3e Spelljammer:
Ship Combat

Introduction

Despite the vast size of Arcane Space, ships manage to come together in violence with alarming frequency. Such encounters use a set of rules with many similarities to the rules that cover character combat. There are a number of key differences between ship combat and character combat, stemming from the differing natures of the two. Some of these differences include:

- *Ships are fast.* Even slow ships move much faster than most characters. The slowest ship using a normal spelljamming helm moves at 17 mph, and it is not impossible to find ships that can travel ten times this speed: 170 mph!

- *Ships are large.* Even smaller ships tend to be relatively large compared to most living things, and larger ships dwarf even the oldest dragons.

- *Ships are multitasking.* Although there are exceptions, ships are manned by many people, allowing the ship to move and attack in ways normally unavailable to characters. For example, a crew manning a ship weapon can act independently from the crew controlling the ship's rigging.

- *Maneuvering a ship is complicated.* Most of the time characters in combat have little problem moving about on the battlefield. Maneuvering and moving a ship is a wholly different situation, as it is based on the coordinated efforts of a number of people, including both the person manning the helm and the crew manning the rigging. There are many opportunities for things to go wrong.

- *Ships are not alive—at least not usually—but they are mobile.* Because of this, attacks and damage to a ship are handled differently than from either creatures or inanimate objects. In ways, ships are similar to constructs.

The rules for ship combat take these differences into consideration. There are many similarities between ship and character combat, but the ship combat system supercedes the rules for character combat from the Player's Handbook.

Definitions

Armour Class (AC): An overall measure of the difficulty of landing a damaging blow on a ship, much like Armour Class for characters and monsters.

Hardness: An object's ability to resist damage. It is based on the materials the object is made from. The hardness rating of the object is subtracted from the damage it takes.

Maneuver Bonus: An overall measure of the skills of the men operating the ship rigging and the pilot on the helm. To find the maneuver bonus of a ship add the average Operate Rigging skill of the riggers with the Pilot Spelljammer skill of the pilot, then divide by two.

Maneuver Roll: The roll required in order to perform many of the move actions a ship can take, as well as resolve other aspects of ship maneuvering. It is rolled using the maneuver bonus plus the ship's current maneuverability modifier.

Maneuverability Class (MC): A measure of how capable a ship is at maneuvering when moving at tactical speeds. It includes a large number of factors, some of which are situational, and can change from one round to the next. Each Maneuverability Class is given a letter, A though J, plus X. with A being the best a ship can have, and X being the worst. Any time a ship is dropped below J it is considered X, which is the worst a ship can have and still be mobile.

Maneuverability Modifier: The inherent maneuverability of the ship can add or detract from the skills of the crew. The maneuverability modifier is added to all rolls the ship makes where maneuver bonus is involved. Because the Maneuverability Class of the ship may vary from one round to the next, the ship's current maneuverability modifier may also vary, and is thus not added directly into maneuver bonus but rather tracked separately.

Ship Weapon: A large siege weapon mounted on a ship or other structure. Ship weapons include ballista, stonethrowers, catapults, jettisons, bombards and accelerators.

Size: Like creatures, all ships have a size. Ship size is not on the same scale as creature size. Size can affect the ship's ability to hit with ship weapons. Unless specifically stated otherwise, size in this chapter always refers to ship size.

Speed: A measure of how fast a ship can move. Speed is represented by two numbers separated by a slash. The number before the slash is feet per round, as with any other speed rating. The second is rated in hexes per round, which is the number of hexes the ship can move on the combat map each round. One hex is 150 feet, and each hex per round is approximately 17 miles per hour.

Combat Sequence

Ship combat is cyclical. (Each ship acts in turn in a regular cycle.) Generally, combat runs in the following way:

1. The DM determines which ships are aware of their opponents at the start of the battle. If some but not all of the ships are aware of their opponents, a surprise round happens before regular rounds begin. The ships who are aware of the opponents can act in the surprise round, so they roll for initiative. In initiative order (highest to lowest), ships who started the battle aware of their opponents each take an action during the surprise round. Ships must choose their move actions before performing any other actions. Ships who were unaware do not get to act in the surprise round. If no or all ships start the battle aware, there is no surprise round.

3. Ships who have not yet rolled initiative do so. All ships are now ready to begin their first regular round.

4. Ships act in initiative order. The ship must choose its move action before performing any other actions.

5. When each ship has had a turn, the ship with the highest initiative acts again, and steps 4 and 5 repeat until combat ends.

Initiative

Each round, each ship gets to do something. The ships' initiative checks determine the order in which they act, from highest to lowest. At the start of a battle, each ship makes a single initiative check, adding the ship's current maneuver modifier. The DM finds out what order ships are acting in, counting down from highest result to lowest, and each ship acts in turn, with the check applying to all rounds of the combat. If two or more ships have the same initiative check result, the ships who are tied go in order of maneuverability modifier (highest first). If there is a tie, use their helmsman's Pilot Spelljammer skill. If there is still a tie, flip a coin.

Surprise

When ship combat starts, if a ship is not aware of enemy ships and they were aware of it, it is surprised. Sometimes all the ships on a side are aware of their enemies, sometimes none are, sometimes only some of them are. Sometimes a few ships on each side are aware and the other ships on each side are unaware.

The DM determines who is aware of whom at the start of a battle. He may call for Spot checks or other checks to see how aware the crew are of the enemy. When spotting ships in open space—anything 1 ton or larger—a character does not suffer the normal -1 per 10 feet penalty. Instead, it is -1 per ten hexes, or 1,500 feet. This assumes a standard lighting situation. Darker conditions will modify this.

If some but not all of the ships are aware of their opponents, a surprise round happens before regular rounds begin. The ships who are aware of their opponents can act in the surprise round, so they roll for initiative. In initiative order (highest to lowest), ships who started the battle aware of their opponents each take their actions during the surprise round. If no ship or all ships are surprised, a surprise round does not occur.

Ships that are unaware at the start of battle do not get to act in the surprise round.

Ship Actions

Because ships are operated by multiple people, the types of actions a ship can take work differently. Technically, ships take no actions; the people on the ship perform all actions. The helmsman moves the ship, the weaponeers fire the weapons, and so forth. Still, for ease of play, many such actions are referred to as if the ship was taking the action. For example, when the pilot moves the ship, it is referred to as the ship taking a move action. In effect, the results of character actions translate into ship actions. Throughout these rules the type of character actions required for a given ship action are detailed.

There are two types of actions a ship can take—move actions and standard actions—just as with a character. Ships do not take partial actions. A ship can take one move action and any number of standard actions, based on the actions of those aboard. A ship cannot take two move actions (i.e. a double move) in a round.

Movement

The movement of spelljamming ships across the stage of combat is much like the movement of warriors on the battlefield. Both will attempt to get into positions ideal for attack and defense. The movement of ships tends to be more complex, because the free-floating and three-dimensional aspects of space combat allow for more variety and options than does moving along the ground.

Characters and Ship Move Actions

Ship movement is a result of the actions of the character sitting on the helm. Without an active helm—or similar magics—a ship cannot move.

Moving a ship via a helm is a standard action. It does not provoke attacks of opportunity, but a character on a helm is relatively immobile, and thus is denied his Dexterity bonus to AC. Normally they cannot move off the helm without severing the link with the helm, which instantly stops the ship dead. They can take move-equivalent actions.

While linked to a helm a character cannot cast spells or use magic items with the spell completion activation type (e.g. scrolls). The helm simply drains off the magic before it is released.

The crew of men operating the rigging are also heavily involved. Operating rigging is a full round action that does not provoke attacks of opportunity. In some instances the rigger will have to move to do his job, up to his normal movement rate. This may provoke attacks of opportunity if the movement is through an enemies' threatened area.

The Basics of Ship Movement

All ships have a speed rating. Speed is represented by two numbers separated by a slash. The number before the slash is feet per round, as with any other speed rating. The second is rated in hexes per round, which is the number of hexes the ship can move on the combat map each round. Each hex is 150 feet. These rules are primarily concerned with the second number, hexes per round. The number of hexes per round a ship can move works as pool of points—termed speed points—which are spent to move hexes on the combat map. Moving forward is simple, and all ships follow the same rules, regardless of how maneuverable they are: moving forward one hex takes one speed point.

Unlike personal combat, ship combat has strict rules for facing. Each hex has six sides, and the front of the ship must be pointing towards one of these sides; it cannot be facing one of the corners. In order to turn, a ship must use some of its speed points to change facing. If a ship wishes to change its facing it must spend one point of speed for each hex face they wish to turn.

The maneuverability class of a ship plays an important part of how a ship turns. For each maneuverability class there are two corresponding numbers that affect turning. The first is *free turns*. This is the number of times a ship can change their hex facing by one without using speed points. For example, a ship with MC B has two free hex face changes every round. Before a ship can use any of these free turns they must have moved forwards at least one hex this round. After that they can use the free turns as they see fit. Beyond these free turns the ship must spend one speed point per hex face change, as normal.

The other number is *turns per hex*. This is the number of times a ship can change hex facing within a single hex, if the ship is also moving forward this round in any manner. In order to make additional turns the ship must move forward at least one hex. For example, an MC C ship can make 2 turns per hex. This means that they can turn twice in a single hex, but in order to make a third hex face change they must first move forward into another hex. Some ships have fractional turns per hex, which means they must move forward more than one hex before every single hex face change. For example, a ship with a turns per hex of 1/3 must move three hexes forward before every turn. All forward movement must be consecutive, but need not all occur in the same round. Thus if the ship moved forward one hex last round and two the current round, it could then change its hex facing by one side.

Note that free turns and turns per hex only apply to ships moving forward at all. If the ship is rotating in one place it uses the rotate move action, detailed below.

Multi-Hex Ships

Each hex is 150 feet long, and some ships will be larger than this. A ship might be both longer and wider than 150 feet, in which case they take up more than one hex, possibly in multiple directions. See the image below for examples. In these cases the forward most hex is considered the front of the ship and its turning point. When any turns are made, they are based on this hex, and the rest of the ship turns around that hex.

