Airships

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Introduction

Flying ships are a popular element in fantasy fiction; the airship brings a fantastic element to the romantic notions of sea travel. While sailors of the sea enjoy a freedom few settled folk ever experience, those who sail the air are literally above the world, flying high over those who must spend their days crawling across the dusty surface.

This book allows you to introduce airships into your campaign, including everything from rules for constructing airships of your own, to systems for handling aerial combat, to information useful for aerial traders. Armed with what you find in these pages, you can open new horizons in your campaign, expanding your adventures from the earth to the sky and all points between.

What is an Airship?

An airship is a type of vessel designed to fly on currents of air. Though many take their basic form and design from seagoing ships, airships are powered by internal engines that lift them from the earth and push them across the sky, rather than being slaves to the wind or to ocean currents. These engines also make an airship incredibly fast, easily outstripping virtually any other form of transportation (except, of course, for *teleportation* and similar magic), making it ideal for traders and military operations—or adventurers who want to get from place to place quickly.

In This Book

Each section in this book provides a specific type of information about airships and their use in this campaign. Inside, you will find:

1. **Airship Construction:** This chapter presents the rules for building all types of airships, from simple wood-burning scout ships to bone barges powered by necrotic engines. Including information on hull materials, labor costs, weapon types, rigging, engines, and more, this chapter contains all that you need to build airships in your campaign.
2. **Airship Crews:** Once the airship is constructed, it needs a crew to get it into the air and keep it there. This chapter details the roles and responsibilities of the airship's crew.
3. **Aerial Movement:** Flying is not as simple as taking to the air and jetting around without a care in the world. This chapter provides the rules for flying an airship, including tactical and overland modes and the benefits and risks of exceeding the limits of an airship.
4. **Airship Combat:** Airships operate in three dimensions, flying over, around, and above one another as they struggle to survive a combat. In this chapter are new rules for elevated combat between airships and their crews.
5. **Aerial Overland Movement:** The sky is every bit as dangerous as the ocean, and this chapter informs prospective airship pilots of the dangers involved in taking to the air. Also, it can be quite easy to get lost when flying above the sky, and the navigation rules in this chapter govern finding your way and wandering off course.
6. **Aerial Equipment:** Airship crews need specialized tools to survive on the job. In this chapter are utilitarian devices such as tool tethers and signal flares, as well as more exotic equipment like the airman wings that allow sailors to glide from airship to airship.
7. **Aerial Trade:** One of the most valuable aspects of the airship is its ability to facilitate trade. Rules for running trade routes with your airship are found herein, giving the entrepreneurial character the needed information to make a fortune—or lose his shirt trying.
8. **Aerial Characters:** Life aboard an airship requires its own skills and expertise, and this chapter provides the feats, skills, and prestige classes tailored for just this purpose.
9. **Aerial Magic:** Magic is as useful in the air as it is on the ground, but your spells may operate a bit differently at 500 feet off the ground than you are used to when you are 500 feet *below* the ground. This chapter explores the aerial uses for existing spells and presents new spells and magic items for use in your aerial campaigns.
10. **Sample Airships:** Though chapter 1 gives you all the tools you need to build airships of your own, it is often useful to see some examples of those rules in action. This chapter provides you with these examples, from the swift and unarmed Elvish Cloudleaper to the ponderous and devastating Dwarven Waraxe.

plus...

A. **An Airman's Lexicon:** Members of any profession or lifestyle develop jargon to describe common things in their daily work. This appendix closes out the book with a short lexicon of terms and definitions in common use aboard airships.

Airship Construction

Building an airship is a difficult, time-consuming process. Simply crafting the hull can take months, and properly integrating the engines and arcane wheels with the rest of the ship is a process best left to the experts. Still, to a group with enough cash and a big enough thirst for adventure, building an airship might seem like an excellent idea.

This chapter provides all the necessary information needed to construct an airship, from crafting the hull, to the installation of the weaponry, to the ship's maiden voyage.

Tonnage

A broad measure of an airship's size is its tonnage. Each airship ton is equal to 1,000 cubic feet (a 10′ x 10′ x 10′ cube) of enclosed space on an airship, including any enclosed structures on the deck's surface. While an airship could be as small as one ton in size, no airships currently constructed are larger than 100 tons.

The tonnage of an airship is used to determine many of its pertinent game statistics. It is used to determine the minimum rigging required for flight, which in turn dictates the number of airmen and other crew required to keep the airship flying safely. Though fewer crew members could be aboard a vessel, the shortfall in manpower makes flights far more dangerous than is worth the savings on crew salaries. While an airship that has survived a battle is likely to attempt to fly back to port with a smaller crew than required, no airship captain is so foolish as to attempt to do so by choice. Given the cost of an airship, attempting to skimp on crew costs is rarely an investment that pays off.

Tonnage is also used to determine the size of the engine required to get an airship into the air and keep it flying—the difference between the engine's power and the vessel's tonnage dictates its maximum speed and acceleration. The size of a vessel also determines its base maneuverability, as larger ships are more difficult to maneuver and require greater effort to move about. All of this is explained in more detail later on, but you should be aware of these factors when determining the size and materials from which you wish to construct your airship.

Many components of airships, especially engines and weapons, have space requirements listed in tons. These do not add to the total tonnage of the airship, but are instead a measure of how many 10′ cubes the item occupies once it is installed.

It is important to remember that tonnage on an airship is not a measure of weight, but of volume. If for whatever reason you need to know how much your ship actually weighs, figure on average about 28,500 lbs. per airship ton, fully loaded, although weight varies drastically from ship to ship due to construction and materials.

Tonnage and Deck Plans

When determining the size of your vessel, it is sometimes difficult to imagine its dimensions, especially as airships are rarely shaped like the cubes pictured when thinking of tonnage. Deck plans are necessary to accurately envision an airship, and they are crucial when laying out the various components and elements of the ship. When drawing the plan, each deck should always be at least 10 feet in height. This accounts for the support structures and width of the planks or other materials used to construct the deck, while leaving room for crewmen to move about below decks without cracking their skulls on every doorway they pass through. This practice also makes things easier for you when you are mapping the airship, as you are working with 10 foot cubes, which are equal in volume to an airship ton. The 10′x10′x10′ method of mapping has been used throughout this book, and is the reason that most airship components take up 100 sq. ft. increments of floor space. While this method does not produce an accurate measure of the exact area of each portion of the ship, such as the slope of the airship's outer hull or other minutiae, it works very well for game purposes, allowing you to quickly map out an airship, providing a quick sketch that can later be turned into a detailed deck plan, suitable for use during ship-to-ship battles or boarding actions.

If an airship is going to see regular use, its map should be as detailed as possible so as to avoid confusion later. While it may not matter in day-to-day operation of the airship, in a combat it can be crucial to know just where the ammunition for the whirling ballista is in relation to the weapon itself. Trying to decide such details in the heat of battle not only breaks the mood, but can also lead to unnecessary disagreements during play. Laying out a deck plan keeps everyone on the same page and clearly illustrates how the different elements of the airship are related to one another.

Tonnage and Size Categories

The tonnage of an airship determines its size category. This, in turn, determines its basic maneuverability and Armor Class. **Table 1.1--Airship Size Categories** illustrates the various airship size categories, and details the appropriate statistics for each category.

Obtaining an Airship

Airships are expensive, and short of stealing or being given one, only remarkably wealthy individuals can get their hands on them. Not all characters in your game are likely to own their own airships, and most initial adventures should take place with the party serving upon someone

Airship Tons and Shipping Tons

Historically, a registered ton used for determining the size of a ship was equal to 100 cubic feet, which works out to an odd-sized cube a bit more than four and a half feet on a side—not terribly intuitive. For our purposes, then, the airship ton has been devised.

The airship ton is a much easier unit to work with when designing a deck plan and is the perfect size for d20 games, as the 10-foot cube is well known to players and GMs alike. Assuming an average deck height of 10-feet, this allows a deck plan to be laid out quickly and simply, using a rule of thumb that each ton of the ship takes up a 10 foot square of deck space.

Table 1.1—Airship Size Categories

Tonnage	Size Category	Maneuverability	Armor Class
Up to 2 tons	1 - Fine	2	18
3 tons to 5 tons	2 - Diminutive	2	14
6 tons to 10 tons	3 - Tiny	2	12
11 tons to 15 tons	4 - Small	1	11
16 tons to 20 tons	5 - Medium	1	10
21 tons to 30 tons	6 - Large	0	9
31 tons to 50 tons	7 - Huge	0	8
51 tons to 70 tons	8 - Gargantuan	-1	6
71 tons to 100 tons	9 - Colossal	-2	2
Each additional 50 tons*	10 - Colossal+	-1*	-4*

*These numbers are penalties to apply to the ratings for Colossal ships, not actual ratings. These penalties are cumulative. While there is no actual limit to the size of an airship, a point of diminishing returns is very quickly reached. As the size of an airship grows past colossal, the cost of the engine and the amount of gear needed to keep the ship maneuverable becomes impractical.

Tonnage: The total tonnage of the airship—while the hull is the primary determinant of an airship's tonnage, turrets and some deck structures can also add to this cost.

Size Category: The size category of an airship is primarily used when the comparative size of two airships is important, but exact tonnage is not. Ramming damage, for example, is based on size category.

Maneuverability: This number determines the maximum number of 45-degree turns an airship may make in a single round. A number of devices can improve a ship's maneuverability rating. See Chapter 3: Aerial Movement, for more information.

Armor Class: The size of an airship determines its basic Armor Class. Smaller airships are simply more difficult to hit than their larger counterparts. Armor Class is discussed in **Chapter 4: Aerial Combat**.

else's vessel. If the party survives long enough to acquire some wealth and experience, then perhaps it is time for a ship of their own.

