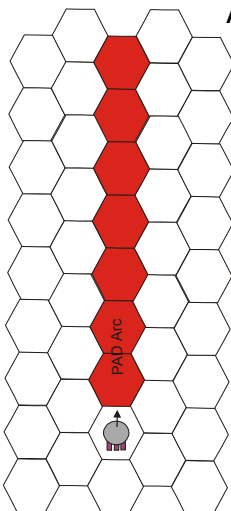
High Energy Laser Light (HELL)
Plasmatic Annihilation Device (PAD)

Have a specific line of fire. In smaller ships they tend to be fixed to fire down the main axis of the vessel. Larger vessels have limited traverse for PAD and even turrets for HELL. Details appear on the ship status panel (see later).
PAD or HELL fixed mount - has no arc, just a single line of hexes.
PAD or HELL sponson-mount - has an arc of 60°.
HELL only full turret-mount - has an arc of 180°.

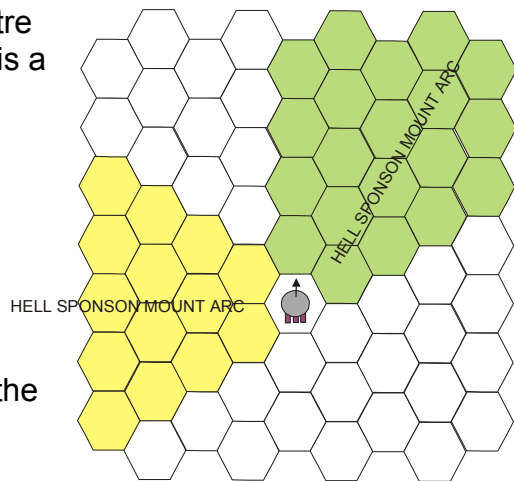
All have effect along the line of hexes from the current weapon facing.

If diagonal then draw a straight line from centre hex to centre target hex - each hex bisected is a target hex. There are typical ship-specific weapons grids at Annex B.

A hit is automatic on THE FIRST VESSEL ALONG THAT LINE.

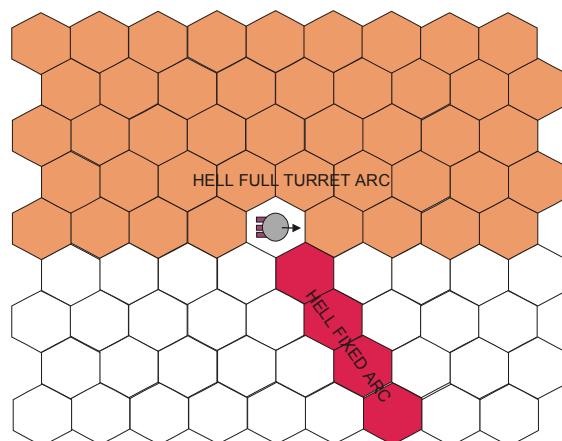


The target vessel takes the effect. If there are more than one vessel in the hex, dice for which target takes the hit.



Exception: Pacifiers do not block the effect, they take the damage as well as the subsequent target.

Damage is dependent on range and weapon type. It is expressed in terms of damage cards:



Range up to:	2	4	5	6	Over 6
HELL	1	1	1	1	-
PAD	3	2	2	2	1

Because of their greater size and complexity PAD are not fitted to Pacifiers, and are generally only found on the largest vessels.

Multi-Cannon

This has a range of 1 hex, but can engage any target in a 120° arc of the weapon.

Roll 1d6: Score 2 or better to hit.

-1 if target in chaff

-2 if the target is an HRGM

Damage inflicted is 1 damage card per 2 Multi-Cannons

Heavy Cannon

This has a range of 2 hexes, but can engage any target in a 120° arc of the ship.

Roll 1d6: Score 2 or better to hit.

-1 if target in chaff

Damage inflicted is 1 damage card per Heavy Cannon.

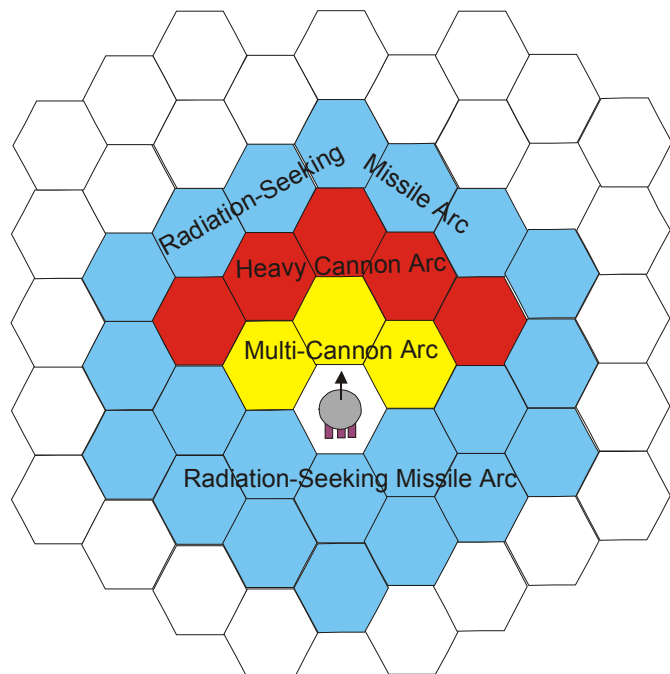
Light Radiation-Seeker Missile (Light Missile)

This can be fired on any target in range.

It has a range of 3 hexes and homes in on the nearest and/or 'loudest' radiation emitter.

Seek Priorities are (in descending order):

- Nearer rather than further
- Main engine or manoeuvre burns (accelerating/decelerating/turning) - hottest first (i.e. the burn using the most fuel)
- Flares
- Weapon firing
- Silent running (no burns, no weapons).



Roll 1d6, score 2+ to hit.

+1 if target uses power to manoeuvre or accelerate/decelerate that turn.

If a miss then take next priority target within range. If equal priorities then roll a die for which gets hit.

Damage inflicted if it hits is 1 damage card per missile for fragmentation-explosive warhead

Heavy Radar-Guided Missile (Heavy Missile)

An heavy Missile moves at 6 hexes per turn, for three complete turns.

The target ship must be noted in orders at the point of launch and cannot be altered in flight.

It can manoeuvre to hit its target, but must make one hex forward move between each 60° turn.

Movement orders do not have to be written for Heavy Missiles, their counters are moved after ship movement.

These require a line of sight from the launcher to the target ship throughout the period in flight.

HITTING: When the missile reaches the same hex as the target roll 1d6, score 2+ to hit. -1 on the die if the missile passes through chaff on it's final approach (multiple chaff has no additional effect).

If the missile misses, and it still has some movement left, it may be manoeuvred round for another attempt to hit.

If there is more than one ship in the same hex then roll a die for which one gets hit.

Damage inflicted if it hits is 2 damage cards per missile for fragmentation-explosive warhead

A heavy Missile can be shot at defensively by *multi-cannon only* as if it were another ship. -2 on firing die rolls to reflect the agility of the missile.

Each missile launcher has 6 missiles. When it runs out it can only be reloaded from ship's stores by hand by the crew. This is not normally done in combat and takes a long time. Typically a ship will have one complete reload in ship's stores.