Table XX: Maneuverability Class

|	A	B	C	D	E	F	G	H	I	J	X
Free Turns	3	2	2	1	1	0	0	0	0	0	0
Turns/Hex	6	4	2	2	1	1	1/2	1/3	1/4	1/5	1/6
Maneuverability Modifier	+4	+2	+1	–	-2	-4	-6	-8	-10	-14	-20

Move Actions

On a ship's initiative, before anyone on board the ship can perform an action, the helmsman must determine how the ship is going to move this round. This is done by deciding which type of move action the ship will take. The type of move action the ship takes can affect other aspects of combat, such as how hard it is for the ship's weapons to attack other ships, how hard it is for other ships to attack your ship, or how hard it is to ram a ship. There are nine different move actions: standard, offensive, defensive, full defensive, ramming, forward, still, rotate and fail. Each move action will affect the attack, defense and ramming capabilities of the ship, and may determine how the ship can move. Ships must take a move action every round—even nonmoving ships are taking the still action—and the type of move action is chosen before any other actions are resolved.

The move actions of ships are not always performed automatically. The maneuvering of a spelljamming ship is a team effort involving the helmsman and the crew operating the steering devices of the ship, and there are many opportunities for things to go wrong. Because of this, several of the move actions for ships require a maneuver roll to succeed. A maneuver roll is the ship's maneuver bonus plus its current maneuverability modifier. Maneuver bonus is equal to the average Operate Rigging skill of the rigging crew plus the Pilot Spelljammer skill of the helmsman, divided by two. The maneuverability modifier is based on the ship's current Maneuverability Class, as shown on Table XXX.

The various move actions are detailed below. If the action has a listed Difficulty Class, that action requires a maneuver roll. If the roll succeeds the ship can move and the modifiers listed for the move action take effect, and remain in effect until the helmsman picks his next move action. If the maneuver roll fails, the ship automatically takes the fail move action. This includes any other time the ship is required to make a maneuver roll against its current move action.

Single and Multihex Ships
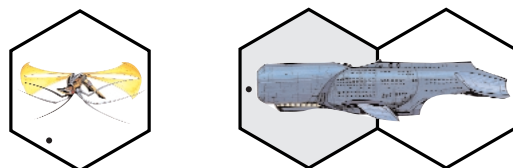
The dot designates the front of the ship. The shaded area of the whaleship is the front section which is used for face changes.

Some move actions—forward, still and rotate—require no maneuver roll to succeed. These move actions are simple enough even the untrained can perform them. Plus, if the helmsman takes the same move action in a round that they did the last round, they can take 10 on the maneuver roll to succeed. The exception to this is full defensive, which requires a roll every round it is performed. For example, a ship using the forward action wants to take the standard move action on its next turn. The helmsman makes a maneuver roll and succeeds. He then takes the standard move action for the next three rounds, and since the ship's effective maneuver bonus, including the maneuver modifier, is +10, he can take 10 on the three subsequent rounds after he rolls, automatically succeeding. If he then wished to take the full defensive move action he would make to a maneuver roll.

Each move action lists modifiers for three different things: attack, defense and ramming. The attack modifier affects any ranged attack the ship makes against other ships or their crews. This includes ship weapons, personal weapons, and any magic spells or abilities that require rolls to hit. The defense modifier affects the ship's Armour Class against all attacks directed at the ship, as well as the AC of all those aboard against missile or spell attacks from other ships. It also modifies the helmsman roll to avoid being rammed. Attack bonuses are circumstance bonuses, and defense bonuses are dodge bonuses. The ram modifier affects any rolls to successfully ram another target, including counter-ramming and shearing attacks.

Standard
DC 15
Attack +0 / Defense +0 / Ram -3
Standard is a compromise between attack and defense. The helmsman seeks to maneuver the ship into positions suitable for ship weapon attacks, while giving equal attention to avoiding attacks from opponents.

Offensive
DC 20
Attack +2 / Defense -3 / Ram -5
The offensive move action focuses on positioning a ship to optimize attacks with ship weapons or crew-fired weapons, giving less attention to defense. Movement follows the normal rules.

Defensive
DC 20
Attack -3 / Defense +2 / Ram -5
This move action, often called "evasive maneuvers," is the opposite of offensive; the ship is maneuvered to focus more on defense, and attack is made secondary. Movement follows the normal rules.

Full Defensive
DC 25
Attack -6 / Defense +4 / Ram -8
Full defensive is evasive maneuvering taken to its limits; the ship is maneuvered to focus completely on defense, and attack is ignored. Unlike other move actions, a roll must be made every round to perform the full defensive move action. Movement follows the normal rules.

Ramming
DC 20
Attack -2 / Defense -2 / Ram +0
All other move actions give a penalty to ramming. The ramming move action, though, is optimized for it, and thus has no penalties. The ship maneuvers only to try to ram, giving little attention to defense or ship weapons. Movement follows the normal rules.

Forward
No Roll Required
Attack -4 / Defense -2
This is simply moving forward, with no turning at all; Speed points cannot be spent on hex face changes, nor can free turns from MC be used. This does not require a roll to perform, but it gives penalties to hit and defense, and ramming another moving ship is pretty much impossible; the DM might allow a ship using the forward action to ram a non-moving ship in its path of movement.

Still
No Roll Required
Attack -5 / Defense -4
This is simply not moving at all, and the ship cannot spend speed points on any form of movement. Non-moving ships are easier to hit with ship weapons, and anyone attempting a ram against them roll against only their Armour Class, and the still ship can never attempt to counter-ram. A ship that was moving the previous round cannot take the still move action unless they can decelerate down to zero speed. Not surprising, the still move action does not require a roll to succeed.

Rotate
No Roll Required
Attack +0 / Defense -2
The rotate move action is for when the ship is not moving forward, but rotating in the same spot. The ship can move two hex faces at the cost of one speed point, but cannot spend speed points on forward movement, and does not get the free turns they would normally receive for their MC. Anyone attempting to ram a rotating ship rolls against only its Armour Class, but the rotating ship can attempt to counter-ram when appropriate. Rotating ships can take the ready action to rotate into position in order to counter-ram as well.

A ship that was moving the previous round cannot take the Rotate maneuver unless they can decelerate down to zero speed in one round. The rotate maneuver does not require a roll to succeed.

Fail

Special

Attack -5 / Defense -3 / Ram -6

This is the move action all ships take if they fail their roll to perform other move actions. Ships performing this move action have an effective MC of one worse than the previous round; this means the MC penalty is cumulative, should the ship continue to take the fail action. Succeeding in any other maneuver removes all penalties. Movement otherwise follows the normal rules.

Acceleration and Decerlation

A ship's speed is the maximum number of hexes the ship can move in a round, but ships must spend time accelerating and decelerating in order to move maximum speed, or back down to zero. Each round a ship has a maximum and minimum number of points they must spend on forward movement. The maximum number they can spend is either the maximum speed of their helm, or the amount they spent last round plus the acceleration of their helm, whichever is less. The minimum number of speed points they must spend on forward movement is the number of points they spent last round, minus their deceleration, whichever is higher.

The acceleration and deceleration of a helm is one-half its maximum speed, minimum of either 2 or or its maximum speed, whichever is less. This is summarized on Table XX.

Table XX: Acceleration & Deceleration										
Max Speed	1	2	3	4	5	6	7	8	9	10
Acc/Dec	1	2	2	2	3	3	4	4	5	5

Moving Backwards and Sideways

Normally ships move forward, along the direction they are facing, but helms are not necessarily limited to this direction of travel and are actually capable of flying in any direction. The majority of ships, though, are designed along lines specific to forward movement, as is the ship's rigging. Because of this, any movement in a direction other than forward in a round requires a maneuver roll for the current move action for every hex moved this way. The helmsman cannot take 10 one this roll, nor on his maneuver roll for his move action on his ship's next round.

Rolling

Rolling is spinning along the beam of the ship. If a ship is moving at least speed 1 and no turns have yet been made this round it can roll to any angle as a free action. Otherwise it requires the ship to spend one point of Speed to roll. The primary use of rolling is to bring weapons on one side of a ship to bare on an enemy on the other side; the ship rolls instead of turning 180,° which allows it to keep the same heading and spend less Speed points.

Rolling requires a maneuver roll, using the same DC as the current move action. If this roll is failed, the ship shifts immediately to the fail move action.

Stacking

Because of the nature of the environment, a single hex can hold any number of ships. Some actions, such as ramming, grappling or shearing require a ship to enter its target's hex.

When one ship is in the same hex as another the DM will have to decide the actual distance between the two. Each hex is 150 feet. Ships can also be above or below each other, though these rules do not deal with the third dimension of altitude in ship combat.

Ship Weapons

Most ships in Arcane Space carry at least a few ship weapons on board. Resolving attacks with them is not all that different than resolving missile attacks during normal combat.

The Attack Roll

The basic attack roll is:

$$1d20 + \text{Base Attack} + \text{Weapon Modifier}$$
$$- \text{Range Penalties} \pm \text{Size Modifier}$$

This may be further modified by the maneuver the ship is currently taking. The total is compared to the target ship's current Armour Class; if the roll is equal to or greater, it is a hit. Otherwise, it is a miss. A 20 is always a hit and a 1 is always a miss.

Base Attack

Attacking with a ship weapon is based on the skill of the leader of the weapon crew. Base attack is equal to one-half of the total number of ranks the leader of the crew has in Profession (Ship Weaponeer) and his Wisdom bonus. For example a heavy stonethrower is lead by a warrior with 6 ranks in Profession (Ship Weaponeer) and an Wisdom bonus of +2. The total of this is 8, for a base attack of +4. Although base attack is derived from a skill, attacks from ship weapons are attack rolls, not skill checks.

If the crew leader does not have the appropriate Ship Weapon Proficiency feat they suffer a -4 penalty to hit. If they do not have the Profession (Ship Weaponeer) skill at all they suffer a total of -8 to hit.

Weapon Modifier

Some weapons are more accurate than others. Each ship weapon has an attack modifier that is added to all attack rolls.