If airships are common in your campaign, the easiest way for the party to acquire one is to purchase it used. When buying a used airship, one is limited to what is available, and the buyer must pay market price for all components. In this case, the GM should determine all of the features of the ship ahead of time (based reasonably upon what the characters are looking for), and should determine the ship's price based upon the total market value for all components. In this case, the sections of this chapter that detail labor costs and Craft checks should be ignored. The GM may allow the party to purchase and install some minor components, such as weapons, armor, or navigational aids after the ship has been bought, but the basics of the ship—tonnage, hull material, engines, and rigging—should not change.

If the characters have something very specific in mind, or if they cannot find any airships for sale, they may choose to build their own ship. In this case, the party can get exactly what they desire, assuming they have enough time and money to build it. For those who know what they are doing, building one's own airship is less expensive than buying it premade, however, inexperienced crafters can quickly stack up massive labor costs, sending a project way over budget. When building your own ship, you do not pay the market cost for the hull, rigging, or engine, but must instead navigate through the process of crafting the ship, requiring expenditures for materials, labor, and construction yards. Building a ship is no easy challenge, and those who can do so successfully often decide to go into the business full time, as the potential profits are not small.

Note that it is suggested that GMs not include the cost of an NPC's airship when gauging the amount of equipment he receives, otherwise the character ends up underpowered for his level.

Navigating this Chapter

Whether building or simply statting out a ship, you need to step through this chapter in a linear fashion. Start with the hull, then move through the sections one at a time, building the ship as you go. Use the ship examples provided in Chapter 10 as guides for your airship. Don't forget to purchase fuel, ammunition, and supplies, or your ship won't travel very far.

You need to walk through each of the following sections in order to complete your airship:

Airship Construction Yards: For those who want to construct their own ship, this section outlines labor and docking costs. Others may skip ahead to the hull.

The Hull: This is where you select and construct the basic frame of your airship.

Airship Engines: Information on how to build and install the engines that get your ship off the ground is given here.

Airship Templates: This section outlines several optional features that can be integrated into the ship's basic design for a variety of purposes.

The Rigging: Most airships use sails to provide power and maneuverability. This section explains how to install and configure the ship's sails.

Piloting Components: Select from a variety of devices that can be added to your ship to improve its handling.

Navigational Components: Presented here are a number of important navigational tools for your ship to help you find your way around.

Shipboard Weapons: This section helps you select the vital weaponry needed to protect your airship from harm.

Extras: Last but not least, choose here from a number of miscellaneous devices that can help give your ship the edge over the competition.

Mapping the Airship: Once you've got your ship put together, you'll need to prepare it for gameplay. Now all you need is a crew to fly the ship, which takes you on to Chapter 2.

Airship Construction Yards

You cannot build an airship in your basement. Ships up to the Small size category can be constructed without an airship construction yard, but any larger airship must be built in an appropriate facility. Construction yards are rated by the size of the airship they can build (limited by the size of their hull frames and lifting gear) and the number of airships they can build at any given time. Thus, an airship yard rated as Large (4) could have up to four Large ships under construction at any given time. An airship construction facility cannot cram two medium ships into the space of one large airship—each airship must be built on its own support frame, and the number listed in the airship yard's rating indicates the number of available frames.

All airship yards have enough employees, including overseers, foremen, and engineers, to work a single shift every day on each of the vessels the yard is capable of constructing at a given time. All workers in an airship yard only work one shift in a given day and are assumed to be of 'average' expertise (see Labor, below). This basic labor is included in the rental price of the airship yard. The individual or company commissioning the airship must bring in any extra or highly-trained laborers needed and pay for their salaries as detailed below.

Airship Construction Yard Rental Fees

Airship construction yards charge a flat rate of 200 gp per month of construction per every size category of the airship being constructed. Each month's fee is paid in advance—it must be settled before any construction can begin, and each additional month's payment must be received prior to the start of that month. Failure to pay an airship construction yard's fees can bring harsh penalties; more than one shipyard has been known to damage ships under construction, or even to steal raw materials from the construction site to pay for missed fees. Any fees for additional services (see below) must also be paid in advance.

Construction Yard Extras

In addition to the size and number of airships a shipyard can construct, there are other features of a shipyard that may allow it to more or less easily construct particular types or sizes of airships. The GM may add any of the following features to customize his shipyards, giving each a different feel and style.

Calibrated Instruments: When mounting weapons on an airship, one of the most important factors is correct calibration of the weapons' sights with the level of the airship's deck. Calibrated instruments are available at some shipyards to make such work much simpler—when used for installing weapons, these instruments provide a +10 insight bonus to any necessary skill checks.

Cost: 800 gp per month

Cranes: Cranes make airship work considerably easier, and take much of the more backbreaking labor off of the backs of the common workers. Cranes provide a +10 morale bonus to all Craft (Airship) skill checks made while constructing the hull of the airship or fitting its rigging.

Cost: 400 gp per month

Expert Laborers: All laborers who work at facilities with this advantage receive state of the art training from some of the best craftsmen in the business. As a result, the labor force is of the very highest quality, and all laborers, foremen, and shift supervisors are considered to be of Expert skill level (see The Cost of Labor, below). As with ordinary shipyards, the yard pays for one work shift per day (the most expensive shift for each day if more than one shift is worked). The shipbuilder must cover the cost of any additional shifts.

Cost: 800 gp per month

Gem Cutters: A team of expert gem cutters is available to assist with the fitting of gemstones into the hulls of gemstone or diamond airships. There are enough gem cutters on staff to cover all gem cutting needs for every airship in the yard. This includes all shifts and entirely removes the need to hire outside gem cutters.

Cost: 300 gp per month

Kiln: The shipyard has a number of kilns (and the ceramics experts needed to operate them) available on site. This makes it easier to get custom-built ceramic tiles, providing a +10 circumstance bonus to any skill checks necessary to build ceramic hulls. Note that the laborers operating the kilns are not available for work on individual ships, and those constructing a ceramic vessel must still hire ceramics experts as normal.

Cost: 300 gp per month

Ship Smiths: Shipyards with this feature specialize in the creation of metal airships, and have a team of professional smiths standing by to offer advice to the engineer of any such vessel. These ship smiths are all of expert skill level, and there are enough smiths on hand to handle the needs of all airships under construction at any given time, removing the need to hire outside smiths.

Cost: 300 gp per month

The Cost of Labor

Three basic laborers must work during each eight-hour labor shift for each of the airship's tons. Thus, a 10-ton airship must have 30 men working on it at any given time, while a 5-ton airship only requires 15. For every 20 men, or fraction thereof, working on the airship during a shift, there must be one overseer to keep the work on track and the men from loafing off. Additionally, a ship needs one shift foreman for every five overseers, and one engineer for every work shift, regardless of how many laborers actually work during the shift.

Table 1.2 provides salaries for laborers at low skill, average skill, and expert skill levels, on a monthly basis. This assumes a seven-day workweek and 28 days worked during the month. A shipyard's rental fee covers the salaries of the first shift of laborers, overseers, foremen, and engineers at an average skill level. Don't worry about salaries unless you wish to hire highly skilled workers, speed up construction

Table 1.2—Average Construction Salaries

Staff	Low Skill (5)	Average Skill (10)	Expert Skill (15)
Ceramics Experts*	4 gp, 2 sp	8 gp 4 sp	14 gp
Engineer	7 gp	14 gp	28 gp
Gemcutters*	5 gp 6 sp	11 gp 2 sp	22 gp 4 sp
Laborer	1 gp 4 sp	2 gp 8 sp	8 gp 4 sp
Overseer	4 gp 2 sp	8 gp 4 sp	14 gp
Shift Foreman	7 gp	14 gp	28 gp
Ship Mason*	5 gp 6 sp	11 gp 2 sp	22 gp 4 sp
Ship Smiths*	5 gp 6 sp	11 gp 2 sp	22 gp 4 sp

** indicates a specialist position*

time with extra shifts, or employ specialists. Note that evening shift workers must be paid half again as much as those who work during the day, and graveyard shift workers must be paid twice the salary shown in the table. GMs may wish to adjust salaries depending upon the level of wealth in their games.

Workers at each skill level are assumed to have a total number of ranks and ability modifiers in their relevant skills so as to provide them with the bonus listed in parentheses on Table 1.2 for any skill checks they need to make while operating on the airship. Basic laborers typically do not have a specific skill, but this category is still used to determine how effective they are and how well they take orders.

If any material used in a ship's construction calls for the hiring of specialists, these workers must be hired at the same skill level as the engineer, or the engineer's skill is reduced to that of his specialists. While a talented engineer may be able to draft the most amazing, efficient plans ever, he needs specialists that can understand and work from them or the plans are worthless.

The Hull

The hull of an airship determines more about the vessel than any other single factor. The size and capacity of the airship is determined by the hull, as well as its overall ability to resist damage. This section discusses the construction methods available for creating an airship hull, as well as modifications and additions available to the basic hull. Note that this chapter assumes that a competent engineer designs the airship and oversees an appropriate team of laborers during the construction process.

Construction Materials and Cost

There are many types of material from which an airship can be constructed, ranging from simple wood to flexible ceramics to the nearly indestructible adamantine. Each type of material provides its own benefits and hindrances, and engineers must balance the advantages they find most appealing with the cost of the material when choosing a hull. It is also important to note that some materials are very difficult to build with, and require great skill and experience to work competently. If a complex hull material is chosen, it may be necessary to employ expert level workers.

Table 1.3 illustrates the properties of different construction materials, as well as their costs and the DCs for all Craft checks that must be made while working with the material. Immediately following this table is a description of each material and the benefits and difficulties each provides for airships.

Material Descriptions

Adamantine: This type of material is never available for sale in the quantities necessary to construct an airship. The GM is the final arbiter of whether or not this much adamantine even exists in his campaign world, and must choose how to work such a huge chunk of the stuff into the game. It is suggested that ships constructed of this material be, at the very least, legendary for both their extravagance and their power. Vehicles of less than legendary status simply would not justify the massive expense required to build an airship out of adamantine, or the raw effort required to do so. It is suggested that the market value of the hull (for construction purposes) be determined by considering adamantine to have a value of 2,000,000 gp per ton.