Summary of Weapon Power Costs

The following table summarises the power costs of each weapon system. This is per weapon unless otherwise stated

Weapon	Power Requirement	Weapon	Power Requirement
Fixed PAD	3	Sponson Heavy Cannon	1
Sponson PAD	4	Turret Heavy Cannon	2
Fixed HELL	2	Sponson Multi Cannon	1
Sponson HELL	2	Turret Multi Cannon	2
Turret HELL	3	Launch Pacifier	1
Chaff	1	Launch Missile (any type)	1
Flare	1	Activate AIMS	3

Point Defences

Flares are launched at the end of movement.

They are represented by a counter on the map. They can be launched in any direction.

They have the launching vessel's velocity ± 1 (pilot's choice at the point of launch).

They last for one complete turn (i.e. burning out at the end of the turn following the one they were launched) and have the effect of confusing Radiation Seeking missiles by providing an alternative priority target.

A flare pod normally carries 24 flares. When it runs out it can only be reloaded from ship's stores by hand by the crew. This is not normally done in combat and takes a long time. Typically a ship will have one complete reload in ship's stores.

Chaff is launched at the end of movement, and before firing is calculated.

They are represented by a counter on the map. They can be launched in any direction.

They have the launching vessel's velocity ± 1 (pilot's choice at the point of launch).

These last for one turn (dispersing at the end of the turn following the one on which they were launched).

They have the following effects:

- a. DEW dispersal. They reduce the *total* effect of incoming DEW fire by one damage card (by dispersing the energy a bit). In doing so the chaff counter is destroyed.

- b. They also reduce the total outgoing DEW effect by one damage card (and are thereby destroyed).
- c. Confusing fire-control radar. -1 on incoming Cannon fire die rolls, if target behind chaff.

A Chaff pod normally carries 24 chaff. When it runs out it can only be reloaded from ship's stores by hand by the crew. This is not normally done in combat and takes a long time. Typically a ship will have one complete reload in ship's stores.

Anti-Incoming Missile System (AIMS)

This is an integrated system of radar and a number of small turrets with an array of very short range radar guided missiles, designed specifically to shoot down incoming missiles of all types coming from any direction. It is a complex and expensive system.

It only has an effect in the final approach stage, after defensive fire by multi-cannon, and only fires in the same hex as the firing ship.

AIMS have no effect on ships or pacifiers, even in the same hex.

Roll 1d6 per incoming missile, score 2+ to shoot it down.

Like other systems, AIMS has limited missile loads - typically 24 shots per system.

Armour

All larger military ships (Light Cruiser and above) have armour - reinforced areas of hull designed to take damage and prevent penetration to vital systems.

Armour provides no protection for weapons and other systems that are mounted externally.

It is represented by extra armour boxes, that are used up first. While there are some armour boxes remaining, any hit that causes a hull value loss is taken on the armour, and the associated system damage ignored.

Once the armour has been used up, internal system hits are possible.

Nuclear Weapons

When a nuclear weapon goes off, if the combat is taking place within a million miles of a world with a magnetic field (such as Earth) then the Electro-Magnetic Pulse (EMP) affects the entire playing area and lasts for 10 moves. In all other cases, a thermo-mechanical pulse is created (TMP) which lasts for 5 moves. The effects of EMP and TMP are similar and are as follows:

- Loss of Communications : Players may not communicate with each other for duration of the effect.
- Loss of Control : ships are unable to alter their course or velocity.
- No radar guidance : heavy missiles and AIMS cannot function.
- Directed energy weapons cannot function.
- -1 on cannon
- -2 on radiation seeking missiles

Immediate Direct Energy Effects:

2 hex radius = total destruction of everything

10 hex radius = 10 damage cards

All over 10 hexes = 1 damage card

Damage

Damage mentioned above refers to Damage Cards.

Each ship has a pack of damage cards.

There are a large number of these and the target takes that number of cards and applies the damage listed on them.

The intention is to have a pack of damage cards for each ship type, to give a feel for the typical array of damage that a ship can receive, annex A has some tables that can be used either as a replacement for damage cards, or merely for reference.

Explanation of Damage Results

Damage Result	Impact on Ship	Repair Type
PAD 'x' out of action	That weapon cannot fire. If already hit, take a hull damage instead.	External
HELL Pod 'x' out of action		External
Heavy Cannon Pod 'x' out of action		External
Multi-Cannon Pod 'x' out of action		External
Missile battery 'x' out of action		External
Chaff Pod out of action	That system cannot be used, if already hit, take a hull damage instead	External
Flare Pod out of action		External
Main Targeting radar out of action	Deduct 1 from any weapon-related die roll. Roll for each DEW engaging, score 3+ to hit.	Internal
Sickbay Hit	Reduces effective crew numbers (see 'Boarding Actions')	Internal
Crew quarters hit	No effect on battle, although important in a campaign context.	Internal
Marine quarters hit	No effect on battle, although important in a campaign context.	Internal
Mess deck hit	No effect on battle, although important in a campaign context.	Internal
Cargo pods hit	No effect on battle, although important in a campaign context.	External
Kitchens hit	No effect on battle, although important in a campaign context.	Internal
Captain's quarters hit	No effect on battle, although important in a campaign context.	Internal
Maint workshop hit	Reduces ability to conduct long term repairs after the battle.	Internal
Damage control centre hit	Reduces effectiveness of damage control.	Internal
Shuttle bay hit	Shuttle refuelling and operations hampered. No shuttle launches permitted.	Internal
Power control hit	Power allocation affected. May only change power allocation to one system per turn.	Internal
Marine armoury hit	Reduces effective marine numbers (see 'Boarding Actions')	Internal

Damage Result	Impact on Ship	Repair Type
Bridge hit - roll for Captain	1d6 - score 1 or 2 for the captain to be hit. No new orders for one turn. No course changes until bridge repaired.	Internal
Power lines hit - reduce main power	Reduce Main power by one Block (see control panel)	Internal
Power lines hit - reduce aux power	Reduce Auxiliary power by one Block (see control panel)	Internal
Battery damage - all battery power drained	But it can be recharged again.	Internal
Fuel store damaged - lose reaction mass	This will have little effect in the short term, but may prevent long periods of acceleration.	External
Manoeuvre thrusters damaged	Reduce rotation manoeuvring by 60° (see control panel)	External
Main thrusters damaged	Reduce thrust by one Unit of Δv (see control panel)	External
Hyperpsace generator damaged	Cannot enter hyperspace.	Internal

Damage Control and Repair

All warships have dedicated damage control parties (DCP) that have the function of repairing damage during the battle.

This is hazardous but essential work.

DCP do not use power themselves BUT the system they are attempting to repair must have it's normal power allocated whilst the repair attempt is being carried out.

Damage is classified in one of three groups:

Internal: The DCP does not have to leave the ship to carry out repairs. This is the least hazardous type of repair.

Roll 1d6 and score the number of DCP working OR LESS on the die to effect a repair.

+1 to die roll if the Damage Control Centre is damaged.

External: The DCP has to crawl about on the hull to do this repair. This is highly dangerous. If the ship accelerates or decelerates the DCP may not work that turn (too busy holding on!).