Range

All ship weapons have a listed range, in hexes. They receive no penalty to attack ships within this range. For every hex beyond this, they have a penalty of -2 to their attack roll.

Size Modifier

The size of the ship attacking will make it easier or more difficult to hit with ship weapons. This size modifier is shown on Table XXX.

Table XX: Ship Size By Tonnage

Ship Size	Tonnage	Attack/AC Modifier	Creature Equivalent
Very Fine	*	+16	Small
Fine	*	+8	Medium
Diminutive	*	+4	Large
Tiny	1-2	+2	Huge
Small	3-6	+1	Gargantuan
Medium	7-14	–	Colossal
Large	15-30	–1	
Huge	31-62	–2	
Gargantuan	63-126	–4	
Colossal	127+	–8	

* A helm cannot move a ship smaller than 1 ton.

Firing Arcs

Because ship combat uses specific facing rules, the direction a ship-mounted weapon is facing is important. Unless the weapon is turreted, it can fire into a limited area, termed its firing arc. There are four firing arcs: forward, aft, port (left) and starboard (right). The firing arcs are illustrated below. The firing arc of a weapon is determined by its placement and facing. Unless it is mounted on a turret, a weapon will be capable of firing into only one of these arcs.

Multihex ships work the same way. Decide which hex of the ship a given weapon resides on, then use that single hex to determine its firing arc.

If mounted on a turret the weapon can change its firing arc. It takes one man one round to rotate a light weapon into a new arc. It takes one man two rounds, or two men one round for medium and ship weapons. This can be done during reloading, but men rotating the turret cannot also assist in reloading. The weapon's placement will dictate the full range of firing arcs it can choose from, but it can change to any of these when changing. For example, a weapon mounted on a turret on the forecastle of a galleon could adjust to fire in the port, fore or starboard arcs, but not the aft arc, since its sails get in the way.

Note that doing a roll can allow a ship to bring weapons on one side of the ship to bare on another side. See the Movement section for more on rolls.

Reload

Each ship weapon has a listing for crew and reload. Reload is the number of rounds the crew must spend reloading the weapon before it can be fired again. The listed crew is the number of crew required in order to have the listed reload time, assuming all have one or more ranks in the Profession (Ship Weaponeer) skill; those without it count as one-half a man. This time is dropped by one round if an extra man is added to the crew, and all men have the Profession (Ship Weaponeer) skill, though crew beyond this do not help. For every man under the listed crew, add one to the Reload time, down to a minimum of one man.

Reload times assume that ammunition for the weapon is within 30 feet of the weapon and easily accessible. For every additional 30 feet away the ammunition is from the weapon, add 1 to the reload time.

The crew listed for a weapon is only there for the purposes of reloading. Actually firing a weapon requires only one man, the crew leader.

Damage

If a ship weapon succeeds in hitting its target, roll its listed damage. Subtract from this the hardness of either the frame, the hull or the plating, whichever is higher. This damage is then subtracted from the ship's hit points. See Ships and Damage, below, for more on a ship's hit points.

Threats and Critical Hits

Each weapon has a threat rating. If the attacker rolls this number or greater, and the attack was a hit, the attacker has scored a threat. Roll the attack again, using the all the same modifiers. If the second roll is a success, the attack is a critical hit. If it is a failure, it is a normal hit.

On a critical hit roll the weapon's listed damage twice, including bonuses, such as enhancement bonuses. If the weapon has a multiplier of x3 roll the damage thrice. All damage from a critical hit is totaled before hardness is subtracted.

The helmsman of a spelljamming ship is linked with the ship on a spiritual level, and when a ship is struck with a critical hit it may harm him. This is known as spelljammer shock. When a ship with an active helm is struck with a critical hit the helmsman must make a Fortitude save. The DC of the save is the amount of damage done by the critical hit, divided by 10.

On a successful save the helmsman is shaken for one round. A shaken character suffers a –2 morale penalty on attack rolls, checks, and saving throws, and cannot take 10 on any maneuver rolls. If the character fails he takes subdual damage equal to the DC of the Fortitude save (1/10th the total damage from the critical hit) and is shaken for 1d4+1 rounds. If the helmsman is dropped to unconsciousness due to subdual damage from spelljammer shock he enters a coma, which lasts for 1d4+1 days.

Cover

Depending on the situation, a ship may gain bonuses or suffer penalties due to cover. Cover provides a bonus to a ship's AC. The more cover a ship has, the bigger the bonus. Cover is
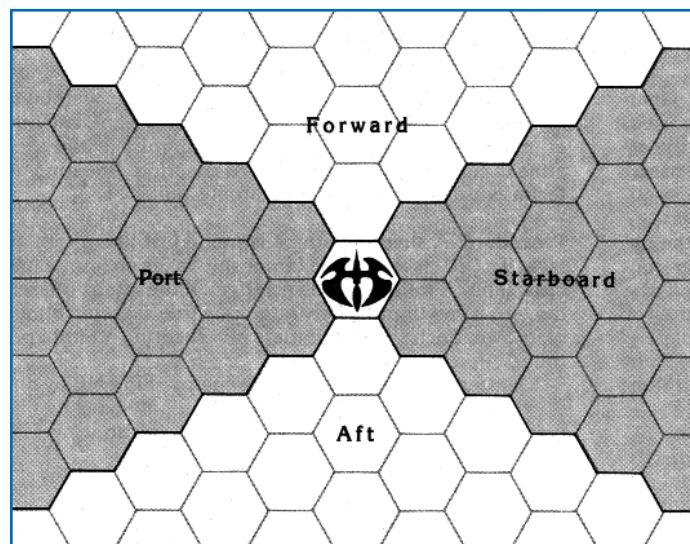
Table XXX: Cover

Degree of Cover	Cover AC Bonus	Cover Reflex Save Bonus
1/4	+2	+1
1/2	+4	+2
3/4	+7	+3
9/10	+10	+4*
Total	–	–

*Half damage if save is failed; no damage if successful.

assessed in subjective measurements of how much protection it offers a ship. The DM determines the value of cover. See Table XXX.

Add the listed bonus to Reflex saves against attacks that affect an area. For nine-tenths cover, a ship also effectively has improved evasion. These bonuses, however, only apply to attacks that originate or spread out from a point on the other side of the cover. Both the crew and the ship gain this bonus.

If it ever becomes important to know whether the cover was actually struck by an incoming attack that misses the intended target, the DM should determine if the attack roll would have hit the protected target without the cover. If the attack roll falls within a range low enough to miss the target with cover but high enough to strike the target if there had been no cover, the object used for cover was struck. This can be particularly important to know in cases where a ship uses another ship as cover. In such a case, if the cover is struck and the attack roll exceeds the AC of the covering character, the covering ship takes the damage intended for the target.

If the covering ship has an AC bonus due to his move action, and this bonus keeps the covering ship from being hit, then the original target is hit instead. The covering ship has dodged out of the way and didn't provide cover after all. A covering ship can choose not to apply his move action bonus to AC, if his intent is to try to take the damage in order to keep the covered ship from being hit.

Concealment

Concealment includes all circumstances where nothing physically blocks a shot but where something interferes with an attacker's accuracy. Concealment is subjectively measured as to how well concealed the defending ship is. Concealment always depends on the point of view of the attacker. See Table XXX.

Concealment gives the subject of a successful attack a chance that the attacker missed because of the concealment. If the attacking ship hits, the defender must make a miss chance percentile roll to avoid being struck. When multiple

Table XXX: Concealment

Degree of Concealment	Example	Miss Chance
1/4	Light Fog/Moderate Darkness	10%
1/2	Dense Fog at 150 feet	20%
3/4	Dense Dust	30%
9/10	Near Total Darkness	40%
Total	Total Darkness/ Blindness/Invisible Target/ Dense Fog at 300 feet	50%

concealment conditions apply to a defender, use the one that would produce the highest miss chance.

Specific Targets

There will be times when a weapon crew wishes to target specific parts of a ship, such as its crew, weapons or rigging. Plus, some ships are made up of identifiable sections that a crew may wish to target. Each of these situations works similarly.

Targeting Crew: Attacking the crew on an enemy ship with ship weapons not easy. It follows the normal rule for ship weapon attacks, but character targeted gains a bonus to its AC based on its size. This size is ship size, not creature size. To find a character's ship size, refer to Table XXX. For example, a weapon crew wishes to target the captain of a ship, who has come up on deck. The captain is human and thus medium-size. A medium-size creature on Table XX is equal to a fine ship, which grants the captain a +8 to AC.

In addition, the target gains any bonuses to AC that the ship gains from cover or its move action, though it does not suffer any penalties the ship gains from move actions. For example, full defensive gives the ship a +4 to AC, and all characters aboard the ship also gain this bonus, but characters aboard a ship do not suffer the –4 penalty to AC from the still move action.

Targeting Weapons: Ship weapons each have their own hit points and armour class, listed in their description. The weapon gains any bonuses to AC that the ship gains from cover or its move action, though it does not suffer any penalties the ship gains from move actions.

Targeting Rigging: Rigging has AC 20, modified by size, and rigging is smaller than the ship it is on. Minimal is three sizes smaller, standard is two sizes smaller, and terrestrial and topped-out are one size smaller. Solid rigging adds +5 to this. The rigging gains any bonuses or penalties to AC that the ship gains from cover or its move action.

Standard and topped-out rigging have a number of hit points equal to five times the the tonnage of the ship. Minimal rigging has half of this (x2.5). Double these numbers for solid rigging. Terrestrial rigging has hit points equal to seven times the tonnage of the ship. Sails have no hardness and solid rigging has the same hardness as the hull material. When standard, terrestrial or topped-out rigging is reduced to half its hit points it becomes effectively minimal rigging, with the same crew requirements. Minimal rigging reduced to zero becomes none. Any time a ship's rigging is reduced the ship must make an immediate maneuver roll for its current move action.

These above rules assume attacks by ship weapons or similar assaults. Strategic attacks by characters with cutting weapons can damage rigging much more effectively, as determined by the DM.