Benefit: The critical threat range of any weapon that attacks an airship with an adamantine hull is reduced by half (rounding down) when determining whether or not the airship suffers a critical hit. It is simply very difficult to punch through an adamantine hull.

Penalty: There is no penalty for creating an airship out of adamantine other than the crippling cost and difficulty in working with the stuff. You must hire one ship smith per shift foreman when building an adamantine ship.

Bone: Ships with hulls of bone are often grisly in appearance. Each of the bones used to create the vessel is individual glued into place and then fastened with lengths of twine or wire, creating an impression of a flying boneyard. What bone lacks in structural power, however, it makes up for in flexibility and relatively low weight.

Benefit: Airships with bone hulls receive good Reflex save bonuses, because the bones are flexible, and are able to give and change their shape to allow them to avoid a certain amount of damage.

Penalty: Bone hulls sustain an additional 2 hit points of damage from any physical or force attack that successfully strikes them. Bones are flexible, but also prone to snapping when subjected to blunt force trauma.

Ceramic: Actually composed of a number of carefully shaped ceramic plates that are laid overtop one another like the scales of a snake, a ceramic hull is able to take slightly more damage than a bone ship, but lacks the natural flexibility of that material. Instead, ceramic vessels are renowned

Table 1.3—Airship Hull Materials

Material	Cost/Ton	Hull Points/Ton	Craft DC	Hardness	Fortitude Save	Reflex Save
Adamantine	2,000,000	40	30	20	+15	+5
Bone	1,000	4	20	4	+0	+5
Ceramic	1,500	4	20	6	+0	+10
Copper	1,000	7	20	7	+5	+0
Crystalline	3,000	5	30	9	+5	+10
Diamond	500,000	30	30	15	+10	+5
Gems	100,000	10	30	11	+5	+5
Glass	2,000	1	25	1	+0	+10
Gold	100,000	5	25	5	+5	+5
Iron	1,000	30	25	10	+10	+0
Mithral	1,000,000	30	25	15	+5	+15
Platinum	1,000,000	6	25	8	+5	+5
Stone	1,000	15	15	8	+10	+0
Wood	500	10	15	5	+5	+5

Cost Per Ton: This is the standard cost, in gold pieces per ton, to construct a hull.
Hull Points/Ton: This determines the number of hull points an airship has, based on its material and its size.
Craft DC: This is the DC for most Craft or other checks made during the construction of the airship's hull.
Hardness: Hardness is subtracted from any damage suffered by an airship from attacks made by standard, non-ship-based weaponry.
Fortitude Save: This bonus is applied to any Fortitude Saving throws an airship is required to make.
Reflex Save: This bonus is applied to any Reflex Saving throws an airship is required to make.

for their maneuverability, as the scales of the ship are able to flex, allowing it to more easily withstand the pressures caused by rapid turns.

Benefit: Ceramic hulls increase the maneuverability of an airship by 2.

Penalty: The ceramic hull has a hard time dealing with direct impacts to the side, and suffers double normal damage from any ram attack that hits the ship broadside. When constructing a ceramic hull, you must hire one ceramics expert for every shift foreman working on the project.

Copper: This metal, used often in magical operations, is excellent at absorbing and conducting electrical energy, which makes it an ideal material for vessels that carry lightning bombards. While copper ships are not unknown, they are normally only used by dwarves or other races known for their metalworking skills.

Benefit: Just traveling through the air generates a static charge along the hull of the airship. This provides enough electrical energy to fuel one attack from an electrical bombard per hour of travel per ton of the ship.

Penalty: The airship suffers a -2 circumstance penalty to saves against any spells or spell-like abilities with the electricity descriptor. You must hire one ship smith per shift foreman working on the project.

Crystalline: Expensive and quite rare, crystalline vessels are favored more for their ornamental qualities than their structural integrity. While they are surprisingly resilient and certainly durable enough for most passenger vessels, military vessels are not built from crystal due to their low number of hull points per ton. Crystalline vessels do have the advantage of allowing crewmembers that are below decks to see outside of the airship without penalty, although they also allow others to see into the vessel.

Benefit: Crews firing weapons mounted below decks do not suffer the standard -2 visibility modifier.

Penalty: Crews within the airship are clearly visible from outside of the airship, provided they are adjacent to the exterior of the hull. You must hire one gem cutter for every shift foreman when constructing a crystalline airship hull.

Diamond: Ships crafted from the hardest gem known to man are incredibly rare, but are also fantastically durable and resistant to damage. Diamond ships are constructed from thousands of stones, each of which is meticulously fitted to those surrounding it, creating a solid shell of incredibly durable gemstones. These airships are not only dazzling to look upon, with their hulls gleaming in the sun or moonlight, but they are also incredibly difficult to damage, much less destroy. Though they are capable of bankrupting even the richest of nations, a diamond ship is powerful enough to justify the cost.

Benefit: None, aside from its outstanding durability and resistance to damage.

Penalty: You must hire one gem cutter for every shift foreman when constructing a diamond airship hull.

Gemstones: Crafted in much the same way as diamond hulls, gemstone airships are fitted together with molten copper wire by master jewelers overseen by a skilled engineer. The result is a durable, yet shockingly expensive vessel that is a symbol of strength and opulence. While gemstones offer no material benefits or penalties, they are so striking that they are often used to construct the flagships of a fleet or the personal airship of a particularly prominent merchant.

Benefit: You receive a +4 Charisma modifier for any Diplomacy, Bluff, or Gather Information checks you make while aboard a gemstone-hulled airship, provided those skill checks are made against individuals who are not part of your airship's crew.

Penalty: You must hire one gem cutter for every shift foreman when constructing a gemstone airship hull.

Glass: Glass works well for vessels that rely on stealth, such as scout airships and mage chariots, which prefer to remain unseen while allowing their crews and pilots to see as much of the surrounding area as possible. The brittle na-

ture of glass, however, makes it impractical for vessels involved in direct conflict, as these airships simply are not able to survive a hit, even from relatively weak weaponry.

Benefits: The crew of an airship made from glass has a +5 circumstance bonus to spot other crafts or creatures, while the crews of airships attempting to spot the glass airship suffer a corresponding -5 penalty.

Penalties: Other than its shocking fragility, glass does not inflict any further penalties on an airship.

Gold: Hulls constructed from gold have an advantage in deflecting spells that are based on light or sound. Crafted from rounded sheets of gold hammered thin and then riveted onto a wooden frame, golden airships are able to deflect or absorb light or sonic based spells, as noted below.

Benefits: An airship with a golden hull receives a +4 circumstance bonus to all saves against any spell with the light or sonic descriptor.

Penalties: You must hire one ship smith for every shift foreman when constructing an airship hull from gold.

Iron: Favored by dwarves and orcs, iron hulls are among the strongest in the skies. Able to weather even the strongest of attacks, ships created from this material are often given a sharp prow to allow them to ram other vessels with greater ease. In addition, due to their great mass, iron airships suffer less damage from being rammed.

Benefits: The airship is treated as if it were one size category larger than it actually is when resolving ramming attacks, no matter whether it is the aggressor or the target.

Penalties: Iron ships are susceptible to electrical attacks and suffer a -1 circumstance penalty to any saving throw against spells with the electrical descriptor. You must hire one ship smith for every shift foreman when constructing an airship hull from iron.

Mithral: Lightweight and very flexible, mithral airships are constructed of plates of mithral worked over a thin framework of flexible wood. This gives these hulls a distinctive banded appearance and a flexibility that rivals those enjoyed by ceramic hulls.

Benefits: The airship is treated as if it were one size category smaller than it actually is when, and only when, determining its Armor Class and Maneuverability.

Penalties: You must hire one ship smith for every shift foreman when constructing an airship hull from mithral.

Platinum: Another prestige metal, platinum is amongst the most expensive materials ever used in the construction of an airship. While platinum offers no real benefits to the airship builder, it is a symbol of such extravagant wealth that it is often reserved for airships used as the headquarters of mercantile interests or others with a desire to display their prosperity.

Benefit: You receive a +8 circumstance bonus to all Bluff, Diplomacy, or Sense Motive checks you make while aboard an airship with a platinum hull, provided those skill checks are made against individuals who are not part of your airship's crew.

Penalties: None, other than the exorbitant cost of constructing even a modest airship from such a precious metal.

Stone: Only dwarves and giants build stone airships, mostly to keep themselves comfortable while in the air. These massive airships are extremely tough and able to sustain beatings that would crush lesser airships, but unfortunately maneuver like flying bricks.

Benefits: The attributes of a stone airship are the only benefits provided by the material, including its superior damage resistance and increased hull points.

Penalties: An airship constructed of stone calculates the number of power factors required for its engine as if it were 50% larger (in tonnage) than it actually is, due to the great mass of the stone and its unwieldy nature. You must hire one ship mason for every shift foreman when constructing an airship with a stone hull.

Wood: The default material for all airships, wood offers no bonuses or penalties for those who construct their airships from it. Given its relatively low price and good durability, wood is by far the most common and most economical airship construction material in use.

Benefits: None, wood is the standard for airship hull construction.

Penalties: None.

Building the Hull

Once the material and the size of the hull are decided upon, the construction of the hull can commence. Note that other phases of construction may occur at the same time, such as the commissioning of weapons for the airship or the design of the engine.

The time it takes to build the hull is a function of the number of laborers working on the airship, the number of shifts worked each day, and the skill of the laborers and the engineer who guides them. The cost of labor is not figured into the cost of the hull, determined above, but is in addition to those material costs. This cost can be controlled somewhat by working only a single shift each day, though this increases the time it takes to build the airship considerably.