Roll 1d10 and score the number of DCP working OR LESS on the die to effect a repair.

If the system under repair takes a hit during the repair, the DCP is wiped out as well.

+2 to die roll if the Damage Control Centre is damaged.

Irreparable: Hull and Armour damages come under this category - these require a naval repair yard to fix permanently, or many days to effect temporary repair (i.e. irreparable in the context of a battle).

Systems repaired by DCPs are only jury-rigged, and are therefore a lot less efficient. To reflect this, each time a system is repaired, it requires ONE MORE power point to operate it. For example a repaired PAD battery would require 5 power to fire. A HELL Battery repaired twice would require 4 power to fire.

The effects of jury rigging persist until the ship can be repaired or refitted at an appropriate place.

Carrier Operations

The most important ship type is the carrier.
This operates smaller single pilot warships called 'pacifiers'.
The pacifiers are highly manoeuvrable and pack quite an offensive punch.
They have limited endurance, however, and need to return to the carrier periodically to refuel and rearm.

Launching and Recovering Pacifiers.

A pacifier must be within 5 hexes velocity of the recovering carrier's velocity to be recovered. Otherwise it misses.

It takes one power to launch a pacifier.

It takes one power AND one complete turn to re-arm a pacifier.

So the sequence goes like this:

Turn 1 : Recover Pacifier by moving pacifier onto same hex as Carrier.

Turn 2 : If power available, re-arm pacifier.

Turn 3 : If power available, launch pacifier.

Fighting With Pacifiers

A pacifier does not require written orders. Pacifier counters are moved after all larger ship counters have been moved.

In the case of opposing pacifiers, brief orders may have to be written.

Movement is up to 8 hexes in a straight line - subtract one hex for every hex-side of direction changed.

It does not have power allocation, only consumable fuel.

For this reason it can only operate for 10 turns away from the carrier (except Patrol and Gunship pacifiers who can operate for 15 turns) at the end of which time it must be recovered, because it can no longer manoeuvre.

Annex C has a list of the approved pacifier types.

HELL weapons can only fire 5 times.

Multi-cannon can be assumed to have lots of ammo, so for all purposes never runs out.

Missile numbers indicates the number of shots available.

All missiles can be fired at once, or singly if required.

Damage to Pacifiers

All weapons inflict hits in the same way as on larger ships - but instead of damage cards.

If hit, roll 1d6

Score	Result	Hull Damage
1	Catastrophic Hit - pilot bales out	1
2-3	One weapon out of action	0
4	Thruster damage, may not accelerate or manoeuvre	0
5-6	Hull damage	1

If a system is hit that has been hit already, then take a hull hit.

A pacifier can take 4 Hull Hits before it is destroyed.

Pacifier Bunching

If there are more than 4 pacifiers in a hex, they become an easier target for cannon and missiles - +1 to any firing die rolls for every 4 pacifiers over the first 4.

Combat AutoPilot (CAP) Pacifiers

Some fleets operate robot pacifiers which can operate in a similar way to human pilots. No more than half of any pacifier force can be CAP Pacs.

These have limitations and advantages:

- Advantages - can make 2 extra turns without penalty. They are expendable.
- Limitations - Patrol and Stand-off Pacifiers cannot be CAP. On recovery they must be within 3 hexes of the carrier's velocity. There must be at least one human piloted pac in operation for CAP pacs to operate - otherwise they automatically recall to the launching craft..

Boarding Actions

The strong Marine contingents on board these warships are intended to board and capture the enemy once his main offensive weapons have been neutralised.

How to Board

Boarding can be done in two ways:

Ram and Board: The attacking ship arranges to collide with the target ship and match velocities. This places the attacking marines right on the hull of the target where ship to ship weapons cannot easily be brought to bear. It is, of course, risky, because the attacking ship is at point blank range and can become severely damaged in the ram.

This has the advantage of allowing the entire boarding force to be deployed without delay.

Grappling: DCP can be used to attempt to anchor the two ships together - make a successful external DCP roll to make one 'connection'. Ships can burn free, but it counts as one extra acceleration for each connection. Manoeuvre is possible with both ships connected - but to always combine the power per delta-v requirements of both ships (so it is unlikely that a destroyer could move a battleship in any meaningful timeframe).

Send Boarding Shuttles: Launching shuttles containing the ship's marines across the intervening gap. This is risky because the target ship's defences might still be active and the shuttles are quite vulnerable to ship to ship weapons.

There are several classes of shuttle - the figures below are the maximum numbers of factors that can be shipped every 3rd turn for targets up to 2 hexes away. This time is doubled if shuttle ops has been disabled, or the shuttle bay has been hit.

Type	Marine Combat Factor Capacity
Ship's Boat	2
Light Cargo	3
Medium Cargo	5
Heavy Cargo	8
Landing Craft	20

For targets more than 2 hexes away, the shuttles must be moved. They are moved after all ships, but before pacifiers and missiles. Shuttles can only move 2 hexes per turn, for up to 20 turns.

Prepare to Board

It takes one turn to prepare to board - assembling the marines, briefing etc.

The attach must say in advance how many marine factors are to be used for the first wave.

The marines preparing to board are more concentrated and vulnerable to incoming fire. A hit on the marine armoury, the shuttle bay, or marine assembly area will do 1d6 factors of casualties to the offensive boarding party.

Boarding actions can take a long time, perhaps as many as 20-30 game turns so it is not a tactic much seen in the mobile phase of a battle.

Working out the forces available:

For each 2 Hull value lost deduct 1 crew factor from the starting strength
For each 5 Hull value lost deduct 1 Marine factor from the starting strength
If marine armoury has been hit deduct 10% from the number of marine factors
If sick bay has been hit deduct 20% from the number of crew factors
Only Marines can be used in offensive boarding.

Combat Calculation:

Each 5 Marines = 1 Combat Factor
Each 10 Crewman = 1 Combat Factor

Tactical Factors

Defending ship Bridge Hit OR Defending ship Power Control hit: -1 from die roll below.

Due to the restricted area of the combat, no more than 5 combat factors can be counted at once:

Roll 1d6: Losses inflicted in the table.

Die Roll:	0-1	2	3	4	5	6
1 CF	0	0	0	0	1	1
2 CF	0	0	1	1	1	1
3 CF	1	1	1	1	1	2
4 CF	1	1	1	1	2	2
5 CF	1	1	1	2	2	3

Combat progresses rolling once each turn. Once all the marine factors have been killed, the ship must roll for morale each turn: 1d6 score 1 or 2 to surrender.

Once all the defending factors have been wiped out, the ship has been captured anyway.

Other Options: Unopposed marines on an enemy's hull can do system damage to external weapon systems. For each marine factor on the hull, wreck an external system of choice per turn. If there are any enemy opposing this, then no damage results.

MORALE

It may be that whilst the Captain (i.e. the player) might be a glassy-eyed fanatic happy to fight to the death, the crew and senior officers might advise strongly against it. In any disciplined Navy, the Captain could still over-ride this - but efficiency might suffer as a result. In extreme cases, the crew might 'insist' and replace the Captain.

When the following conditions apply or change, roll 1d6 for Ship Morale.