Solid Mass: Ships with solid mass do not combine the hit points of their two sections. A weapon crew that recognizes the solid mass will typically aim for the non-solid sections of the ship. The non-solid section has its own AC and hit points. If the crew is not aware that a part of the ship is solid the section they strike will be random. To find which section the crew attacks find the

percentage of the total tonnage each section takes and then roll percentile dice to determine which is hit. Then use that section's AC.

For example, an octopus ship is a 30 ton ship with 20 tons of solid mass, for 50 tons total. A green crew does not recognize this and so does not specifically aim at the non-solid section. The solid mass is 40% of 50 tons, and the non-solid section is 60%, so each time the crew attacks before they realize part of the ship is solid they roll percentile dice. On 1-60 they hit the non-solid section, and on 61-100 they hit the solid mass.

Composite Hull: A ship with a composite hull works similar to ships with solid mass. The attacking crew can target individual areas of the ship. Unlike solid mass ships, though, composite hull ships have an overall set of hit points for the whole ship. When targeting individual sections, each section should modify its AC by size. Thus a huge metal ship might have a 12 ton section hulled in wood. If a weapon crew targets that section it would have the AC for a wood hull, but would have the size modifier for a medium-size ship, since 12 tons is medium-size.

If the weapon crew does not realize a ship has a composite hull they fire normally, or they can simply aim at the ship as a whole, not worrying about which section they hit. See Solid Mass, above, for rules for such random attacks. Individual sections of a composite hull ship do not gain size modifiers separate from the ship when attacked randomly this way. Whatever section is hit will determine the hardness; as always, use the best of either the frame, the hull or the plating.

Split Frame: A ship with a split frame works similar to ships with solid mass. The attacking crew can target individual areas of the ship. Unlike solid mass ships, though, split frame ships have an overall set of hit points for the whole ship. When targeting individual sections, each section should modify its AC by size. Thus a huge metal-framed ship might have a 12 ton section with a wooden frame. If a weapon crew targets that section its would have the same AC as the rest of the ship, but this AC would have the size modifier for a medium-size ship, since 12 tons is medium-size.

If the weapon crew does not realize a ship has a split frame they fire normally, or they can simply aim at the ship as a whole, not worrying about which section they hit. See Solid Mass, above, for rules for such random attacks. Individual sections of a split frame ship do not gain size modifiers separate from the ship when attacked randomly this way. Whatever section is hit will determine the hardness; as always, use the best of either the frame, the hull or the plating.

Shell Ships: The two ships that make up the shell ship are typically targeted individually. The percentage of the smaller ship's tonnage that the larger ship devotes to the mooring space is used to determine the smaller ship's level of cover in combat. For example, a 60 ton shell ship designates 3 tons to hold a 6 ton ship. This is 50% of the smaller ship's tonnage, giving it half cover.

Other Specific Targets: It is possible to target other specific areas of a ship, or objects on a ship. In such cases the target's AC is based on its materials and its size.

Jettisons and Fire Projectors

These two ship weapons work differently than the others. Both create area effects, and can hurt the crew. Attacking with a jettison or a fire projector requires the same roll, but instead of the ship's AC, the difficulty is a flat DC 15 plus the ship's current defense modifier from its move action. The crew chooses where they wish to center the attack, then rolls to hit. If they succeed by five or more, the center of the area is where they planned. If they succeed by less than five the attack hits, but its center is 1d6 x 5 feet from their planned center. Roll 1d8 to determine the direction. Both a jettison and a fire projector allow saves for half damage. As with any Reflex save, the crew gains a bonus to their save based on any cover they might benefit from.

Jettison: The Reflex save against a jettison is DC 11 for a small jettison, DC 12 for a medium and DC 13 for a large. The area of effect is a 5 foot radius for a small jettison, 10 feet for a medium and 15 foot for a large. Each bit of shrapnel does approximately 1 point of damage, and thus does not harm anything with a hardness of 1 or better.

If half or more of the rigging crew takes damage from a jettison, whether they are killed or not, the ship needs to make a maneuver roll for their current move action.

Fire Projector: The Reflex save against a fire projector is DC 13 for a small projector, DC 14 for a medium and DC 15 for a large. The area of effect is a 10 foot radius for a small projector, 15 foot for a medium and 20 foot for a large. Ships use these DCs when determining if they catch on fire from fire projector attacks.

On the round following hit, anyone that took damage from a fire projector takes additional damage; roll the projector's damage a second time. The target can take a full-round action to attempt to extinguish the flames before taking this additional damage. It takes a successful Reflex saving throw (DC 15) to extinguish the flames. Rolling on the ground allows the character a +2 bonus. Leaping into enough water to cover the character or magically extinguishing the flames automatically smothers the flames.

If half or more of the rigging crew takes damage from a fire projector, whether they are killed or not, the ship needs to make a maneuver roll for their current move action.

Damage from a fire projector also applies to a ship, even if it also strikes characters. While the damage is minimal enough, it can start the ship on fire. See Fire, in Ships and Damage, below.

Characters and Ship Weapons

Ship weapons do not normally load and fire themselves. In order for a weapon to be loaded, turned or fired the weapon crew must take one of three actions.

Loading a weapon is a full round action that provokes attacks of opportunity. Some men in the crew may move during the full round action in order to retrieve and place ammo for the weapon, and this movement may invoke an attack of opportunity if it is through an enemies' threatened area.

Rotating a turreted weapon to a different firing arc is a full round action that does not provoke attacks of opportunity, but it

may involve moving through a threatened area, which does provoke an attack of opportunity.

Firing a weapon is a standard action that provokes an attack of opportunity, as all attention is focused on hitting the enemy ship.

Ship Weapons and the Ready Action

Because firing a ship weapon is a standard action, it is possible for the crew leader to take a ready action in order to fire the weapon. Doing so works differently than normal ready actions.

First, when using a ready action to fire a ship weapon all initiative numbers remain the same. Unlike a normal ready action taken by a character, the initiative of the person and ship that took the ready action does not become one greater than the ship they are acting against.

Second, the conditions that will trigger the readied action need not be specific. Once a crew leader has taken the ready action to fire a ship weapon, he can fire at any time, even in the middle of someone else's turn. He can fire between hexes of movement, or after the other ship has performed some action. If another ship has declared an action, the readied action goes after the declared action. Each hex of movement is considered a separate declared action.

The crew leader can still get specific if he wishes, which allows his readied action to go before a declared action, as a readied action normally would.

Ramming

Most ships designed for warfare are outfitted with a ram, allowing them to plow into other ships. Ramming has the potential for large amounts of damage, but there is risk involved. Ramming a ship may result in damage to your own ship. In some situations the enemy ship may be able to maneuver to ram you in return. Ramming is handled a bit differently than ship weapon attacks. The skill of the helmsman and crew of the ship is important, as is the maneuverability of the ship and the target's armour class.

In order to ram another ship the attacker must move into that ship's hex; a ship cannot ram another ship in the same hex, although it can leave then re-enter the hex. When ramming, the facing of the target and the direction from which the attacker approaches is important, as it determines the angle of attack. There are four angles: head on, aft on, forward and aft, which are illustrated in diagram XX.

The procedure for resolving a ram attempt is:

$$d20 + \text{attacker's maneuver bonus}$$
$$+ \text{maneuverability modifier} \pm \text{size modifier}$$

vs.

$$\text{defender's maneuver bonus} + \text{maneuverability modifier}$$
$$+ \text{one-half Armour Class}$$

Ram Angles
Aft
Aft On
Forward
Head On
Aft
Foreward
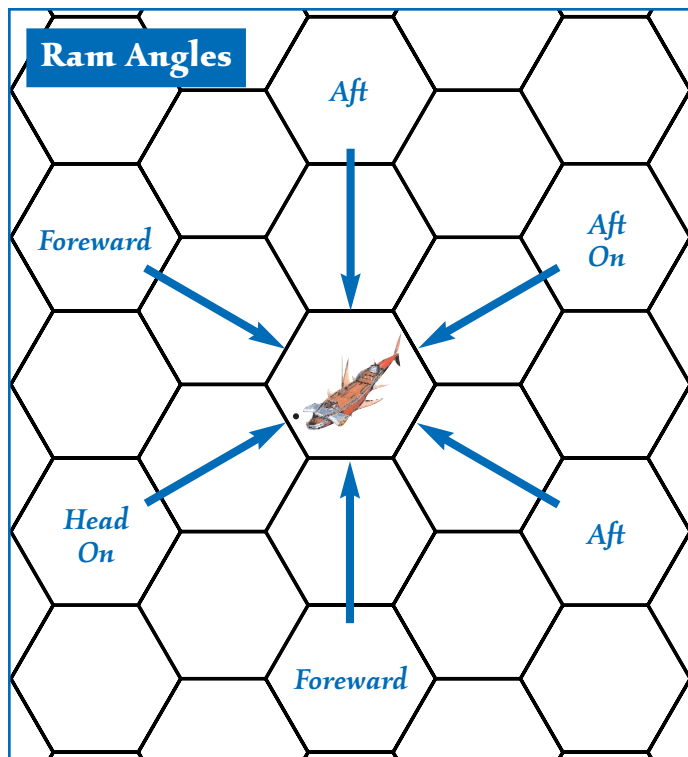
This may be further modified by the move action the attacking ship is currently taking. Ramming can also result in a critical failure, also detailed below.

Characters and Ramming

Ramming a ship is part of a ship's movement, and thus the actions of those involved are the same. See Movement, above.

Ram Damage

When one ship rams another both ships may take damage. The base damage an attacker does to his target with a piercing or blunt ram is twice the ship's tonnage. The base damage *the attacker takes from ramming* a ship is equal to the target ship's hit points before it was rammed. It is possible for the ramming ship to reduce this damage via a successful piloting roll.

The speed of the two ships is important when figuring damage. The speed of the ramming ship is either the number of points it spent on forward movement last round, or the number of points it spent this round, whichever is better, minus any speed points used to change facing thus round. This is unless the attacking helmsman wishes to actually reduce his speed before ramming. The speed of the target ship is the number of points it spent on forward movement last round.