Crafting the hull of the airship works much the same as any other use of the Craft skill: a portion of the hull's market cost is spent, time passes, and a skill check is made to determine progress. The primary difference is the number of people involved in the project and their effect on the process, and also the time necessary for each skill check.

To determine the 'market value' of the airship hull, simply multiply its tonnage by the costs found in the materials table. Thus, a 100-ton airship with a hull made of bone has a market value of 100,000 gp, which is the amount used when determining the cost of each Craft check. Once the market value is known, simply proceed with the steps below to walk through the construction of the airship's hull. When the hull has been completed, it is then time to mount the engines and begin preparing the vessel for its masts, weaponry, and other components.

Crafting the Hull

1. Consult Table 1.3 to determine the DC of all Craft skill checks necessary during the construction of the hull. Unless otherwise noted in the following steps, this DC is used for all skill checks during this process.
2. Determine the period for your progress checks. Ships built with one work shift per day make monthly checks, those built with two shifts make checks every two weeks, and those built with three shifts can make a check every nine days.
3. Pay 10% of the hull's market value. This payment covers the materials for one period of work, but does not cover the shipyard fees or the costs of labor, both of which are determined on a monthly basis in previous sections of this chapter.
4. Make a Craft (Airship) skill check against the DC determined in step 1, above. The skill modifier used is based on the average skill of all engineers involved in the project during the period—if there are three engineers working on the airship so that three shifts can be worked each day, then the average skill of those engineers is used to make this skill check.

A Note About Labor Costs

When determining what sort of labor crew to hire for work on your airship, the following bits of advice can prove useful in saving your budget:

- Experienced engineers can reduce the overall cost of a project and the time it takes to complete it.
- Extra shifts reduce the time required to build a hull, but they generally increase the cost of the hull, as well. The increase in salaries required to keep men on the job during the evening and graveyard shifts may prove too exorbitant to maintain during a long project.
- Though expert level laborers always help speed up a project somewhat, they are not cost effective unless the material used to build the hull has a high Craft DC (25 or 30). In such cases expert workers are essential in order to prevent wasted time and money due to failed Craft checks.

This skill check is further modified by the quality of the laborers working on the airship. If all of the laborers are hired at an expert level of skill (see chart above), then a +5 circumstance bonus applies to this skill check. If all of the laborers possess only low skill, then a -5 circumstance penalty is applied to the skill check. In order to get the best work out of laborers, however, the foremen and shift supervisors must be at least as skilled as the laborers. If they are not, the bonus or penalties for labor are determined by the skill of the foremen and shift supervisors, not the laborers themselves.

5. If the Craft check succeeds, your progress for the period is equal to the amount spent for raw materials, plus the Craft DC multiplied by ten times the skill check result. If this total equals the value of the hull, then the hull is complete. If the result is not equal to the value of the hull, then construction has progressed, but the hull is not yet complete. Record the result and return to step 2 to make the Craft check for the next period of work. When you arrive at this step again, add the total progress so far to the result to determine if the hull is complete.

If, however, the Craft check fails, no progress is made during the work period. If the skill check fails by 10 or more, the engineer and laborers have gone horribly astray and actually reduce the current progress on the hull by 2d10% of its value.

Airship Engines

It takes a lot of power to keep airships aloft and to propel them through the air. There are several types of engines available, each with its own strengths and weaknesses. There are three important factors to consider when selecting an engine: power factors, fuel source, and cost.

The power factors of an engine determine how powerful the engine is, which determines the acceleration of the engine and the size of the airship it can support. Of course, more powerful engines generally consume more fuel and cost significantly more. In short, engines with higher power factors are able to push larger ships and make them go faster, but also cost more to buy and to operate.

While constructing the hull of an airship is difficult, it is child's play compared to the design and crafting that goes into the creation of an airship's engine. The hull must be able to withstand wind resistance and the rigors of combat, while the engine must often be able to harness the elemental forces of magic. A crack in the hull of an airship is somewhat dangerous, but merely the finest of cracks in an airship's engine could send the whole thing plummeting to the earth, fire belching from its stern as the engine self-destructs.

Because of the great precision and care needed to build an airship engine, the spellcasters who oversee their creation are paid very well, but are also held to an extremely high standard. Even having a single engine fail while in flight is enough to end the career of most who construct airship engines, and even those who are not professionally ruined often choose to retire rather than run the risk of such a tragedy ever occurring again as a result of their work. The reward for success is quite high, but the penalty for failure can leave even the most stalwart wizard wondering if he's in the right line of work.

Still, without someone to build the engine, there wouldn't be any airships, outside perhaps of a few dirigibles or small gliders, and wizards who enjoy their money are more than willing to put in the effort required to construct airship engines. In this section is all the information you need to create airship engines, whether for your own ships or for sale to wealthy merchants or to the military.

Power Factors and Acceleration

The difference between the power factors of a ship's engines and its tonnage determines its basic acceleration. Subtract the ship's tonnage from its power factors—the result is the airship's max acceleration per round, in MPH. Certain features of an airship, notably its sails, may add to its basic acceleration as well.

An airship engine cannot power an airship with tonnage greater than its power factors, there simply isn't enough energy produced to lift the vessel off the ground. If the power factors of an engine and the tonnage of the airship it powers are exactly equal though, the airship still has an acceleration of 1.

It is possible to power a ship using more than one engine, but doing so causes a cumulative -2 circumstance penalty to all Profession (Airship Pilot) skill checks for each engine beyond the first. Though some ships can overcome this problem by installing an engine sync (see the piloting components section), most airships are simply not capable of fully suppressing the stresses caused by the additional engines. Airships with more than one engine simply add the power factors of all engines together when determining acceleration.

Ships equipped with dirigibles (see the templates section), may need no engine or only a small engine to get off the ground. Subtract the dirigible's lift from such a ship's tonnage when determining its acceleration.

Note that the ship's basic acceleration rating assumes that its engines are running at full power. Underfueled engines have reduced power factors, and reduce a ship's acceleration and maximum speed accordingly.

In general, because airships' speeds are most often measured in 10 mph increments, it is best to round an airship's current speed down to the nearest 10 mph. Thus, an airship traveling at 16 mph should be treated as moving at 10 mph until its airspeed reaches 20 mph.

Maximum Speeds

The maximum speed (in miles per hour) of an airship is equal to its acceleration plus the power factors of its engine, or twice its acceleration, whichever is greater. Note though that no airship can travel at more than 200 mph.

As long as a ship has at least an acceleration of 1, it eventually reaches its maximum speed, regardless of the weight of the vessel, the size of the engine, or any other factors. If an airship has more than one engine, the total power factors of all engines are added together when determining the airship's total maximum speed.

The Limits of an Engine

Airship engines are large, noisy, and powerful. Fueled by arcane or divine magic, they are able to propel large airships far from the ground at alarming speeds. However, there are certain limits to their capabilities that at this time seem nearly insurmountable.

Altitude

Regardless of the type of fuel used by the engine, it operates in relationship to the ground and must remain within a few hundred feet of the earth at any given time. This is not a safety measure, as the airship can travel at 500 feet or so above the ground without problems, but a magical conundrum—pushing the airship up requires a stable base from which to propel the vessel, and the earth is the only object large enough to qualify. The further from this stable platform the airship rises, the more difficult it is for the engine to sustain its lifting capacity. Thus, while an airship might be able to temporarily bust through its operating ceiling, it eventually falls back to its normal maximum height.

Some airships have surmounted this problem, but only at extremely great cost. As the lift provided by an engine attenuates with altitude, larger and larger engines are required to raise the airship higher and higher. These larger engines require progressively greater amounts of fuel, quickly pushing the cost of such high-flying airships beyond the reach of all but the wealthiest governments or mercantile cartels.

Power Factors

Airship engines are normally limited to 100 power factors. While a small number of individuals have discovered a means for circumventing this limit, their secrets (even once discovered) are not duplicable by others. It is believed these individuals place a bit of their essence into each engine they create, giving it the ability to sustain much greater power than airship engines created by others. See the "Engine Savant" feat for further information.

The Source of Power

All airship engines derive their power from a specific source. What that source is can vary from engine to engine, but there are no hybrid engine types. The creator of the engine must choose from whence he will draw the power for his engine, and then stick with it. While it might be appealing to imagine an engine powered by both air and fire, this is not merely impractical, but impossible.

An engine's power source determines many of its other aspects as well. An elemental engine, for example, must be constructed of materials appropriate to the element or it simply won't function. Likewise, divine engines must be blessed regularly to retain their powers, otherwise they become inert and cannot be ignited again until the conditions for their operation are again met. Note though that the power source of an engine is not directly what drives the airship forward or lifts it into the air. An arcane or divine nexus absorbs the energy created within the engine and converts it into power factors, allowing a relatively small amount of energy to be transformed into enough power to lift and move an airship.

In this section, each type of power source is described, along with the benefits and hindrances for engines using that source. Most of the essential information is contained in Table 1.4, with lengthier notes and descriptions in the engine's write-up.

Bonus: Some airship engines provide a bonus to maneuverability, operational ceilings, or some other aspect of the airship to which they are mounted. This bonus, if applicable, is described in this section.

Penalty: If the airship an engine is mounted on suffers any penalty as a result of the engine type, that penalty is detailed here.

Cost: This is the market cost per power factor for the engine type.

Craft DC: Any skill checks needed to craft the airship engine use this DC.

Fuel Cost: If the airship engine requires some sort of fuel (such as wood or oil) the cost of that fuel is detailed here.

Size: Engines vary in size, based on their type and number of power factors. This section details how the engine's size is calculated. This section also lists the number of critical hit slots the engine takes up on the airship's Critical Hit Table.

Hull Points: Like airships, engines have hull points rather than hit points, which are used to determine how much damage the engine can withstand.