- Hyperspace drive damaged
- Ship boarded by enemy starship marines™
- Captain hit
- Hull value below half its starting value (not including armour)
- All offensive weapon systems disabled.
- Main thrusters inoperable

Subtract 1 for each of the above that apply at the time of the test.

Subtract 1 if ship morale is Failing already

Subtract 1 if outnumbered by manoeuvring enemy ships of own class or higher.

Results:

Score 2+	<p><i>"Fight on, and Damn the Heavy Missiles!"</i> Ship morale is fine, keep going. Failing ship morale recovers.</p>
Score -1 to 1	<p><i>"Er...we're not too sure about this, Sir"</i> Ship morale is Failing. Failing ship morale has the following effects: <ul style="list-style-type: none"> -1 on all firing die rolls +1 on all DCP repair rolls -1 on Marine combat die rolls -1 on subsequent Ship Morale rolls </p>
Score <-1	<p><i>"Sorry, Captain, but you're not fit to command, we're taking over".</i> Crew restrain the Captain and if possible, escape. If escape impossible, surrender. Game over, man.</p>

Ship Statistics

Ship Type	PAD		HELL			Hvy Cannon		Multi Cannon		Missile Launcher	C/F Launchers	Hull Damage (Armour)	ΔV Limit	ΔV Number	Main Power (blocks)	Aux. Power (blocks)	Battery Storage	Damage Control Teams	Marines (Factors)	Crew Size ² (factors)	Approx Tonnage
	Fixed	Sponson	Fixed	Sponson	Turret	Sponson	Turret	Sponson	Turret												
Battleship	-	4	-	-	8	8		8		8	6	50 (20)	16	8	25 (5)	8 (2)	33	6	105 (21)	250 (25)	80k
Carrier	1	1	-	-	2	6		4		2	6	20 (10)	12	6	10 (2)	6 (2)	24	5	105 (21)	200 (20)	60k
Heavy Cruiser	-	2	-	2	4	6		4		4	4	30 (15)	15	5	14 (3)	6 (2)	20	4	105 (21)	170 (17)	50k
Lt Cruiser	1	-	-	4	-	4		2		2	4	20 (10)	9	3	8 (2)	4 (2)	12	2	33 (7)	100 (10)	35k
Destroyer	-	-	-	4	-	2		4		-	4	15	8	2	5 (2)	4 (2)	9	1	33 (7)	60 (6)	20k
Assault Landing Ship	-	-	2	-	-	-		4		-	4	15 (5)	8	4	6 (2)	2 (1)	5	1	105 (21)	60 (6)	40k
Assault Carrier	-	-	2	-	-	-		4		-	4	15 (5)	8	4	6 (2)	2 (1)	5	1	33 (7)	85 (9)	45k
Transport	-	-	-	-	-	2		2		0	2	15	8	4	6 (2)	2 (1)	3	1	33 (7)	40 (4)	40k
Hospital Ship	-	-	-	-	-	-		-		-	2	15	8	4	4 (2)	4 (2)	8	2	8 (2)	75 (8)	40k
Logs Ship	-	-	-	-	-	2		2		0	2	15	12	6	8 (2)	4 (2)	2	0	9 (2)	20 (2)	75k
Support Carrier	-	-	-	-	-	2		2		-	2	15	12	6	8 (2)	4 (2)	8	1	9 (2)	40 (4)	75k

Ship Type	PAD		HELL			Hvy Cannon		Multi Cannon		Missile Launcher	C/F Launchers	Hull Damage (Armour)	ΔV Limit	ΔV Number	Main Power (blocks)	Aux. Power (blocks)	Battery Storage	Damage Control Teams	Marines (Factors)	Crew Size ² (factors)	Approx Tonnage
	Fixed	Sponson	Fixed	Sponson	Turret	Sponson	Turret	Sponson	Turret												
Escort Carrier	-	-	-	-	-	-	-	2	-	-	2	8	12	3	4 (2)	2 (1)	8	1	33 (7)	40 (4)	35k
Armed Merchant C1A	-	-	-	-	-	-	-	1	-	-	1	4	2	1	2 (1)	0	2	0	4 (1)	8 (1)	10k
Armed Merchant C2A	-	-	-	-	-	-	-	2	-	-	1	5	2	1	2 (1)	0	3	0	9 (2)	16 (2)	15k
Armed Merchant C3A	-	-	-	-	-	-	-	3	-	-	1	6	4	2	2 (1)	2 (1)	4	0	9 (2)	24 (2)	20k
Armed Merchant C4A	-	-	1	-	-	-	-	2	-	-	1	7	6	3	4(2)	2 (1)	5	1	9 (2)	32 (3)	30k
Armed Merchant C5A	-	-	1	-	-	-	-	2	0	-	1	8	6	3	4 (2)	2 (1)	6	1	33 (7)	40 (4)	35k
Pacifier	-	-	1	-	-	-	-	2	-	-	1	4	-	-	-	-	-	0	0 (0)	1 (0)	0.05 k

¹ Is also equal to the number of damage boxes.

² Excluding Marines

³ Figure in brackets is the power needed to rotate up to 180 degrees.

Pacifier load numbers: CV = 8-16; EVI = 4; SVI = 8; AVI = 3-5; BBI = 2; CAI = 1

Annex A-1

Sample Damage Card Chart : Battleships

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-02	0	PAD no 1 out of action	Ext
03-04	0	PAD no 2 out of action	Ext
05-06	0	PAD no 3 out of action	Ext
07-08	0	PAD no 4 out of action	Ext
09	0	HELL Pod no 1 out of action	Ext
10-11	0	HELL Pod no 2 out of action	Ext
12	0	HELL Pod no 3 out of action	Ext
13-14	0	HELL Pod no 4 out of action	Ext
15	0	HELL Pod no 5 out of action	Ext
16-17	0	HELL Pod no 6 out of action	Ext
18	0	HELL Pod no 7 out of action	Ext
19-20	0	HELL Pod no 8 out of action	Ext
21	0	Heavy Cannon Pod 1 out of action	Ext
23	0	Heavy Cannon Pod 2 out of action	Ext
24	0	Heavy Cannon Pod 3 out of action	Ext
25	0	Heavy Cannon Pod 4 out of action	Ext
26	0	Heavy Cannon Pod 5 out of action	Ext
27	0	Heavy Cannon Pod 6 out of action	Ext
28	0	Heavy Cannon Pod 7 out of action	Ext
29	0	Heavy Cannon Pod 8 out of action	Ext
30-31	0	Multi-Cannon Pod 1 out of action	Ext
32-33	0	Multi-Cannon Pod 2 out of action	Ext
34-35	0	Multi-Cannon Pod 3 out of action	Ext
36-37	0	Multi-Cannon Pod 4 out of action	Ext
38-39	0	Multi-Cannon Pod 5 out of action	Ext
40-41	0	Multi-Cannon Pod 6 out of action	Ext
42-43	0	Multi-Cannon Pod 7 out of action	Ext
44-45	0	Multi-Cannon Pod 8 out of action	Ext
46	0	Missile battery 1 out of action	Ext
47	0	Missile battery 2 out of action	Ext
48	0	Missile battery 3 out of action	Ext
49	0	Missile battery 4 out of action	Ext
50	0	Missile battery 5 out of action	Ext
51	0	Missile battery 6 out of action	Ext
52	0	Missile battery 7 out of action	Ext
53	0	Missile battery 8 out of action	Ext
54-55	0	Chaff Pod 1 out of action	Ext
56-57	0	Chaff Pod 2 out of action	Ext
58-59	0	Chaff Pod 3 out of action	Ext
60-61	0	Flare Pod 1 out of action	Ext
62-63	0	Flare pod 2 out of action	Ext
64-65	0	Flare pod 3 out of action	Ext
66-67	0	Main Targeting radar out of action	Int
68-69	1	Sickbay Hit	Int
70-71	1	Crew quarters hit	Int
72-73	1	Marine quarters hit	Int
74-75	1	Mess deck hit	Int
76-77	1	Cargo pods hit	Ext
78-79	1	Kitchens hit	Int
80-81	1	Captain's quarters hit	Int
82-83	1	Maint workshop hit	Int
84	1	Damage control centre hit	Int
85	1	Shuttle bay hit	Int
86	1	Power control hit	Int
87	1	Marine armoury hit	Int
88	1	Bridge hit - roll for Captain	Int
89	1	Power lines hit - reduce main power by one block	Int
90	1	Power lines hit - reduce aux power by one block	Int
91	1	Battery damage - all battery power drained	Int
92	1	Fuel store damaged - lose reaction mass	Ext
93-96	1	Manoeuvre thrusters damaged - lose one box	Ext
97-99	1	Main thrusters damaged - lose one box	Ext
00	1	Hyperspace generator damaged	Int