The angle at which the ship rams its target determines the total damage done to both the attacker and the defender:

Head On: Damage to the target is equal to base damage, multiplied by the attacker's speed plus the defender's speed. The defending ship automatically gets a counter-ram attempt against the attacking ship, if it has a ram and an active helm. The attacking ship takes twice the base damage from ramming. A successful maneuver roll against DC 30 reduces this by half.

Forward: Damage is equal to base damage, multiplied by the attacker's speed plus one half of the defender's speed. The
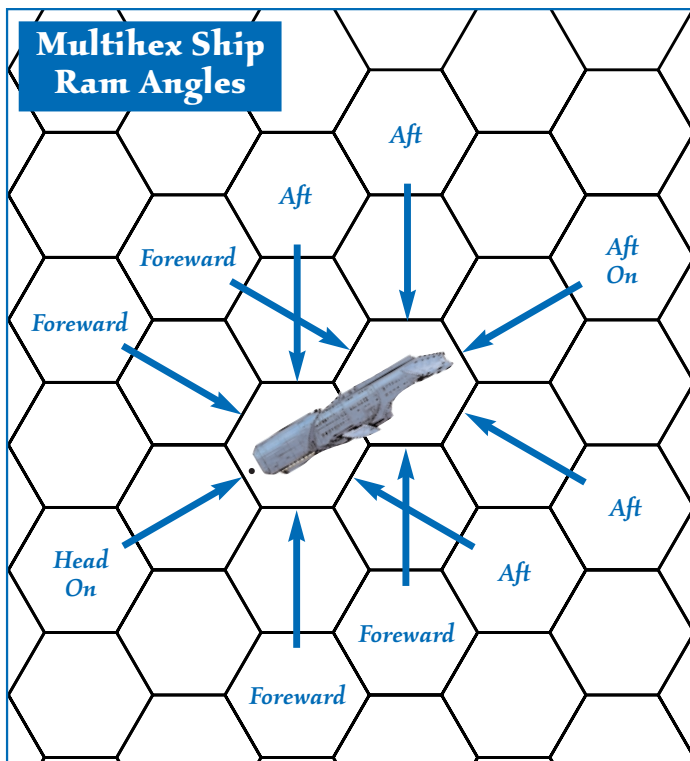
attacking ship takes base damage from ramming. A successful maneuver roll against DC 25 reduces this by half.

Aft On: Damage to the target is equal to base damage, multiplied by the attacker's speed minus the defender's speed. The attacking ship takes one-half base damage from ramming. A successful maneuver roll against DC 15 reduces this to zero damage.

Aft: Damage is equal to base damage, multiplied by the attacker's speed minus one half of the defender's speed. The attacking ship takes one-half base damage from ramming. A successful maneuver roll against DC 20 reduces this by half.

Hardness is subtracted from all ram damage as normal, but always use the hardness of the frame.

Any time a ship being rammed is reduced to zero hit points the attacking ship takes half the normal damage he would otherwise take, reduced to zero if the maneuver roll is successful.

Counter-Ramming
Ramming a ship from the head on angle can be very risky; the target may be able to position itself to ram you at the same time, which is called a counter-ram. It counts as a head on ram, and is resolved normally. If both hit, both take the damage the other inflicts, plus the damage for ramming someone. This makes head on rams very dangerous.

Cover and Concealment
These two situations can hinder a ram attack just as it would an attack from a ship weapon. See the rules in the Ship Weapons section, above.

Piercing Ram
An attack from a piercing ram puts a hole in the other ship, possibly deep into its interior. The damage from this is assumed in the ram damage, but it can have additional ramifications as well. The DM determines where the hole is, based on the angle of attack, then uses this to judge any additional effects based on the situation. Anyone who might be adversely affected by this can make a Reflex save against DC 14 to either avoid the effects or at least reduce any damage.

When ramming with a piercing ram the two ships may become locked together. If the helmsman wishes to lock the two ships, he should make a Pilot Spelljammer roll against DC 15. Success means the ship has grappled the target as if the ship had a grappling ram. Unlike normal grapple rams, the helmsman must make a Pilot Spelljammer roll to unlock the two ships, equal to DC 25. He can try each round. If the helmsman does not want the ships to lock he needs to make a Pilot Spelljammer roll against DC 20. Success means the ship is still stopped, but the ship is now floating next to the other ship, not locked with it. Otherwise, the two are grappled. See Grappling Rams, below, for more on grappling.

Like a critical hit, an attack from a piercing ram can cause spelljammer shock to the helmsman. Follow the rules above in the Ship Weapons section. This makes critical hits from a piercing ram especially harsh.

Blunt Ram
An attack from a blunt ram severely shakes the target ship, and anyone on board the target ship stands a chance of falling. Each person on board the rammed ship must make a Reflex save against DC 15 or fall prone.

Like a critical hit, an attack from a blunt ram can cause spelljammer shock to the helmsman. Follow the rules above in the Ship Weapons section. This makes critical hits from a blunt ram especially harsh.

Recovering from a Ram
When one ship rams another both may be thrown off balance. Both ships must make a new maneuver roll for the maneuver they were taking when the ram occurred. If the target ship is reduced to zero or less hit points the attacking ship rolls at +5, and, of course, the destroyed ship need not bother rolling. If either ship fails this roll their current move action becomes fail, with all corresponding penalties.

When one ship rams another both ships come to a stop, unless the ramming ship reduces its target to zero hit points, in which case it can move throw normally.

Critical Hits
Ramming a ship with a blunt or piercing ram can result in a critical hit. Rams threaten on a 20, and do ×2 damage.

Crew Damage
Ramming a ship can harm or kill its crew members, especially those below decks. The DM will need to decide where the ram strikes the ship, based on the angle of the ram and the layout of the ships. Anyone within 15 feet of this location must make a Reflex save (DC 14) or take 5d6 damage, with a successful save resulting in half damage. Anything farther out but within 30 feet must make a Reflex save (DC 12) for 3d6, with a successful save resulting in no damage. Anyone on an open deck saves at +4.

If the target ship is reduced to zero hit points the damage is doubled, and there is a path through the ship rather than an impact point, and anyone within range of the path is susceptible to damage. Also, anyone who is within 15 feet of the path may fall off the ship if they do not succeed at a Reflex save against DC 14.

If the ramming ship is reduced to zero hit points its crew may take the same damage, with the point of impact being where the helm connects to the ship.

Crashing

A ship does not need a ram in order to ram into another ship. Such attacks are crashes. Crashes can also occur accidentally due to poor maneuvering or unseen obstacles.

A crash works the same as a ram attack, except both ships take damage as if they were the attacker, rather than one of them being the defending ship.

Grappling Rams

A ship using a grappling ram on another ship works a lot like a person trying to grapple another person. It is a contest of maneuver rolls, both modified by size. The defending ship gains a +10 bonus to this roll.

If the grappling ship manages to get ahold of its target it can then move both ships around, as long as its helm can move a ship equal to the combined size of the two ships. Forces from both ships can also board the enemy ship.

The ship that initiated the grapple can withdraw its grappling ram, which requires 1 round, after which either ship can move away from the other.

If the target ship is the same tonnage or smaller than the grappling ship, it can try to escape from the grapple. This is a Pilot Spelljammer roll rather than a maneuver roll. The DC is based on the size of the two ships and the materials the grappling ram is composed of, as shown on Table XXX.

Table XX: Escape DC	
Grapple Ram Material	**DC**
Bone	18
Wood	20
Ceramics	18
Iron Wood	20
Dark Wood	20
Stone	22
Crystal	22
Ætherstone	22
Iron	24
Flowsteel	24
Pyre Iron	24
Mithril	24
Adamantine	24
Grappler* is 1 size larger	+2
Grappler* is 2 sizes larger	+0
Grappler* is 3 sizes larger	–2
Grappler* is 4+ sizes larger	–4
* This refers to the grappling ram's capacity, not the grappling ship's size.	

If the pilot succeeds, but does not succeed by 10 or more, he tore away some of their rigging during the escape. If he succeeds, but not by at least five, he tore away all their rigging, giving them none. If he succeeds by five but by less than ten he might have tore away some rigging. Minimal rigging is unaffected, but all other types become minimal, though they crew requirements do not

not change. When the pilot succeeds on his roll to escape he can decide to not escape and try another round or use his roll and escape. Thus, the pilot can tell he is about to destroy some of the rigging and ease off.

If the pilot fails his roll by five or more he may tear away rigging anyway. If he failed by ten or worse, he tore away all their rigging, giving them none. If he failed by five or more but less than ten they might have tore away some rigging. Minimal rigging is unaffected, but all other types become minimal, though the crew requirements do not change.

If the grappling ship is smaller than the target ship, the target ship cannot escape. Because the gravity of the larger ship overrides the gravity of the smaller ship, they are considered one larger ship. Even if the helm of the target ship is capable of moving a ship of their new combined size, the smaller ship will simply move with it. In order to remove the smaller ship the grappling will have to be cut away, or the crew will have to overtake the smaller ship and retract the grappling ram.

Shearing Attacks

A common tactic for smaller warships is to mount blades on the hulls—known as rigging shears—that can be used to cut away sections of rigging on enemy ships, making them less maneuverable. These attacks are called shearing attacks.

Using rigging shears is surprisingly easy when compared to a ram, since the armour of the ship usually won't help much, but it does have the drawback of exposing the ship to its target's ship weapons.

Procedure

In order to make a shearing attempt the ship must have rigging shears, and the target ship must have rigging. To make a shearing attempt the attacking ship passes over the target, entering its hex. Shearing attacks are opposed maneuver rolls, modified by the move action of the attacker (ram) and the defender (defense). Defenders with solid rigging gain a +5 bonus to this, as do defenders with a portion of their rigging mounted internally

If the attacker meets or exceeds the defender's roll, he has managed to shear away some rigging. The results of a shearing attack depend on the ship's current rigging type. If the ship has minimal, it drops to none (i.e. its hit points is reduced to zero). All other types drop to minimal (i.e. they take damage equal to one half their rigging's maximum hit points). The ship's MC is modified appropriately. The new effective type is used if the ship is successfully sheared again. Thus, two successful shearing attacks against any ship susceptible to such attacks will drop it to none. This change to the effective rigging does not reduce the number of men required to operate.