Hardness: The hardness of the engine is deducted from the damage inflicted on it by any successful attack from non-airship weaponry.

Repair DC: This number is used as the DC for any repair attempts made on the airship engine.

Repair Cost: This indicates the cost (in gold pieces) per hull point repaired. This does not include any required labor costs, such as if a wizard or engineer must be hired to work on the airship.

Arcane Engines

While most types of airship engine are designed to produce energy, which is then converted into motive power by various spells embedded in the engine, the arcane engine is designed to directly transform arcane power into the ability to lift and move an airship. This type of engine is used primarily by sorcerers and wizards who are able to fuel the engine with their own power, but also are found in areas where arcane spellcasters are common and readily available for hire.

Table 1.4—Engine Types

Name	Cost*	Craft DC	Hull Points**	Hardness	Repair DC	Repair Cost†
Arcane	1,500	30	5	5	25	300
Divine	1,500	30	5	5	25	300
Elemental, Air	2,000	25	1	2	20	400
Elemental, Fire	1,500	25	3	6	20	300
Energy	3,000	35	2	5	30	600
Fiendish	3,000	30	20	5	30	600
Necrotic	2,000	30	20	5	25	400
Oil-burning	1,500	20	2	5	20	200
Vampiric	3,000	30	20	5	20	600
Wood-burning	1,000	20	2	5	15	200

* Per power factor ** Per ton of engine size † Per point repaired

Bonus: Arcane engines are small and light, and do not require traditional fuel.

Penalty: None.

Fuel Cost: None. The arcane engine does, however, require a link between an arcane spellcaster and itself. The spellcaster must dedicate a number of spells slots to the engine while this link is in place, and each spell slot provides power to the engine based on its level. For every level of a spell slot used, the engine is provided with enough energy to steadily produce 20 power factors for one hour. A 5th level spell slot, for example, provides enough energy for 100 power factors for one hour. Additional spell slots allocated to an engine past its maximum power rating provide additional operating time. Thus, an engine with 20 power factors would consume the 100 power factors provided by the above 5th-level spell at a rate of 20 each hour, giving it enough fuel to last for 5 hours.

Forging a link with the engine requires no effort—the spellcaster simply places his hands on the provided spaces on the engine and allows the arcane magic there to do its work, which requires roughly 15 minutes to complete. At the time the link is forged, the spellcaster does not need to dedicate any spell slots to the engine, but may do so at any time as long as he is on the airship to which the engine is attached. Dedicating a spell slot is a free action that does not provoke an attack of opportunity.

While a spell slot is dedicated to the engine, the spellcaster does not have access to that slot. Thus, a spellcaster who dedicates a first-level spell slot to the arcane engine has one fewer first level spells available each day. Once the engine burns the slot, it returns to the spellcaster who dedicated it, but the slot is expended, and is not available for use again until the spellcaster has had time to rest and restore his personal energies (that is, whenever he is next able to prepare his spells for the day).

Size: 1 ton per 50 power factors or fraction thereof, 1 critical hit slot per 100 power factors or fraction thereof

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure—any spellcaster currently linked to the engine suffers 1d4 hit points of damage per level of each dedicated slot.

Divine Engines

The divine engine is identical to the arcane engine, save that it uses divine energy for its power factors.

Elemental Engines (Air)

By far the most common type of elemental engine, air-powered engines provide enormous lift to their airships, but are quite fragile and prone to damage. The engine works by imprisoning summoned air elementals and slowly converting their personal energies into lift for the airship. Because of their close relationship to air, air-powered engines are able to rise higher than other engines, and their lifting capacity attenuates slower. Because the materials used in their creation are delicate, however, these engines break down often and are difficult to repair. Elemental engines do not contain an elemental when crafted; the elementals are summoned later by the users.

Bonus: Airships with engines of this type do not suffer attenuation of lifting capacity nearly as rapidly as other vessels, and may rise up to 750 feet in altitude without difficulty. In addition, the maneuverability rating of an airship with an air-powered engine is increased by one, due to the affinity the elementals have for the air.

Penalty: Air-powered engines are constructed from glass, crystal, and other fragile materials, making them quite easy to damage or destroy. The hardness of these engines is very low, and the engine itself has one-half the number of hit points normally possessed by an airship engine of its size. The engines also require a mage or cleric to stand by and cast *summon monster* or *heal* spells when appropriate.

Fuel Cost: Elemental engines take their power from the life force of air elementals, typically summoned through the various *summon monster* spells. When summoned, an elemental appears inside the engine and remains trapped there until consumed, even if the summon spell's duration runs out. An engine may hold up to 2HD worth of elementals per every 5 power factors of its capacity. Generally, one large elemental is preferred over several small ones, as the larger elemental lasts longer before being consumed.

Each air elemental hit point burned provides the engine with two power factors for one hour. Bound air elementals, if not fully consumed, regenerate their hit points at the rate of five per hour of rest. An elemental can also be fully restored with a *heal* spell, although *cure wounds* spells and the like are ineffective. Engines burn one elemental at a time, starting with the largest one bound.

Size: 1 ton per 50 power factors, 1 critical hit slot per 100 power factors or fraction thereof.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure—the elemental contained within it is imme-

diately freed from its bondage. The extraplanar rift formed by the failure lasts less than a second, but causes 1 hull point of damage to the airship per 20 powers factor of the engine.

Elemental Engines (Fire)

This type of elemental engine is best suited for those vessels that require a great deal of speed but are not terribly concerned with maneuverability. The massive iron exhaust ports used to vent the fury of the imprisoned fire elementals are large enough to restrict the turning radius of airships that use this design, but the power they provide is enough to silence most of their detractors. Elemental engines do not contain an elemental when crafted; the elementals are summoned later by the users.

Military vessels favor fire elemental engines over other elemental types, if only for their raw speed and destructive power. The engine itself can be used as a weapon against vessels that approach from the rear, and some elaborate engineering even allows the exhaust to be used as a fire-projecting missile weapon in its own right (see the section on Shipboard Weapons for more information).

Bonus: The maximum speed of an airship that uses this type of engine is increased by 20 mph, provided the engine has enough power factors to get the airship flying.

Penalty: These engines require a massive set of exhaust pipes that channel the force of the engines in a very straight line. This decreases the maneuverability of the airship by 2. The engines also require a mage or cleric to stand by and cast *summon monster* or *heal* spells when appropriate.

Fuel Cost: Elemental engines take their power from the life force of fire elementals, typically summoned through the various *summon monster* spells. When summoned, an elemental appears inside the engine and remains trapped there until consumed, even if the summon spell's duration runs out. An engine may hold up to 2HD worth of elementals per every 5 power factors of its capacity. Generally, one large elemental is preferred over several small ones, as the larger elemental lasts longer before being consumed.

Each fire elemental hit point burned provides the engine with two power factors for one hour. Bound fire elementals, if not fully consumed, regenerate their hit points at the rate of five per hour of rest. An elemental can also be fully restored with a *heal* spell, although *cure wounds* spells and the like are ineffective. Engines burn one elemental at a time, starting with the largest.

Size: 2 tons per 50 power factors or fraction thereof, 1 critical hit slot per 50 power factors.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure—the elemental contained within it is immediately freed from its bondage. The extraplanar rift formed by the failure lasts less than a second, but causes 1 hull point of damage to the airship per 5 power factors of the engine, and also starts a 10′ square fire centered upon the engine's former location.

Energy Engines

Similar in nature to elemental engines, these power plants derive their power from an extraplanar source. A pinprick portal to the positive energy plane allows a trickle of this potent energy to seep into the engine's furnace. A second portal allows a trickle of negative energy to enter the furnace. When the two mix, they react violently and create a vast amount of energy considering the small size of the furnace. Because they require no fuel, these engines are used most often by airships that must travel long distances. Unfortunately, the engines are unable to generate energy quickly and require a great deal of time to lift an airship from the ground or to accelerate.

Bonus: These types of engine require no fuel, whatsoever.

Penalty: The engine requires a full hour to begin generating energy once it is turned on, as the positive and negative energy flows need time to mix and begin reacting. In addition, the engine cannot accelerate an airship faster than 10 mph per round, making the ship unable to maneuver quickly.

Fuel Cost: None.

Size: 1 ton per 25 power factors, 1 critical hit slot per 50 power factors.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure. The unrestrained reaction between positive and negative energy immediately causes an explosion that collapses the links between the two planes and causes 1d4 hull points of damage per 5 power factors of the engine.

Fiendish Engines

These engines belch gouts of brimstone gas from their vent ports at irregular intervals, filling the ship with an acrid stench of sulfur that clings to the clothes and hair of those who work on it. The power of the fiendish engine comes from a pact with a demon lord, who allows a portion of his vassals' essence to be used as power factors for the airship. While making such a pact with a demon lord is difficult, it is far from impossible. A demon lord's agents on the material plane need ways to transport cargo and passengers, and find airships an ideal method, as it allows them to bypass mortal customs agents and other travel checkpoints.

The trade off for using a fiendish engine is the number of favors the vessel's operators must do for the infernal creature from which the airship gains its power. Generally speaking, the more powerful an engine, the more often its owner must do favors for his infernal ally, and the more dire those favors become. No good-aligned creature would ever use a fiendish engine, though there may be a few good-aligned airmen who serve on airships that receive their power from the infernal regions. Work is work, and as long as they aren't responsible for what goes on belowdecks, they can look the other way.

Bonus: The fiends that power these engines are willing participants in the engines' process, allowing them to provide excellent maneuverability. All airships using this type of engine have their maneuverability ratings increased by 2.

Penalty: While the infernal creature bound within the engine is willing to help the airship fly, it has no interest in allowing the engine to suck away all of its life energies, which reduces the power of the vessel. The power factors of an airship using this type of engine are limited to a maximum of 100, regardless of how many infernal creatures are bound into the engine. Only one fiendish engine may be affixed to a single ship.