Annex A-2

Sample Damage Card Chart : Heavy Cruiser

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-04	0	PAD no 1 out of action	Ext
05-08	0	PAD no 2 out of action	Ext
09-10	0	HELL Pod no 1 out of action	Ext
11-12	0	HELL Pod no 2 out of action	Ext
13-14	0	HELL Pod no 3 out of action	Ext
15-16	0	HELL Pod no 4 out of action	Ext
17-18	0	HELL Pod no 5 out of action	Ext
19-20	0	HELL Pod no 6 out of action	Ext
21-22	0	Heavy Cannon Pod 1 out of action	Ext
23-24	0	Heavy Cannon Pod 2 out of action	Ext
25-26	0	Heavy Cannon Pod 3 out of action	Ext
27-28	0	Heavy Cannon Pod 4 out of action	Ext
29-30	0	Heavy Cannon Pod 5 out of action	Ext
31-32	0	Heavy Cannon Pod 6 out of action	Ext
33-34	0	Multi-Cannon Pod 1 out of action	Ext
35-36	0	Multi-Cannon Pod 2 out of action	Ext
37-38	0	Multi-Cannon Pod 3 out of action	Ext
39-40	0	Multi-Cannon Pod 4 out of action	Ext
40-41	0	Missile battery 1 out of action	Ext
42-43	0	Missile battery 2 out of action	Ext
44-45	0	Missile battery 3 out of action	Ext
46-47	0	Missile battery 4 out of action	Ext
48-49	0	Chaff Pod 1 out of action	Ext
50-51	0	Chaff Pod 2 out of action	Ext
52-53	0	Flare Pod 1 out of action	Ext
54-55	0	Flare pod 2 out of action	Ext
56	0	Main Targeting radar out of action	Int
57	1	Sickbay Hit	Int
58-59	1	Crew quarters hit	Int
60	1	Marine quarters hit	Int
61	1	Mess deck hit	Int
62	1	Cargo pods hit	Ext
63	1	Kitchens hit	Int
64	1	Captain's quarters hit	Int
65	1	Maint workshop hit	Int
66	1	Damage control centre hit	Int
67-68	1	Shuttle bay hit	Int
69	1	Power control hit	Int
70-71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power by one block	Int
74	1	Power lines hit - reduce aux power by one block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	No extra effect	Irr
00	1	Hyperspace generator damaged	Int

Annex A-3

Sample Damage Card Chart : Light Cruiser

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-08	0	PAD no 1 out of action	Ext
09-11	0	HELL Pod no 1 out of action	Ext
12-14	0	HELL Pod no 2 out of action	Ext
15-17	0	HELL Pod no 3 out of action	Ext
18-20	0	HELL Pod no 4 out of action	Ext
21-22	0	Heavy Cannon Pod 1 out of action	Ext
23-24	0	Heavy Cannon Pod 2 out of action	Ext
25-26	0	Heavy Cannon Pod 3 out of action	Ext
27-28	0	Heavy Cannon Pod 4 out of action	Ext
29-31	0	Multi-Cannon Pod 1 out of action	Ext
32-34	0	Multi-Cannon Pod 1 out of action	Ext
35-37	0	Missile battery 1 out of action	Ext
38-41	0	Missile battery 2 out of action	Ext
42-43	0	Chaff Pod 1 out of action	Ext
44-45	0	Chaff Pod 2 out of action	Ext
46-47	0	Flare Pod 1 out of action	Ext
48-49	0	Flare pod 2 out of action	Ext
50	0	Main Targeting radar out of action	Int
51	1	Sickbay Hit	Int
52-53	1	Crew quarters hit	Int
54-55	1	Marine quarters hit	Int
56-57	1	Mess deck hit	Int
58-59	1	Cargo pods hit	Ext
60-61	1	Kitchens hit	Int
62-63	1	Captain's quarters hit	Int
64-65	1	Maint workshop hit	Int
66	1	Damage control centre hit	Int
67-68	1	Shuttle bay hit	Int
69	1	Power control hit	Int
70-71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power by one block	Int
74	1	Power lines hit - reduce aux power by one block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	No extra effect	Irr
00	1	Hyperspace generator damaged	Int

Annex A-4

Sample Damage Card Chart : Destroyer

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-05	0	HELL Pod no 1 out of action	Ext
06-10	0	HELL Pod no 2 out of action	Ext
11-15	0	HELL Pod no 3 out of action	Ext
16-20	0	HELL Pod no 4 out of action	Ext
21-24	0	Heavy Cannon Pod 1 out of action	Ext
25-29	0	Heavy Cannon Pod 2 out of action	Ext
30-32	0	Multi-Cannon Pod 1 out of action	Ext
33-35	0	Multi-Cannon Pod 2 out of action	Ext
34-38	0	Multi-Cannon Pod 3 out of action	Ext
39-41	0	Multi-Cannon Pod 4 out of action	Ext
42-43	0	Chaff Pod 1 out of action	Ext
44-45	0	Chaff Pod 2 out of action	Ext
46-47	0	Flare Pod 1 out of action	Ext
48-49	0	Flare pod 2 out of action	Ext
50	0	Main Targeting radar out of action	Int
51	1	Sickbay Hit	Int
52-53	1	Crew quarters hit	Int
54-55	1	Marine quarters hit	Int
56-57	1	Mess deck hit	Int
58-59	1	Cargo pods hit	Ext
60-61	1	Kitchens hit	Int
62-63	1	Captain's quarters hit	Int
64-65	1	Maint workshop hit	Int
66	1	Damage control centre hit	Int
67-68	1	Shuttle bay hit	Int
69	1	Power control hit	Int
70-71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power by one block	Int
74	1	Power lines hit - reduce aux power by 1 block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	No extra effect	Irr
00	1	Hyperspace generator damaged	Int