There are two drawbacks to shearing. First, passing over the ship in the attempt makes the attacker vulnerable to attack. Any attacks made by the defending ship against its shearing attacker are at +3 to hit when the ship is in its hex, although not before or after. The second drawback is that shearing attacks may throw off the maneuvering of the ship. If the shearing attack is successful, they need to make a maneuver roll for their current

move action. If this roll is successful nothing happens, otherwise their move action immediately switches to fail.

Cover and Concealment

These two situations can hinder a shearing attack just as it would an attack from a ship weapon. See the rules in the Ship Weapons section, above.

Shearing Without Shears

It is possible for a ship without rigging shears to try and pull away another ship's rigging, but it is more difficult and possibly dangerous. The procedure works as normal, but the attacking ship has a penalty of five to its roll. If the attacking ship fails by 10 or more, it managed to shear away some of its own rigging, as if had just had a successful shearing attack on it.

Ships and Damage

The hit points of a ship work in the same manner as hit points for characters, but they do not tell the whole story of the ship's durability. The hit points listed for a spelljamming ship are actually one-third of the ship's total hit points. That is, the ship has three times the listed number of hit points.

The reasons a ship has only one-third of its total hit points listed is because of the helm. An active spelljamming helm creates a field around the vessel that moves the ship through space. This field puts stress on the ship, in the same manner an ocean puts stress on a seagoing vessel. This stress is what is felt by the rigging crew and used to intuit the direction the helmsman is trying to move. While this stress does not feel significant to those aboard, it is exerts considerable force on the ship the helm is connected to.

When a ship with an active helm is reduced to one-third its total hit points, the stress of the helm field overwhelms the structural durability of the ship, and the ship breaks up into several smaller pieces, and the helm then automatically shuts down.

Because most ships operate in combat via an active helm, the first third of the ship's hit points are the most important and are tracked separately. This is what the listed hit points for a ship represent. If a free-floating ship took more than one-third it's total hit points, it would not break up, since it does not have an active helm. If a helm was linked to the ship and activated before the ship was repaired, the ship would immediately break up.

Ships that break up because of the helm end up in 2d4 chunks, each with an equal portion of the ship's tonnage and remaining hit points, except for the chunk that holds the helm, which receives the brunt of the stress damage from break up, and has only enough hit points to keep it barely holding together.

It is possible to move the helm from its original fragment onto another and use that as a ship. Such fragments have an MC appropriate for their new size, but have the poor form and no rigging, worsening their MC by three. They also suffer –3 to AC.

Ships and Saving Throws

Normally, attended objects use their user's saves and unattended objects automatically fail their saves. But, while ships are objects,

their saves work differently. Ships have both Reflex and Fortitude saves.

A ship can make Reflex saves as long as the ship is taking a move action other than forward, still, rotate, or fail. A ship's Reflex save is a maneuver roll, but the DC for the save is +20; it is quite difficult for a ship to make most Reflex saves. Add the ship's defense bonus to the roll.

Ships make Fortitude saves based on the section of the ship that is targeted and the materials that section is made of. Anything targeting the decks is based on the hull material. Anything that targets the outer hull is based on the plating or hull material, whichever is better. Anything that targets the inside of the ship is based on the frame materials. The Fortitude save for any given material is equal to its hardness. Thus wood, with its hardness of 5, have a Fortitude save of +5.

Damage From Spells and Personal Weapons

Attacks against ships from personal weapons or most spells tend to do much less damage than ship weapons. Ships are objects, and as such take less damage from certain types of attacks. They are immune to critical hits from anything but ship weapons and ramming, as well as any form of subdual damage. Ships take half damage from ranged personal weapons, acid, fire and electricity; divide the damage by 2 before applying the object's hardness. Cold attacks deal one-quarter damage to objects. Sonic attacks deal full damage to objects.

Some forms of personal ranged weapons will do normal damage, do to size or other factors, as determined by the DM. An example is a rock thrown by a giant.

Fire

Most ships in Arcane Space are made of wood, and unfortunately wood burns. Even stone and metal can burn when hit from a hot magical fire. Any time a ship takes damage from fire, it may start to burn. A burning ship continues to take damage, and the fire creates smoke that pollutes the ship's air envelope. Being caught in the middle of the void on a burning ship is a nightmare many spacefarers have.

When a ship takes fire damage it needs to make a Fortitude save, based on the materials where the fire struck. If it struck on the decks, use the hull material. If it struck inside, use the frame materials. If it struck the outer hull, use the plating materials. The DC of the save is based on its source. Spells use their normal DC. Anything other than a spell that does not have a listed DC should use the DC of similar spell. Stone and metal ships gain a +10 to this roll, except for pyre iron (it is immune to catching on fire) and flowsteel, which gains only a +5. If this save is made the fire does its damage as normal, but then peters out and the ship does not catch on fire. If the save is failed the ship has caught on fire. Each subsequent round the ship takes damage equal to the damage last round from fire, plus two. The reduction of damage from being an object and hardness is then applied.

For example, a wooden ship is struck by a *fireball* that does 30 points of damage and fails its Fortitude save, and so is now on fire. On the second round the fire does 32 points of damage,

which is halves to 15, then the ship's hardness reduces this to 10. On the third round it does 34 (reduced to 11), and so on.

In addition to damaging the ship, fire also burns up breathable air and pollutes the air envelope. Every five points of fire damage reduces the ship's current air supply by one man day.

The crew of the ship can try and put a fire out. The two standard methods are smothering and water. Smothering works well for smaller fires, but once a fire gets a certain size it is useless. Water works against all sizes of fire, but getting water to the fire may be difficult.

In order to smother a fire the crew must have access to something to smother with. This can be things such as extra sails, blankets, cargo canvas and so on. The DM will determine what is available and how long it will take to get it to the fire. Every round of smothering a fire reduces it by five points of damage. Smothering does not work at all against fires who are currently doing 50 points or more per round.

Each standard bucket (four gallons) of water put on a fire reduces its damage by a point. When possible most crews set up bucket brigades between the fire and the water, allowing them to put three buckets per line on a fire per round. This assumes one man per five feet between the fire and the water. Someone with a bucket and standing next to a water source can do the same thing. For characters running back and forth to the fire and water, consider both dipping a bucket and throwing it on the fire free actions, though dipping it in the water does provoke an attack of opportunity.

Often worse than the ship catching on fire is when the rigging goes up in flames, especially if that rigging is sails. Sails have a Fortitude save of +0 and solid rigging has a Fortitude save equal to the hardness of the hull material (or frame material if it has no hull).

If the rigging is on fire it burns just like the ship would. When standard, terrestrial or topped-out rigging is reduced to half its hit points it becomes effectively minimal rigging, with the same crew requirements. Minimal rigging reduced to zero becomes none. Any time a ship's rigging is reduced the ship must make an immediate maneuver roll for its current move action. Once the rigging is destroyed the fire begins to do its damage to the ship.

Putting out fires on the rigging can be vey difficult, especially for sails; it is hard to get water up into the rigging above. Solid rigging is often designed in a manner than makes it easier to get to. The DM will need to judge the difficulty of putting out a fire in rigging—if it is even possible. For most fires in sails assume that it takes four buckets per point rather than one. Solid rigging is is often the same as for the rest of the ship (one bucket per point).

Character Actions

Throughout the rules there have been details on how the actions of the characters translate into ship actions. But, not all character actions in ship combat are also ship actions. Examples include casting spells on enemy ships (or your own ship), moving about on a ship, or attacking others on the same ship.

Characters and Initiative

In ship combat all characters on board a ship act on that ship's initiative. Normally the order in which they act is determined by those on board, as long as they all agree. For example, there are two weapon crews with weapons ready to fire this round, two spellcasters who wish to cast spells this round, and a crewman who wishes to get to the helm room to talk to the helmsman. As long as all of these characters agree, they can act in whatever order they wish.

If the order of action is not in agreeance, initiative is rolled. This *secondary initiative* is separate from the initiative of the overall ship combat. Secondary initiative is resolved on each ship's initiative. If a character goes from one ship to another he may have to reroll for his secondary initiative on the new ship.

For example, a sorcerer teleports over to the deck of an enemy ship on his own ship's initiative. On the initiative of his new ship, he wants to start killing off its crew with fireballs. Because the enemy crew wants to stop him before he does damage, secondary initiative is rolled. This secondary initiative is resolved on that ship's initiative.

If a character is not part of a ship, and is capable of acting, he will have a ship initiative of his own. If he left a ship and is in space on his own, on subsequent rounds his initiative is equal to the initiative of the ship he left, plus his Dexterity modifier. If this ties with another ship, use the ship's maneuverability modifier versus the character's Dexterity modifier to break the tie. If there is still a tie, flip a coin. If the character boards a ship his initiative becomes the same as the ship he boarded.

Affecting Targets on Other Ships

There will be times when a character wishes to do something that affects the people on another ship, such as targeting them with spells or personal ranged weapons. Most such attacks are resolved normally, with the distance between ships being the most common complication.

A ship is normally considered to be in the center of its own hex at all times. Thus, for example, when one ship is one hex away from the other, it is 150 feet away. If the ship is in the same hex as another ship, the actual distance can vary, depending on the desire of the helmsman. See Stacking, in the Movement section.

Using personal ranged weapons against the crew of another ship uses the normal rules, taking into account the range and potential cover a target might have. In addition, the target gains any bonuses to AC that the ship gains from cover or its move action, though it does not suffer any AC penalties the ship gains from move actions. For example, full defensive gives the ship a +4 to AC, and all characters aboard the ship also gain this bonus, but characters aboard a ship do not suffer the -4 penalty to AC from the still move action. Characters aboard a ship suffer the penalties to hit that their ship suffers due to size, unless their own ship is not moving.