Fuel Cost: None. The engine is powered by a demon or devil, depending on the patron who provides the power, that is chained into its furnace. The furnace slowly grinds away the demon's essence, creating the energy for the engine's magic to convert into power factors. The process is shockingly painful, and the screams of the fiend are often heard echoing through the airship, but the torture is nothing compared to the horrors the creature knows its master will inflict upon it if it doesn't do as it was ordered.

For each hit die of the fiend bound in the engine's furnace, the engine generates 10 power factors for a full hour, up to its maximum rating. The bound fiend loses one hit die per hour, so the engine slowly loses power throughout the day, and few airships with an engine of this type are suited for very long journeys. The engine will not kill a fiendish creature, but stops grinding away its essence when it reaches its last hit die and the fiend stops providing energy to the airship. After a full eight hours of rest, a fiend's hit dice are restored and it is once again able to provide energy to the engine.

More than one fiend may be imprisoned in one engine, and multiple fiends can either be burned at the same time, or burned in shifts, allowing some fiendish creatures to rest while others work. Captains are given their fiends in the form of *soulstones*, which can be linked or removed from an engine as needed. Soulstones also prevent the fiends from escaping or causing other dangers.

The captain of the vessel must continue to perform favors for his fiendish ally if he wants to keep his ship in the air. At the end of every month, the fiendish lord who provides energy for the airship takes an accounting of the favors done for it in the previous month and provides energy for the next month as appropriate.

Size: 1 ton plus 1 ton per 50 HD of creatures the engine can contain, 1 critical slot per 100 power factors.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure. The engine immediately stops functioning, but there are no other ill effects, as the bound demons are quietly allowed to return to their home planes.

Necrotic Engines

These foul creations stink so strongly of rotting flesh and burning hair when in use that few creatures can stand to be aboard an airship that uses such an engine. By accelerating the rate of decomposition in dead flesh and bone, the engine is able to produce the energy necessary to provide lift for an airship. Used primarily in vampiric boneships, these engines are never for sale on the open market, and fuel for them is somewhat difficult to find in areas where meat cannot be purchased. While it is possible for a creature of good alignment to use one of these engines for an airship, she would be restricted to using animals for fuel to avoid suffering a serious moral crisis.

Bonus: The necrotic engine creates a repellent stench that causes anyone not used to the smell to suffer a -2 morale penalty to all skill checks and attack rolls while aboard one of these vessels. This applies only to creatures with a sense of smell.

Penalties: Only undead, asherakes, constructs, and GM specified creatures are able to withstand the stench of this engine for any length of time—others suffer the morale penalties listed above while aboard an airship equipped with a necrotic engine.

Cost: Note that the engine is limited by its fuel capacity regardless of its power factors.

Fuel Cost: The fuel for a necrotic engine is flesh and bone; the more powerful a creature the flesh is taken from, the more lift the engine can provide. To power the engine, the body of a deceased creature is placed into its furnace. For every HD of the creature placed in the furnace, the engine produces 5 power factors for one hour. By severing limbs and shattering bones, it is possible to compress a body by a great deal, allowing the bodies of as many as three large creatures, five medium creatures, eight small creatures, or twelve tiny creatures to be crammed into the furnace of the engine at any one time. Note that bodies must be prepared no more than 48 hours before they are used as fuel.

It is possible to purchase beasts of burden or other animals for use as fuel, but they must be prepared for use prior to launch unless the owner of the airship wishes to transport livestock along with the rest of his cargo.

Size: 1 ton. The size of the engine does not change based on the power factors it can provide. The engine takes up 1 critical hit slot.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure and immediately stops functioning. Other than truly horrific stench being released by the burning fuel of the necrotic engine, there are no other side effects from this failure.

Table 1.5—Monthly Required Fiendish Favors

Favor Performed	Energy Provided
Ferry one or more fiendish cultists	5 HD per 500 miles traveled during the month.
Ferry illicit cargo for fiendish cultists	2 HD per 100 pounds of material per 500 miles traveled.
Kill enemy fiendish cultists	1 HD per 2 HD of the slain creatures.
Kill member of good-aligned church	1 HD per 1HD of the slain creature.
Kill celestial creature	2 HD per 1 HD of the slain creature
Join the fiendish cult	5 HD*
Convince another to join the fiendish cult	1 HD per 2HD of the inducted creature
Perform minor task for the lord	10 HD**
Perform major task for the lord	20 HD***

* Joining a fiendish cult ensures that this many Hit Dice of fiendish creatures are provided for the fiendish engine each month, regardless of any other tasks performed.

** A minor task is one involving some personal risk and at least a week's worth of effort. This is the equivalent of a relatively short adventure for characters of 5th to 10th-level.

** A major task is difficult and potentially fatal for those who choose to undertake it. It is the equivalent of a standard adventure undertaken by characters above 10th-level and should have definite, tangible benefits for the fiend for whom the task is accomplished.

Oil-Burning Engines

Though more expensive than wood, fuel oil is readily accessible and far more portable than cords of lumber. It also burns cleaner and more efficiently, allowing airships equipped with these engines to travel further on less fuel. Using the same oil adventurers use in their lanterns, an oil-burning engine is capable of generating enough power to lift even the heaviest airships, though it can take a dangerous quantity of oil to care for the needs of large engines during extended journeys, which makes airmen more than a little nervous when dealing with these engines. An airship that goes into combat with an oil-burning engine is taking a not-inconsiderable risk—if that oil gets set alight, the destruction it wreaks on the airship knows no bounds and may very well leave the entire airship crashing to the earth in flames. Still, merchants enjoy the extra cargo space they get from burning oil instead of wood, and are not likely to give up their oil supplies any time soon.

Fuel Cost: Fuel oil costs 4 gp per gallon, using roughly 1 gallon of fuel per power factor for one hour. One ton of space can hold approximately 500 gallons of oil.

Size: 1 ton per 10 power factors, one critical slot per 50 power factors.

Catastrophic Failure Result: If the engine is reduced to zero hull points, it is considered to have suffered a catastrophic failure. The space formerly occupied by the oil-burning engine is immediately consumed in flame as the fuel-oil erupts and begins to spread. This fire automatically spreads 10' each round, unless it hits a bulkhead. At that point, the fire stops spreading in that direction (though it may spread in other directions freely) for a number of rounds equal to the hull's hardness as it burns through the wall. Once this time has passed, the fire is free to spread past the now-destroyed bulkhead. This type of fire can quickly gut an airship, burning through its infrastructure and setting alight components as it blazes.

Vampiric Engines

While the necrotic engine feeds on the bones and flesh of the dead, the vampiric engine devours their blood and life force. The screams of those strapped into a vampiric engine often echo for days as they struggle to survive the draining ministrations of these foul devices. While dangerous to use, these engines are very popular amongst evil creatures that have little difficulty finding slaves or other unfortunates to strap into the machine.

They do, however, have a serious impact on the crew, who often find themselves worrying more about whether or not they are going to end up in the machine than they do about tending to their own jobs.

Bonus: Vampiric engines are able to provide an enormous amount of power, provided they have enough living bodies from which to draw fuel. Like necrotic engines, it is the HD of the drained creature that provides the power for the engine.

Penalties: The engine requires living creatures for fuel, each of which must be bound and attached to the engine. If the creatures escape, the engine doesn't have any fuel, which can lead to some interesting, and fatal, incidents.

Fuel Cost: The fuel for this type of engine comes in the form of living, breathing creatures. For every HD or level of life energy possessed by a creature, it provides 5 power factors for one hour. At the end of each hour, the life energy used is destroyed. This inflicts a negative energy level on the 'fuel' creature, which remains in effect until removed (as per normal), or until the target dies. The creatures used for fuel need not be intelligent; any creature with hit dice can fuel the engine, with the exception of undead and constructs.

The cost for such fuel creatures is variable—in some areas, individuals are not for sale for any reason, and even prisoners are not offered up for such a horrific fate. In less restrictive regions, however, anything is for sale, and using the life force of someone as fuel for your airship is no different than slaughtering a cow for food. In some communities, criminals who cannot be rehabilitated (either because their crimes were so heinous or they have proven themselves to be repeat offenders) are sometimes sold to the owners of these ships as a type of execution.

Most vampiric engines are designed to accept fuel from more than one creature at a time, allowing for the creation of truly impressive amounts of lifting power. While no more than ten creatures can be hooked to a single vampiric engine at once, particularly large or powerful vessels may have more than one of these engines operating at a single time.

Size: 1 ton plus 1 ton per 'harness' used to attach an individual to the vampiric engine. The vampiric engine takes up 1 critical hit slot.

Catastrophic Failure Result: If the airship is reduced to zero hull points, it is considered to have suffered a catastrophic failure, but no other ill effects occur. Smoke drifts through the lower decks for a few rounds, but the destruction of the engine tends to snuff the fire burning within, preventing a fire from raging through the lower decks as with an oil-burning engine.

Wood-Burning Engines

The original, and still most common, airship engine relies on burning wood to create its energy. Smokers, as they are often called, are dirty, inefficient engines that require a large supply of fuel to cover any distance at all. Still, the fuel is cheap and the engines are inexpensive and easy to maintain, making them ideally suited for adventurers or other low-rent types to purchase and use in their airships.

Bonus: None. The advantage of this type of engine is its low cost.

Penalty: Wood-burning engines generate a great deal of smoke and stinking fumes, which is vented outside and can be seen for quite some distance. Anyone attempting to spot a wood-burning airship receives a +4 circumstance bonus due to this cloud of exhaust.

Fuel Cost: 5 sp per hour per power factor. One ton of wood provides roughly 500 hours of fuel for an engine with one power factor.