Annex A-5

Sample Damage Card Chart : Armed Merchant C5A

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-20	0	HELL Pod out of action	Ext
21-28	0	Multi-Cannon Pod 1 out of action	Ext
29-35	0	Multi-Cannon Pod 2 out of action	Ext
36-41	1	No extra effect	Irr
42-49	0	Chaff Pod 1 out of action	Ext
50-51	0	Main Targeting radar out of action	Int
52-53	1	Crew quarters hit	Int
54-55	1	Marine quarters hit	Int
56-57	1	Mess deck hit	Int
58-59	1	Cargo pods hit	Ext
60-61	1	Kitchens hit	Int
62-63	1	Captain's quarters hit	Int
64-68	1	Damage control centre hit	Int
69-70	1	Power control hit	Int
71-72	1	Marine armoury hit	Int
73-75	1	Bridge hit - roll for Captain	Int
76-78	1	Power lines hit - reduce main power by one block	Int
79-81	1	Power lines hit - reduce aux power by one block	Int
82-84	1	Battery damage - all battery power drained	Int
84-87	1	Fuel store damaged - lose reaction mass	Ext
88-93	1	Manoeuvre thrusters damaged - lose one box	Ext
94-98	1	Main thrusters damaged - lose one box	Ext
99-00	1	Hyperspace generator damaged	Int

Annex A-6

Sample Damage Card Chart : Carrier

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01	0	PAD no 1 out of action	Ext
02	0	PAD no 1 out of action	Ext
03-04	0	HELL Pod no 1 out of action	Ext
05-06	0	HELL Pod no 2 out of action	Ext
07-08	0	Pacifier Bay 1 out of action	Int
09-10	0	Pacifier Bay 2 out of action	Int
11-12	0	Pacifier Bay 3 out of action	Int
13-14	0	Pacifier Bay 4 out of action	Int
15-16	0	Pacifier Bay 5 out of action	Int
17-18	0	Pacifier Bay 6 out of action	Int
19-20	0	Pacifier Bay 7 out of action	Int
21-22	0	Pacifier Bay 8 out of action	Int
23	0	Pacifier Warm Up facility out of action	Int
24-25	0	Heavy Cannon Pod 1 out of action	Ext
26-27	0	Heavy Cannon Pod 2 out of action	Ext
28-29	0	Heavy Cannon Pod 3 out of action	Ext
30-31	0	Heavy Cannon Pod 4 out of action	Ext
32-33	0	Heavy Cannon Pod 5 out of action	Ext
34-35	0	Heavy Cannon Pod 6 out of action	Ext
36-37	0	Multi-Cannon Pod 1 out of action	Ext
38-39	0	Multi-Cannon Pod 2 out of action	Ext
40-41	0	Multi-Cannon Pod 3 out of action	Ext
42-43	0	Multi-Cannon Pod 4 out of action	Ext
44-45	0	Missile battery 1 out of action	Ext
46-47	0	Missile battery 2 out of action	Ext
48	0	Chaff Pod 1 out of action	Ext
49	0	Chaff Pod 2 out of action	Ext
50	0	Chaff Pod 3 out of action	Ext
51	0	Flare Pod 1 out of action	Ext
52	0	Flare pod 2 out of action	Ext
53	0	Flare Pod 3 out of action	Ext
54	0	Main Targeting radar out of action	Int
55	1	Sickbay Hit	Int
56-57	1	Crew quarters hit	Int
58-59	1	Marine quarters hit	Int
60-61	1	Mess deck hit	Int
62-63	1	Cargo pods hit	Ext
64	1	Kitchens hit	Int
65	1	Captain's quarters hit	Int
66-67	1	Maint workshop hit	Int
68	1	Damage control centre hit	Int
69	1	Shuttle bay hit	Int
70	1	Power control hit	Int
71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power one block	Int
74	1	Power lines hit - reduce aux power by one block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	No extra effect	Irr
00	1	Hyperspace generator damaged	Int

Annex A-7

Sample Damage Card Chart : Assault Landing Ship

Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-10	0	HELL Pod no 1 out of action	Ext
11-20	0	HELL Pod no 2 out of action	Ext
21-25	0	Multi-Cannon Pod 1 out of action	Ext
26-30	0	Multi-Cannon Pod 2 out of action	Ext
31-35	0	Multi-Cannon Pod 3 out of action	Ext
36-41	0	Multi-Cannon Pod 4 out of action	Ext
42-43	0	Chaff Pod 1 out of action	Ext
44-45	0	Chaff Pod 2 out of action	Ext
46-47	0	Flare Pod 1 out of action	Ext
48-49	0	Flare pod 2 out of action	Ext
50	0	Main Targeting radar out of action	Int
51	1	Sickbay Hit	Int
52-53	1	Crew quarters hit	Int
54-55	1	Marine quarters hit	Int
56-57	1	Mess deck hit	Int
58-59	1	Cargo pods hit	Ext
60-61	1	Kitchens hit	Int
62-63	1	Captain's quarters hit	Int
64-65	1	Maint workshop hit	Int
66	1	Damage control centre hit	Int
67-68	1	Shuttle bay hit	Int
69	1	Power control hit	Int
70-71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power by one block	Int
74	1	Power lines hit - reduce aux power by 1 block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	No extra effect	Irr
00	1	Hyperspace generator damaged	Int