The above applies to spellcasting as well, if it is a factor for a given spell. Otherwise spellcasting works as normal.

Affecting Other Ships

It is rarely worth the bother for a character to attack a ship with personal ranged weapons, but casting spells against enemy ships is common.

Targeting an enemy ship with a spell is not any different than targeting a creature. Spells that automatically hit creatures automatically hit ships, such as *magic missile*. Area effect spells targeted on a ship also hit automatically, unless they require an attack roll. Ranged touch attacks work as normal; all bonuses from hull and plating are armour bonuses, and do not apply. Bonuses from move actions are dodge bonuses and do apply.

Attacking a ship with ranged weapons works as if the ship was a creature with the given AC, including defense bonuses from the ship's move action.

Whenever a creature targets a ship with either spell or weapon they receive a bonus to hit based on their size. This size is their ship size, not their creature size. Each creature size has a corresponding ship size. See Table XXX. For example, a halfling wizard wishes to hit a ship with a ranged touch spell. Halflings are small, and Table XXX shows that small creatures are equal to very fine ships, which grants a +16 to hit.

Grappling and Boarding

Ships are expensive, and when they clash the victor often takes the other ship as its prize. Because of this, boarding actions are quite common in space. It allows marines and other crewman—an expendable and replaceable resource—to take the brunt of the damage in ship combat.

In order to board another, ship both ship's must be relatively stationary; both ships must not be moving, or one ship must be grappled with another. There are three ways to grapple another ship: grappling ram, piercing ram and crew grappling. Grappling and piercing rams are covered in previous sections.

With the right tools a ship's crew can grapple another ship. This involves strong rope and grappling hooks. The crew stands ready with the rope and hooks, then the ship moves up next to the target vessel. Getting next to a an enemy like this is not easy, since the ship will typically move away. In order to bring a ship close enough to grapple the attacking ship needs to succeed in a contest of maneuver rolls. The attacking ship adds its attack modifiers from its move action, and the defender adds its defense modifier from its move action. Failure means the defending ship manages to stay out of range of the grappling hooks.

Getting a grappling hook to properly grapple the ship is a ranged attack against the ship's AC. Ship's with minimal rigging gain a +1 to AC, while a ship with no rigging gains a +2. Ships with partial enclosure gain an additional +1 to AC, and ships with full enclosure gain an additional +2. Five or more ranks in Rope Use allows for a +2 synergy bonus. There is no non-proficient penalty for using a grappling hook in this manner. When trying to grapple a mobile ship the crew typically take ready actions in order to throw their grapples.

With a successful hit the grappling is lodged somewhere on the enemy ship. The crewman or someone assisting him must tie off the rope to a strong point on the ship. Most ships have strong points up and down its sides in order to tie off to docks, so this is typically not a problem. If the crewman has five or more ranks of Rope Use he can do a quick but adequate tie off as a free action that provokes an attack of opportunity. Otherwise it is a move action. The grapple is not considered successful until it is tied off. A crewman can also throw a grapple whose rope is already tied off, but this makes it more difficult, giving a –4 to hit.

In order to reign in the other ship they must have a number of successful grapples equal to the maximum speed of the ship, plus one. Otherwise the ship can tear away on its next turn, breaking the ropes.

The crew on the enemy ship can cut the ropes if they have a cutting weapon available and have the time. This is why most ships who are about to grapple have crewman ready to swarm over onto the enemy ship, to eliminate the opportunity for them to do so. Cutting a rope follows the normal rules for attacking objects.

Boarding a ship is typically straightforward. The men on one ship move over to the other. This can sometimes be complicated by the position of the two ships, and getting to the enemy ship may require jumping, climbing or both. This makes hooked boarding planks common.

Loss of Crew

Losing crew members on a ship can have serious repercussions. Losing riggers reduces the maneuverability, losing weaponeers reduces firing times and losing the helmsman renders the ship immobile.

Weaponeers: For every man under the listed crew, add one to the reload time, down to a minimum of one man.

Riggers: Whenever a rigger is lost, recalculate the the average of the crew's Operate Rigging skill, with each lost man's skill equalling zero. For example, a ship that requires six men to function loses two men. The other men have skills of +10,+10,+8 and +12. This totals to +40, divided by six, for an average of +6. This is then averaged with the helmsman's Pilot Spelljammer skill.

Any time a ship does not have enough working riggers to meet the minimum requirement, the ship cannot take 10 on any maneuver rolls.

Helmsman: If the helmsman dies or is rendered unconscious, the ship comes to an immediate stop.

If someone is standing by to step into a lost man's position the detrimental effects might be reduced or eliminated, though the ship always suffers at least one round of the detrimental effects.

Skills

Operate Rigging [Dex, Trained Only]
Pilot Spelljammer [Int, Trained Only]

Feats

Ship Weapon Proficiency [General]
Choose a type of ship weapon from the following list: accelerator, ballista, bombard, great bombard, catapult, fire projector, jettison, or stone thrower. You understand how to use that type of ship weapon in ship combat. This applies to all sizes of ship weapons, should that type come in multiple sizes.

Prerequisite: 1+ ranks of Profession (ship weaponeer).

Benefit: When leading a ship weapon crew you do not suffer the –4 non-proficiency penalty to attack rolls.

Special: You can gain this feat multiple times. Each time you take the feat, it applies to a new weapon.

Ship Weapon Focus [General]
Choose a type of ship weapon you are proficient with from the following list: accelerator, ballista, bombard, great bombard, catapult, fire projector, jettison, or stone thrower. You are especially good at using this weapon. This applies to all sizes of ship weapons, should that type come in multiple sizes.

Prerequisite: Proficient with weapon and 4+ ranks of Profession (ship weaponeer).

Benefit: When you lead a ship weapon crew, that weapon gains a +1 to hit.

Special: You can gain this feat multiple times. Its effects do not stack. Each time you take the feat, it applies to a new weapon.

Ship Weapon Specialization [General]
Your precise aim with a ship weapon allows you to do additional damage.

Prerequisite: Ship Weapon Focus with weapon, 7+ ranks in Profession (ship weaponeer).

Benefit: When you lead a ship weapon crew and are within the normal listed range for the weapon, that weapon gains a +10 to damage.

Special: You can gain this feat multiple times. Its effects do not stack. Each time you take the feat, it applies to a new weapon.

Improved Ship Weapon Critical [General]
Choose a type of ship weapon from the following list: accelerator, ballista, bombard, great bombard, catapult, fire projector, jettison, or stone thrower. With that weapon you have a knack for finding the weak spot on target ships. This applies to all sizes of ship weapons, should that type come in multiple sizes.

Prerequisite: Ship Weapon Focus with weapon, 11+ ranks in Profession (Ship Weaponeer).

Benefit: When you lead a ship weapon crew, that weapon's threat rating is doubled.

Special: You can gain this feat multiple times. Its effects do not stack. Each time you take the feat, it applies to a new weapon.

Ship Weapon Loader [General]
Choose a type of ship weapon from the following list: accelerator, ballista, bombard, great bombard, catapult, fire projector, jettison, or stone thrower. With that weapon you are especially fast at loading. This applies to all sizes of ship weapons, should that type come in multiple sizes.

Prerequisite: 4+ ranks of Profession (Ship Weaponeer).

Benefit: When you lead a ship weapon crew, that weapon's reload time is reduced by one.

Special: You can gain this feat multiple times. Its effects do not stack. Each time you take the feat, it applies to a new weapon.

Ramming Focus [General]
You are especially good at ramming.

Prerequisite: 4+ ranks in Pilot Spelljammer.

Benefit: You gain a +1 bonus to hit on any ramming attempt.

Ramming Specialization [General]
You know where to ram a ship where it counts most.

Prerequisite: Ramming Focus and 7+ ranks in Pilot Spelljammer.

Benefit: When ramming you figure your base damage as if your ship is 5 tons larger.

Ramming Expert [General]
You know how to avoid damaging your own ship when ramming.

Prerequisite: Ramming Focus and 12+ ranks in Pilot Spelljammer.

Benefit: You gain a +5 bonus to all maneuver rolls to avoid damage to your own ship when you are ramming.

Evasive Maneuvers Focus [General]
You have a knack for optimizing your defenses when using evasive maneuvers.

Prerequisite: Skill Focus (Pilot Spelljammer), 6+ ranks in Pilot Spelljammer.

Benefit: When piloting a spelljamming vessel and using the defensive move action, your defense bonus is +3 to AC rather than +2. When taking the full defensive move action the bonus is +6 rather than +4.

Evasive Maneuvers Expert [General]
You know how to make it easier for your own ship weapons to attack while maneuvering evasively.

Prerequisite: Evasive Maneuvers Focus, 12+ ranks in Pilot Spelljammer.

Benefit: When piloting a spelljamming vessel and using the defensive move action, reduce your penalties with ship weapon attacks and ramming by 1. When taking the full defensive move action reduce the penalties by 2.

Typical Rigging Crews

Green Rigger, Exp1: CR ½; Medium-size Humanoid (varies); HD 1d6+1; hp 5; Init +1; Spd 30 ft; AC 11 (+1 dex); Melee dagger +0 (1d4/19-20/x2); AL varies; SV Fort +1, Ref +3, Will +0; Str 11, Dex 12, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +3, Climb +3, Gamble +2, Intimidate +2, Jump +3, Knowledge (Arcane Space) +2, Operate Rigging +4, Profession (Heavy Weaponeer) +2, Speak Language +2, Use Rope +4; Skill Focus (Operate Rigging).

Novice Rigger, Exp2: CR 1; Medium-size Humanoid (varies); HD 2d6+2; hp 9; Init +1; Spd 30 ft; AC 11 (+1 dex); Melee dagger +1 (1d4/19-20/x2); AL varies; SV Fort +1, Ref +4, Will +0; Str 11, Dex 12, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +4, Climb +4, Gamble +2, Intimidate +2, Jump +3, Knowledge (Arcane Space) +3, Operate Rigging +6, Profession (Heavy Weaponeer) +2, Speak Language +2, Use Rope +5; Skill Focus (Operate Rigging).