Size: 2 tons per 10 power factors, 1 critical hit slot per 50 power factors

Catastrophic Failure Result: None

Creating the Engine

The main difficulty in creating an airship engine is the sheer number of arcane or divine matrices that need to be built to hold the power of the engine. Regardless of the energy source used by the airship, the creator must meet the following requirements:

Creator Level: 10th-level, *Spells Known: Fly, levitate, Feats:* Create wondrous item, *Experience Cost:* 100 xp per 2,500 gold piece final value of the airship engine.

Creating an airship engine is treated as a use of the Craft (Airship Engine) skill and requires an alchemical laboratory large enough to hold the completed engine (as well as a way to get the completed engine out of the laboratory!) To construct the engine, simply follow the steps below.

Crafting the Engine

1. Determine the base DC for crafting the engine, as determined by the engine type, listed above.
2. Determine the market value of the engine by multiplying its total power factors by the cost per power factor for the engine type.
3. Pay 10% of the market value of the engine, which provides the raw materials for one week's worth of work on the engine, as well as the salary of the mage doing the necessary enchantments.
4. Make a Craft (Airship Engine) skill check (DC as determined in step 1).

   If this check succeeds, multiply the result of the skill check by ten times the DC and add the total to the amount spent on materials for the week to determine the amount of progress made on the engine during this week. Add the progress made during the current week to any progress made during past weeks. If the total progress thus far equals or exceeds the market value of the airship engine, the engine is complete; note the time taken and the actual amount of money spent. If the total progress is not greater than the market value of the engine, however, simply record the progress so far and return to step 3 when ready to make a skill check for the next week of construction time.

   If the Craft (Airship Engine) skill check fails, no progress is made during the week, though the raw materials are still expended in the attempt. If the skill check fails by 5 or more, the total progress made so far on the airship engine is reduced by 2d10%, as the engineer has managed to actually damage the engine during his attempts to complete its construction.

Mounting Engines and Engine Operation

Engines are almost always mounted at the rear of a vessel, in the bottom of the cargo deck. The rear of the engine is always exposed, allowing the energy of the engine to be transferred into thrust and lift, as necessary. Engines in airships do not operate on strictly scientific principles, however, as they are essentially magical devices with rules all their own. Because the engines actually do burn their fuel, however, their exhaust systems must be vented to the outside of the ship to avoid a build-up of toxic fumes and the possibility of fires below decks.

For our purposes, the exhaust from an airship is generally a trickle of smoke, and the gentle flare of fire can be seen within the exhaust pipes. The exhausts do not put off enough of a glow to be more easily seen at night, nor do they create a great plume of smoke that can be seen for miles during the day, with the exception of wood burners.

Mounting the engine is a fairly difficult task, requiring a number of laborers and an engineer. It is possible to mount an airship engine on the bottom of an airship. This is normally done when the engine is too large to fit inside the airship, such as the case with the so-called zephyr freighters favored by halflings for transporting goods. The difficulty with this positioning is that the engine may be directly targeted by anyone below the airship, without requiring a critical hit. The engine has an Armor Class equal to the Armor Class of the airship it is mounted on.

To install the engine in an airship, follow the following steps. The engine is installed in the same yard where the hull was built, and typically takes a month. The process may be speeded up by working extra shifts. All yard rental fees and extra labor costs apply as with the hull.

Installing the Engine

1. Installation requires one engineer, and one laborer per 10 engine power factors to handle the heavy lifting and to drag the thing into place.
2. Determine the DC for all Profession (Airship Engineer) skill checks necessary by adding 10% (rounded down) of the engine's power factors to the Repair DC for its type. The larger an engine is in comparison to the ship in which it is being mounted, the more difficult it is to properly secure and align the engine itself.
3. At the end of one month's work, the engineer must make a Profession (Airship Engineer) skill check against the DC determined in step 2. The check is based upon the engineer's ability, and is modified by a competence bonus of +5 if all expert laborers are used, or a penalty of -5 if the bulk of the laborers are of low quality.

   If the check succeeds, the airship engine is installed and ready for testing. If the check fails, however, the engine was not properly mounted and the engineer must attempt the check again next month, with a -1 circumstance penalty. This process continues, with the penalty increasing by 1 every month, until either the engine is successfully installed or the engineer fails five times. After the fifth failure, a new engineer must be brought in and work begins anew on mounting the engine.

   If the skill check fails as a result of the Engineer rolling a 1 on his skill check, the engine appears as if it were mounted properly, but it is not and suffers a catastrophic failure the first time it accelerates to its maximum speed (see the listing of engine types above for information on catastrophic failures).

Once the engine is successfully mounted, the rigging and extras may be attached to the airship in preparation for its first flight.

Repairing an Engine

Airship engines often take damage, whether from being pushed too hard by the captain of the vessel or as a result of combat. When the hull points for an airship's engine are reduced, they do not naturally repair themselves, but must be patched up by a skilled engineer.

Repairing an airship engine requires a use of the Craft (Airship Engine) skill (DC as shown on Table 1.4). The total cost of the Craft attempt is the number of hull points that need to be restored times the repair cost listed above for the engine type. So, for example, a fiendish engine that has 50 hull points of damage would cost 2,500 gp to repair. The use of the Craft skill is otherwise as detailed in the Player's Handbook.

Airship Templates

Once your ship's structure is decided upon, you may wish to apply an airship template to the vessel. This template can add a variety of different abilities to the ship for an additional cost, as noted below. Some templates may be added to a vessel after its construction, but many must be added to the ship's plans as it is built, as they are so integral to the vessel's structure. Only those templates noted with an asterisk below may be added to a vessel after initial construction.

Armored*

Putting armor along the sides and bottom of an airship is a difficult and expensive task, but many military organizations and adventurers find the practice quite useful. Unfortunately, armor increases the weight of a ship drastically, making it handle much more poorly than most vessels its size.

Benefit: The airship's armor class is increased by 4.

Penalty: The ship is treated as if it were one size category larger for purposes of determining maneuverability only. Colossal+ vessels have a base maneuverability of -1 when this template is applied to them.

Cost: 10,000 gp per size category

Aquatic

Most ships are designed to land on solid ground, as the air rudders and turrets built into them are far from waterproof. The aquatic template essentially shores up all these potential leaks and allows an airship to float upon water as if it were an ordinary vessel. It also provides the mechanism an airship needs to sail upon the waves. This template is essential for ocean voyages, and can hide an airship's true nature from prying eyes.

Benefit: The airship can land and sail on water. Non-aquatic airships take in water at a rate of one ton per minute per size category. Each ton of water taken in reduces the power factors of the engines by 1. If the ship fills up completely, it sinks.

Penalty: Aquatic ships cannot have bottom mounted turrets. Aquatic ships also require two wheels, one for the air rudder, and one for the water rudder, taking up an extra 10'x10' area of deck space. Not all air pilots are trained for water operation; the two skills are quite different.

Cost: 1,000 gp per size category

Covered*

Military vessels, especially those designed to transport troops rather than engage in combat themselves, have a great need to protect their crews from hostile fire. Covered vessels are constructed without open decks—navigators and pilots must look out through ports dotted along the edges of the vessel to take bearings.

Benefit: The crew never suffers damage from a critical hit. In addition, crewmembers are never lost overboard if the ship heels over. The crew is also protected from most area effect spells, including *fireball* and the like.

Penalty: All navigation and piloting skill checks suffer a -4 penalty due to the decreased visibility. This type of airship cannot have sails and suffers from reduced maneuverability, taking no benefits from wind.

Cost: 5,000 gp per size category.

Dirigible*

If the tonnage an airship engine must lift is reduced, the cost of the engine can also be drastically reduced. Thus, engineers constantly attempt to come up with new and more innovative ways to reduce the need for lift from the airship engine. The most common method for reducing the weight the engine must lift is the use of hot air or other, lighter than air gases contained in a rigid or semi-rigid bladder. While this drastically reduces the maneuverability of the airship, it is also a useful method for bringing down the cost of the airship's engine by a huge amount.

There are two types of dirigible—rigid and semi-rigid. Rigid airships have bladders constructed around a light framework, often built from wood struts or ceramic boning. These rigid airships are not able to hold the same quantity of lifting gas, but they are far easier to control than semi-rigid dirigibles.

The semi-rigid dirigible is simply a massive bladder filled with gas; ropes or other loose restraints are used to keep the bladder in some semblance of shape. While these types of dirigible are able to contain a massive amount of lift gas, they are difficult to control and are almost always at the complete mercy of whatever wind currents happen to be in the area. Without the ability to retain its shape, the semi-rigid bladder acts as much like a sail as a lift system and makes its ship very difficult to fly. While favored by hobbyists or pleasure cruisers, the semi-rigid bladder is almost never used for merchant or military vessels.

Note that a semi-rigid bladder is capable of lifting a ship off of the ground without any engine at all. A few ships are built this way, and manage to derive their forward propulsion from air oars, turbines, or simply sails. Though unwieldy, engineless dirigible ships are inexpensive, and require no magic to construct. GMs running low or no-magic campaigns may consider using this template for all their ships.

Benefit: The rigid bladder reduces the weight of the airship by one ton for every 100 gp spent on the bladder, up to a maximum of 75% of the ship's tonnage. The airship's weight must be reduced by at least one-half or the dirigible is simply too small to do any good.

Semi-rigid bladders offer up to 100% weight reduction (with the same minimum weigh reduction of 50%) and cost only 50 gp per ton of weight reduction.

Penalty: For every 25% (or fraction thereof) by which the tonnage of the airship is reduced, a rigid bladder reduces the maneuverability by one and a semi-rigid bladder reduces the maneuverability by two.

Cost: 100 gp per ton of weight reduction for a rigid bladder, 50 gp per ton of weight reduction for a semi-rigid bladder.