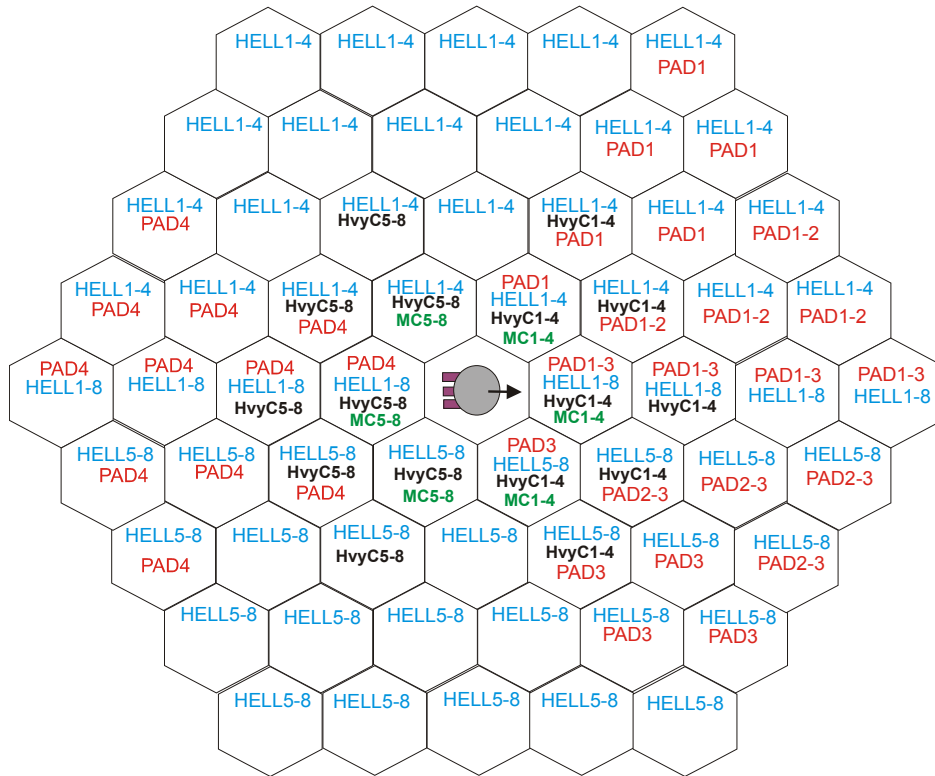
Annex A-8

Sample Damage Card Chart : Logistics Ship

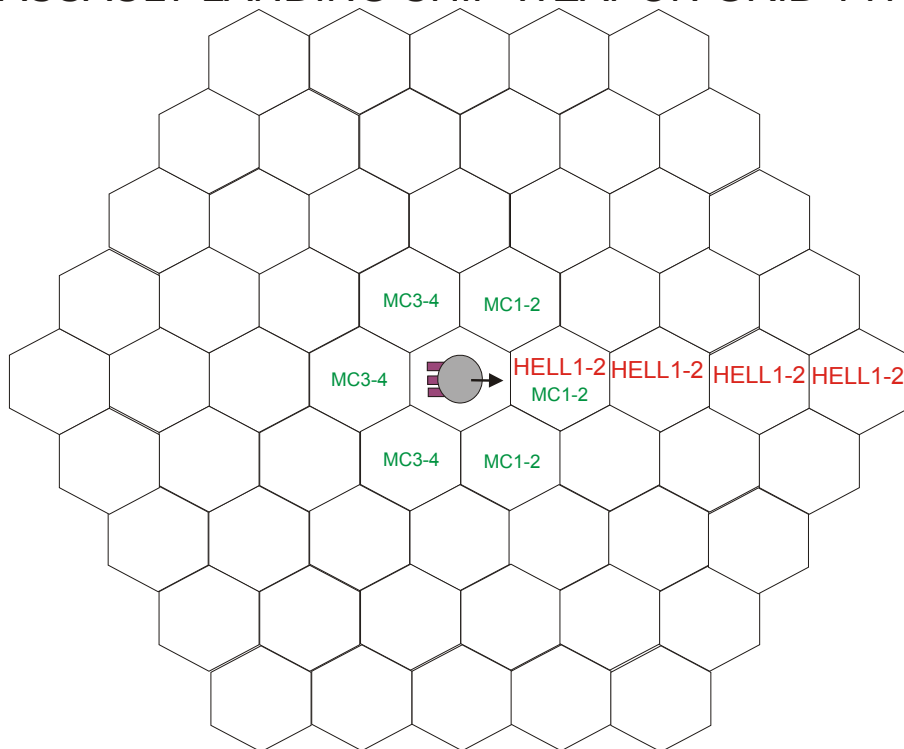
Card number or score on d100	Hull Damage	Other Effects	Repair Type
01-05	1	Mission Pod no 1 damaged	Int
06-10	1	Mission Pod no 2 damaged	Int
11-15	1	Mission Pod no 3 damaged	Int
16-20	1	Mission Pod no 4 damaged	Int
21-24	0	Heavy Cannon Pod 1 out of action	Ext
25-29	0	Heavy Cannon Pod 2 out of action	Ext
30-34	0	Multi-Cannon Pod 1 out of action	Ext
35-41	0	Multi-Cannon Pod 2 out of action	Ext
42-45	0	Chaff Pod 1 out of action	Ext
46-49	0	Flare Pod 1 out of action	Ext
50	0	Main Targeting radar out of action	Int
51	1	Sickbay Hit	Int
52-53	1	Crew quarters hit	Int
54-55	1	Marine quarters hit	Int
56-57	1	Mess deck hit	Int
58-59	1	Cargo pods hit	Ext
60-61	1	Kitchens hit	Int
62-63	1	Captain's quarters hit	Int
64-65	1	Maint workshop hit	Int
66	1	Damage control centre hit	Int
67-68	1	Shuttle bay hit	Int
69	1	Power control hit	Int
70-71	1	Marine armoury hit	Int
72	1	Bridge hit - roll for Captain	Int
73	1	Power lines hit - reduce main power by one block	Int
74	1	Power lines hit - reduce aux power by 1 block	Int
75	1	Battery damage - all battery power drained	Int
76-77	1	Fuel store damaged - lose reaction mass	Ext
78-83	1	Manoeuvre thrusters damaged - lose one box	Ext
84-88	1	Main thrusters damaged - lose one box	Ext
89-99	1	Cargo Stores hit	Irr
00	1	Hyperspace generator damaged	Int