Experienced Rigger, Exp3: CR 2; Medium-size Humanoid (varies); HD 3d6+3; hp 14; Init +1; Spd 30 ft; AC 11 (+1 dex); Melee masterwork dagger +3 (1d4/19-20/x2); AL varies; SV Fort +2, Ref +3, Will +1; Str 11, Dex 12, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +4, Climb +5, Gamble +3, Intimidate +3, Jump +3, Knowledge (Arcane Space) +4, Operate Rigging +7, Profession (Heavy Weaponeer) +4, Speak Language +2, Use Rope +5; Skill Focus (Operate Rigging), Ship Weapon Loader (varies).

Veteran Rigger, Exp6: CR 5; Medium-size Humanoid (varies); HD 6d6+6; hp 27; Init +1; Spd 30 ft; AC 11 (+1 Dex); Melee masterwork dagger +5 (1d4/19-20/x2); AL varies; SV Fort +3, Ref +7, Will +2; Str 11, Dex 13, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +3, Climb +7, Gamble +4, Intimidate +4, Jump +5, Knowledge (Arcane Space) +7, Operate Rigging +10, Profession (Heavy Weaponeer) +4, Speak Language +3, Use Rope +7; Skill Focus (Operate Rigging), Ship Weapon Loader (varies), Ship Weapon Proficiency (varies).

Expert Rigger, Exp9: CR 7; Medium-size Humanoid (varies); HD 9d6+9; hp 41; Init +2; Spd 30 ft; AC 12 (+2 Dex); Melee masterwork dagger +7 (1d4/19-20/x2); AL varies; SV Fort +4, Ref +8, Will +3; Str 11, Dex 14, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +8, Climb +8, Gamble +6, Intimidate +6, Jump +6, Knowledge (Arcane Space) +10, Operate Rigging +14, Profession (Heavy Weaponeer) +6, Speak Language +4, Use Rope +10; Skill Focus (Operate Rigging), Ship Weapon Loader (varies), Ship Weapon Proficiency (varies), Ship Weapon Focus (varies).

Master Rigger, Exp12: CR 11; Medium-size Humanoid (varies); HD 12d6+12; hp 54; Init +2; Spd 30 ft; AC 12 (+2 Dex); Melee masterwork dagger +10 (1d4/19-20/x2); AL varies; SV Fort +5, Ref +10, Will +5; Str 11, Dex 15, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +10, Climb +10, Gamble +7, Intimidate +7, Jump +8, Knowledge (Arcane Space) +13, Operate Rigging +17, Profession (Heavy Weaponeer) +7, Speak Language +5, Use Rope +12; Skill Focus (Operate Rigging), Ship Weapon Proficiency (varies), Ship Weapon Loader (varies), Ship Weapon Focus (varies), Ship Weapon Specialization (varies).

Grand Master Rigger, 15: CR 14; Medium-size Humanoid (varies); HD 15d6+15; hp 68; Init +3; Spd 30 ft; AC 13 (+3 Dex); Melee masterwork dagger +12 (1d4/19-20/x2); AL varies; SV Fort +6, Ref +12, Will +5; Str 11, Dex 16, Con 12, Int 10, Wis 10, Cha 10.

Skills and Feats: Balance +13, Climb +12, Gamble +9, Intimidate +9, Jump +9, Knowledge (Arcane Space) +16, Operate Rigging +21, Profession (Heavy Weaponeer) +9, Speak Language +5, Use Rope +14; Skill Focus (Operate Rigging), Ship Weapon Loader (varies), Ship Weapon Proficiency (varies), Ship Weapon Focus (varies), Ship Weapon Specialization (varies), Improved Ship Weapon Critical (varies).

Weapons

Standard Turret

Turrets are used to rotate a weapon into a new firing arc. It takes one man one round to rotate a light weapon into a new arc. It takes one man two rounds, or two men one round for medium and ship weapons. This can be done during reloading, but men rotating the turret cannot also assist in reloading. A standard turret costs 750 gp.

Free Turret

Invented by the gnomes, a free turret is a framework that a weapon is set in that allows the weapon to be pivoted into a wide range of positions, and includes counterbalances for the weight of the weapon, making it fairly easy to move even large weapons. When mounted in a free turret the weapon is considered to be on a ship two sizes smaller when determining attack penalties due to ship size. They also have the benefits of a normal turret, without the drawbacks of requiring extra men or time to reposition; a free-turreted weapon can be postioned to any available firing arc as a free action.

The downsides of a pivot turret are price and fragility. Free turrets add 5,000 gp to the cost of a weapon, and must be built into the weapon; you cannot add a free turret to a weapon later. Second, if the weapon takes half or more damage it is non-functional ; the counterweight system is quite fragile and easy to throw off.

Free turrets will only work with ballsita, stonethrowers, bombards and accelerators.

Stonethrowers

These are a cross between a ballista and a catapult. They use the same firing mechanism as a ballista, but have a cup for holding a stone, like a catapult. Because of the weight of the stone they are not as fast and as accurate as a ballista, but do more damage.

Table XX: Ship Weapons

Weapon	Attack Bonus	Damage	Threat/ Critical	Crew	Reload	Tonnage	Range	AC	HP/ Hardness	Cost
Ballista										
Light	+4	1d3 x 5	x2	1	2	1	3 hexes	19	24/5	600 gp
Medium	+4	1d6 x 5	x2	2	3	2	3 hexes	19	48/5	1,200 gp
Heavy	+4	2d6 x 5	x2	2	4	3	3 hexes	18	72/5	2,400 gp
Stonethrower										
Light	+2	1d6 x 5	19-20/x2	2	2	1	2 hexes	19	24/5	700 gp
Medium	+2	2d6 x 5	19-20/x2	3	3	2	2 hexes	19	48/5	1,400 gp
Heavy	+2	3d6 x 5	19-20/x2	4	4	3	2 hexes	18	72/5	2,800 gp
Catapult										
Light	+0	2d6 x 5	x3	2	3	1	1 hex	19	24/5	800 gp
Medium	+0	3d6 x 5	x3	3	4	2	1 hex	19	48/5	1,600 gp
Heavy	+0	4d6 x 5	x3	4	5	3	1 hex	18	72/5	3,200 gp
Bombard										
Light	+2	2d6 x 5	18-20/x2	2	3	1	2 hexes	23	48/10	1,600 gp
Medium	+2	3d6 x 5	18-20/x2	3	4	2	2 hexes	23	96/10	3,200 gp
Heavy	+2	4d6 x 5	18-20/x2	4	5	3	2 hexes	22	144/10	6,400 gp
Jettison										
Light	+0	2d6**	***	1	2	½	1 hex	19	12/5	400 gp
Medium	+0	3d6**	***	2	3	1	1 hex	17	24/5	800 gp
Heavy	+0	4d6**	***	3	4	1 ½	1 hex	16	48/5	1,600 gp
Accelerator										
Light	+6	1d6 x 5	19-20/x2	1	0*	½	4 hexes	25	24/10	XXX gp
Medium	+6	2d6 x 5	19-20/x2	1	1	1	4 hexes	23	48/10	XXX gp
Heavy	+6	3d6 x 5	19-20/x2	2	1	1 ½	4 hexes	22	72/10	XXX gp
Fire Projector										
Light	+0	3d6	***	3	2	1	****	23	48/10	XXX gp
Medium	+0	4d6	***	4	3	2	****	23	96/10	XXX gp
Heavy	+0	5d6	***	4	4	3	****	22	144/10	XXX gp

* If two skilled men load the accelerator and one of the crew has the Heavy Weapon Loader (Accelerator) feat, they can load and fire a light accelerator twice per round.

** Jettisons never do damage to ships with hardness of 1 or better.

*** Neither jettisons nor fire projectors are capable of critical hits.

**** Fire projectors are close-range weapons. The attacking ship must be withing 25 feet of the target.

Table XX: Acceleration & Deceleration

Max Speed	1	2	3	4	5	6	7	8	9	10
Acc/Dec	1	2	2	2	3	3	4	4	5	5

Table XXX: Concealment

Degree of Concealment	Example	Miss Chance
1/4	Light Fog/Moderate Darkness	10%
1/2	Dense Fog at 150 feet	20%
3/4	Dense Dust	30%
9/10	Near Total Darkness	40%
Total	Total Darkness/ Blindness/Invisible Target/ Dense Fog at 300 feet	50%

Table XX: Ship Size By Tonnage

Ship Size	Tonnage	Attack/AC Modifier	Creature Equivalent
Very Fine	*	+16	Small
Fine	*	+8	Medium
Diminutive	*	+4	Large
Tiny	1-2	+2	Huge
Small	3-6	+1	Gargantuan
Medium	7-14	–	Colossal
Large	15-30	–1	
Huge	31-62	–2	
Gargantuan	63-126	–4	
Colossal	127+	–8	

* A helm cannot move a ship smaller than 1 ton.

Table XX: Maneuverability Class

	A	B	C	D	E	F	G	H	I	J	X
Free Turns	3	2	2	1	1	0	0	0	0	0	0
Turns/Hex	6	4	2	2	1	1	1/2	1/3	1/4	1/5	1/6
Maneuverability Modifier	+4	+2	+1	–	-2	-4	-6	-8	-10	-14	-20

Table XXX: Cover

Degree of Cover	Cover AC Bonus	Cover Reflex Save Bonus
1/4	+2	+1
1/2	+4	+2
3/4	+7	+3
9/10	+10	+4*
Total	–	–

*Half damage if save is failed; no damage if successful.

Table XX: Escape DC

Grapple Ram Material	DC
Bone	18
Wood	20
Ceramics	18
Iron Wood	20
Dark Wood	20
Stone	22
Crystal	22
Ætherstone	22
Iron	24
Flowsteel	24
Pyre Iron	24
Mithril	24
Adamantine	24
Grappler* is 1 size larger	+2
Grappler* is 2 sizes larger	+0
Grappler* is 3 sizes larger	–2
Grappler* is 4+ sizes larger	–4

* This refers to the grappling ram's capacity, not the grappling ship's size.