ANNEX B
Typical Ship Weapon Grids

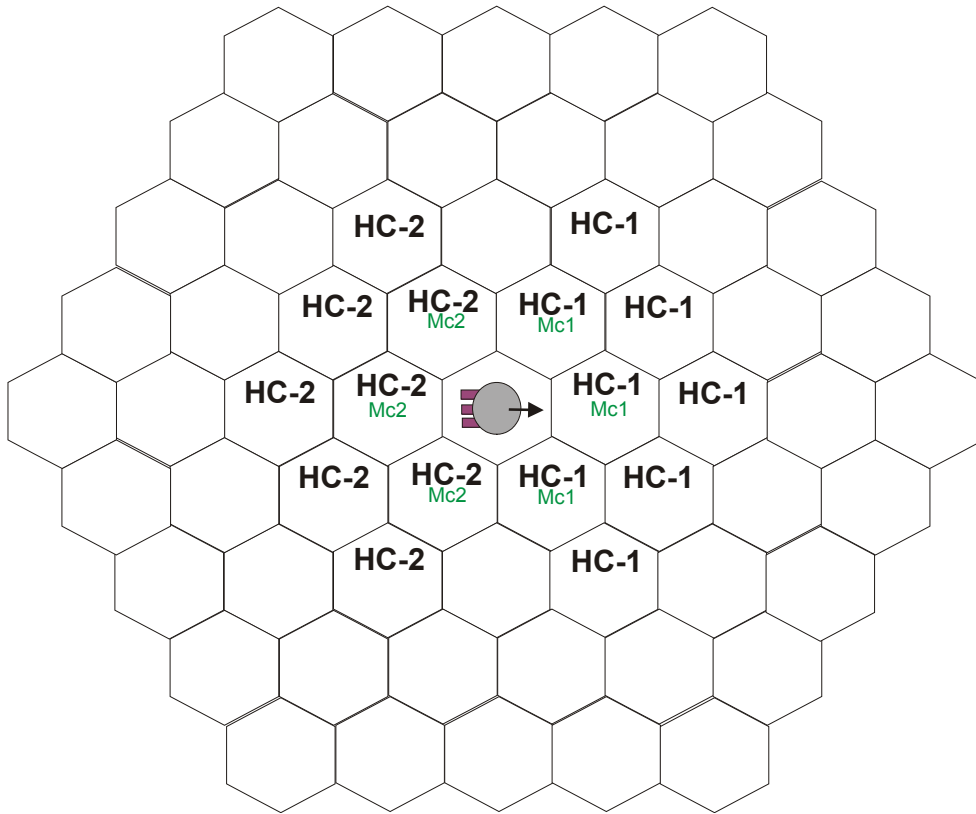
BATTLESHIP WEAPON GRID TYPE 1



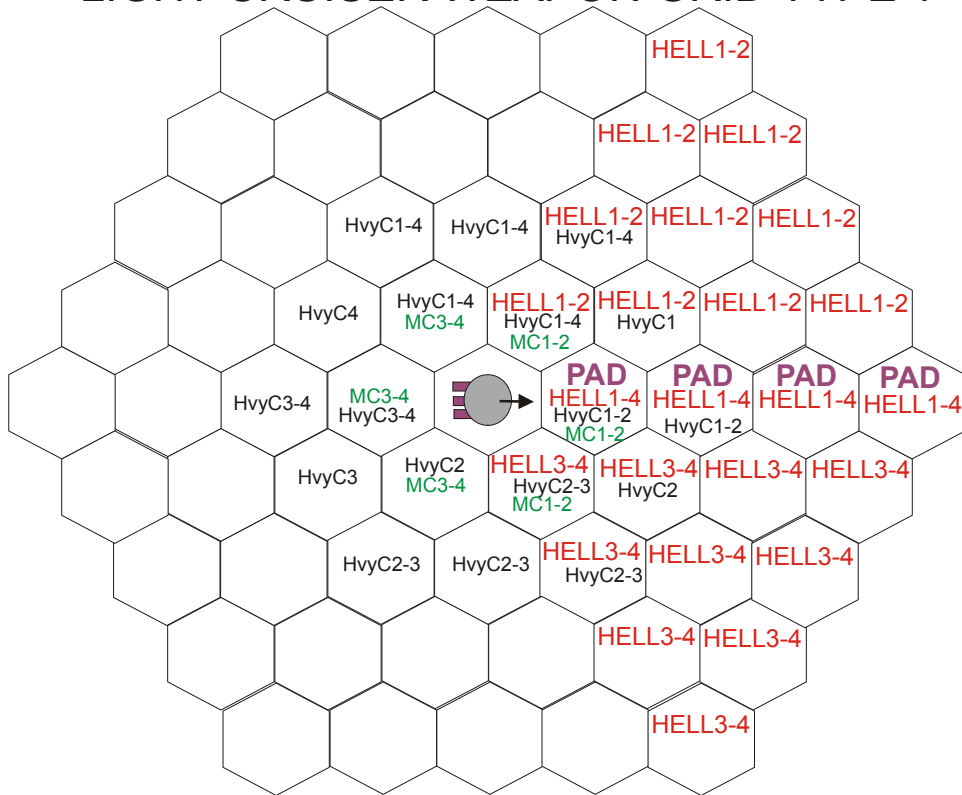
ASSAULT LANDING SHIP WEAPON GRID TYPE 1










LOGISTICS SHIP WEAPON GRID TYPE 1



LIGHT CRUISER WEAPON GRID TYPE 1



**ANNEX C
PACIFIER CONFIGURATIONS**

<p>Standard Attack Pacifier 1 HELL, 2 Multi-Cannon</p>	<p>Attack Pacifier </p> <p><input type="checkbox"/> HELL <input type="checkbox"/> M/C <input type="checkbox"/> M/C <input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Patrol Pacifier 5 x RadSeeker Missiles Extra fuel (can operate for 15 turns)</p>	<p>Patrol Pacifier </p> <p>RadSeeker <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> <input type="checkbox"/><input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Gunship Pacifier Mk1 2 forward multi-cannon 2 aft multi-cannon Extra fuel (can operate for 15 turns)</p>	<p>Gunship Pacifier </p> <p><input type="checkbox"/><input type="checkbox"/> M/C <input type="checkbox"/><input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Gunship Pacifier Mk2 4 forward firing multi-cannon Extra fuel (can operate for 15 turns)</p>	<p>Gunship Pacifier </p> <p><input type="checkbox"/><input type="checkbox"/> M/C <input type="checkbox"/><input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Cannon Pacifier 2 Heavy Cannon (forward firing)</p>	<p>Cannon Pacifier </p> <p><input type="checkbox"/> H/C <input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Dewship Pacifier 2 HELL</p>	<p>DEWSHIP Pacifier </p> <p><input type="checkbox"/> HELL <input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>
<p>Standoff Pacifier 2 HRGM</p>	<p>Standoff Pacifier </p> <p><input type="checkbox"/> HRGM <input type="checkbox"/></p> <p><input type="checkbox"/> Jets</p> <p>Hull 1 2 3 4</p>

ANNEX D : EXAMPLE ORDER SHEET

Turn	Manoeuvre Notation	Change in Velocity (Δv)	Special Actions (chaff, flares, missile targetting etc)	Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

**ANNEX E:
SPECIAL WEAPONS and Other Bright Ideas**

This section is for rules for oddities. As mentioned earlier, there is no major technological innovation in The Universe. There is however, innovative use of, and re-invention of, old ideas, using existing technology. Here's some.

A. Energy Deflector Lens

Using the same technology that is used to focus and direct the plasma in a PAD or SCA weapon, this device creates a huge field that disperses the incoming energy from these weapons.

Power required = 10

Creates a lens that covers three adjacent hexes (i.e. attacks from a 120° arc).

Effect: Prevents all damage from incoming PADs.

Has no effect on HELL (which uses light), cannon or missile weapons.

Due to local EMP effects of the Lens, ships using it cannot communicate or use targeting radar.

B. Laser Reflective Coating

Ships can have super-reflective shielding that reduces the impact of HELL. It is HELLishly expensive. Ships with LRC double hull cost (that is about +100 for a Destroyer through to +300 for a Battleship)

Power required - NIL

Effect: Prevents Hull damage from HELL - this means all damages that include 1 hull damage can be ignored.

Has no effect on PAD, cannon or missile weapons.

C. Power Overloads

In emergencies, a ship may be able to temporarily increase it's power output by overloading the generator.

Each block of power represents a power generator.

Each or any generator can be overloaded to double it's output.

You can choose which block (or all of them) you wish to overload.

Each turn of overload - roll 1d10

Die score	Effect
0	Catastrophic failure - Overload fails, power block damaged, take 2 damage cards.
1	System failure - Overload fails - Power block damaged.
2-3	Overload failed - overload failed, but switched off before any harm done. Output remains normal
4-9	Overload successful - double output of affected blocks.

D. Alternative Heavy Missile Warheads

- **Laser Impact Pulse System (LIPS).** These warheads are designed to damage external systems but not the hull. They do 3 cards of damage, but ignore any hull value and internal damage results.
- **Plasma Internal Penetration System (PIPS)** These warheads are designed to maximise internal damage. They do 3 cards of damage, but ignore any external damage results.
- **Radiation Warhead.** Designed to maximise crew casualties. Only does one card of damage, but also removes one crew factor.
- **'Bubble Gum Dispenser'.** This deploys a large number of tiny ball bearings, bound together by a charged field, occupying a single hex. These act as an obstacle. Any vessel passing through the hex at speed 2 or greater takes 1 damage card per hex of velocity.

E. Guided Smart Mines

These are light missiles modified to perform the mine role. They can be deployed to any hex at a given velocity ± 1 to the current launching ship's velocity. They require a specialised GSM Deployment Unit (same stats as a Chaff or flare launcher).

Any vessel entering the hex activates it, and becomes the target, using the Light Missile hitting rules as normal.