Space Required: The dirigible bladder is always equal in length and beam to the airship and floats above the airship's sails. The bladder has volume equal to twice the tonnage it reduces (thus, a bladder that reduces an airship's tonnage by 50 tons would have a volume equal to 100 tons). A dirigible is a huge target, and takes up one critical slot per 2 tons of weight reduction it provides. It also has one hull point per ton of weight reduction and takes up 5 square feet on the airship's deck (for the anchor ropes, burners, or gas canisters) for every 50 tons by which it reduces the airship's tonnage. When a dirigible suffers 25% or more of its total hull points, it begins to lose gas and provides 10% less weight reduction every round until it provides no weight reduction at all.

Keeping the Dirigible Inflated: The cost of a dirigible includes a burner or gas canister to keep the bladder inflated. For every 100 tons by which the bladder reduces the tonnage of an airship, it requires one ton of wood to keep the bladder inflated for four hours. A ton of fuel wood for this purpose costs a mere 50 gp and is easily obtained in most airship ports.

Gas-filled dirigibles require one canister of gas per 100 tons of weight reduction per 4 hours. A case of eight canisters takes up one ton of space on the airship and costs 500 gp.


'03

Dirigible (anti-grav)*

Anti-grav engines are part of the *Oathbound* campaign setting from Bastion Press. These devices are powered by two rare substances, a potent metal known as slade, and oil from the glands of the moab whales. A GM who imports these two substances into his campaign may allow his players to use anti-grav technology in other settings.

For those with a great deal of money, the anti-grav approach is the way to go. Anti-grav engines are essentially extremely compact dirigibles fueled by magic rather than by any material substance. They reduce a ship's weight to zero, and allow it to ascend and descend as well. Anti-grav dirigibles allow a ship to get by with a very small engine, or even no engine at all. If the ship is not given an engine, forward propulsion must be achieved by some other means, likely through a combination of sails, turbines, and air oars.

Benefit: The anti-grav dirigible is compact, and can control a ship's ascent and descent without the need for engine. It also increases an airship's flight ceiling to 1,000 feet. Anti-grav ships can hover at a fixed altitude indefinitely without expending any fuel at all. These dirigibles are very simple devices, and require little maintenance or fuss.

Penalty: Anti-grav dirigibles are extremely expensive, and require the services of a spellcaster to operate.

Cost: 10,000 gp per size category of the airship (for the dirigibles), plus 23,000gp per ton of the airship (for the moab oil). Anti-grav dirigibles are rarely employed on large ships due to the extravagant cost.

Space Required: The dirigible takes up one ton per ten tons of the airship to be lifted, and one critical slot per three size categories of the vessel. The dirigible has a hardness of 5, and 5 hull points per ton it takes up.

Keeping the Dirigible Charged: An anti-grav dirigible is fueled by spells, cast directly into its central chamber. It is not the spells themselves, but merely the spell levels that count. Initializing the dirigible is costly, requiring 57 spell levels per ton of the airship (included in its price). However, once the dirigible has been charged, it remains charged permanently, or until deliberately discharged. To raise a ship, a spell is cast into the chamber. The ship then begins rising a number of altitude bands per round equal to the level of the spell cast. To stop the ascent, tap on the brake, and the ship returns to a hover. A further tap on the brake sends the ship into a descent, of up to 5 altitude bands per round. Unfortunately, once the ship begins to descend, its fall cannot be slowed unless another spell is cast into the chamber. Each spell level cast reduces the fall by one altitude band per round. When piloting an airship equipped with anti-grav dirigibles, it is best to pick a single altitude and stay there throughout the trip.

Glider

When this template is applied to an airship, the ship is equipped with side-mounted sails. These sails are reinforced and strengthened by the template, allowing them to be used as massive glider wings. While a glider is not the most effective means of flight for long distances, vessels that fly through areas in which thermals are common find gliding to be an excellent use of resources and time.

Benefits: A glider can float for long distances without engine power, descending at a rate of 10 feet for every 50 feet of forward distance traveled. More importantly, a glider that is able to move through a series of thermals can quickly rise to great altitudes, then glide down slowly without needing to use fuel at all. Glider ships do not crash if they run out of fuel or suffer engine failures, assuming there is a place to land.

Airships with the glider template are also better able to weather turbulence. When entering or leaving a thermal, the pilot of a glider-equipped airship receives a +5 circumstance bonus to any Piloting skill checks necessary due to turbulence. This bonus is decreased to +2 for any other Piloting skill checks necessitated by turbulence.

Glider-template airships also receive greater lift from thermals, rising an additional altitude band per round per 5 full points of the thermal's lift capacity.

Penalty: The side-mounted sails can only be deployed as gliders when the airship's engines are not in use. In addition, the Pilot suffers a -2 circumstance penalty per size category of his airship when making any Piloting skill checks due to wind or other weather conditions, not including turbulence. Each side-mounted sails has 5 hull points per ten tons of the vessel, and takes up one critical slot per three size categories of the ship. Side-mounted sails take damage before the hull if the glider is ever rammed broadside. If the side sails of the airship are ever destroyed, the airship cannot glide until they have been repaired or replaced.

Cost: 5,000 gp per size category.

High Flying

Most vessels cannot fly more than 500 feet above the ground due to the inherent weaknesses in the design of airship engines. A high flying airship, however, overcomes this limit by strengthening the frame of the vessel to withstand higher engine power factors and redirecting the engine exhaust to provide more lift and less thrust. While the vessel is slower and less maneuverable in general, it is able to fly so high that it is likely that no other airships are able to pursue it. Merchants and travelers favor high-flying airships, making them very profitable, despite their high initial cost.

Benefit: The first time this template is applied to an airship, the vessel's maximum cruising altitude is increased to 1,500 feet. The template may be applied more than once, but subsequent applications, while costing the same and reducing the speed and maneuverability of the vessel, only increase the cruising altitude by 250 feet.

Penalty: The airship's maneuverability is reduced by 1, and the power factors of the vessel's engine are reduced by 100 for purposes of calculating forward acceleration and top speed only. If this drops a ship's acceleration below 1, air oars or turbines must be installed for propulsion.

Cost: 15,000 gp per application

Reinforced

Airships that are likely to encounter armed enemies—or which must often fly through very hazardous weather—benefit greatly from being reinforced. This replaces much of the wooden infrastructure of the airship with more durable materials (such as darkwood or even iron) that are able to withstand blows more readily. The hull is also thickened and tempered more thoroughly, allowing it to withstand more punishment than would normally be possible. This template may only be applied once to any airship.

Benefit: The ship receives an additional number of hull points equal to 10% of its standard hull points.

Penalty: The extra space required for the reinforcement forces all bulkheads of the airship to be 5′ thick, greatly reducing the space below decks.

Cost: 3,000 gp per size category.

The Rigging

Most airships, like sailing vessels, have sails. The sails not only help propel the airship before the wind, but also increase maneuverability. The sails, masts, and all other bits and pieces associated with the sails are collectively referred to by airmen as the ship's rigging, and are a crucial component of any airship.

Any ship without rigging or that has its rigging destroyed loses all benefits listed under the rigging type. Ships without rigging can never benefit from wind speed.

There are several types of rigging available for airships, as detailed below.

Explanation of Rigging Descriptions

Each type of rigging is described in the following standard format:

Name: The name of the rigging type, followed by a brief description of its structure, appearance, and function.

Benefit: If the rigging provides any benefit to the airship upon which it is mounted, the benefit are described here.

Cost: The cost, in gp, of the rigging, per ton of the airship on which it is mounted.

Installation/Repair DC: This is the Difficulty Class for any skill checks made to install or repair the rigging.

Deck Space: This is the amount of space taken up on the deck by the rigging (see the further explanation in the next section).

Crew Required: The number of crewmen needed to man the sails per shift. Note that these crewmen must have no other jobs during their shift, as all their attention must be paid to the rigging.

Hull Points: The number of hull points possessed by the rigging.

Square Sail

The simplest rigging available, the square sail is essentially a great canvas sheet attached to a pair of crossbars (known as yardarms) affixed to the top and bottom of the mast. Square sails are the default rigging for any airship. They provide no benefits or penalties when flying the airship.

Benefit: +3 maneuverability, +10 acceleration.
Cost: 50 gp per ton of the airship.
Installation/Repair DC: 10
Deck Space: 1 ton per 10 tons of the airship, 1 critical slot per 50 tons.
Crew Required: 1 per ton of rigging.
Hull Points: 20 per ton of rigging.

Lateen Sails

These sails are more advanced than square sails, allowing the airship to benefit from their ability to tack against the wind, which provides not only increased speed when dealing with windy weather, but also an increase in maneuverability.

These sails are triangular, rather than square, and are attached to yardarms that can be moved around their masts, allowing for an increased ability to gain advantage from the wind and greater maneuverability.

Benefit: +4 maneuverability, +15 acceleration.
Cost: 100 gp per ton of the airship
Installation/Repair DC: 15
Deck Space: 1 ton per 10 tons of the airship, 1 critical slot per 50 tons
Crew Required: 2 per ton of rigging space
Hull Points: 20 per ton of rigging

Panel Sails

The most advanced rigging, the panel sail is actually a number of smaller sails attached to masts along lines, rather than rigid yardarms. These triangular sails can thus be moved about more easily and fastened into a wider variety of positions to catch the wind better and improve the maneuverability of the airship. Though they do take up more space on the deck, panel sails are so highly regarded they are almost always used on merchant or military vessels.

Benefit: +5 maneuverability, +20 acceleration
Cost: 150 gp per ton of the airship
Installation/Repair DC: 20
Deck Space: 1 ton per 10 tons of the airship, 1 critical slot per 50 tons
Crew Required: 3 per ton of rigging
Hull Points: 20 per ton of rigging

Deck Space and Rigging

Rigging takes up a great deal of space on the deck of an airship, what with the lines used to secure sails and the masts. Each of the sail types listed above has a deck space requirement. Note that this is not the actual amount of space taken on the deck by the rigging, but is instead representative of the amount of space on the deck that must be kept clear around the rigging.

The rigging itself is normally composed of one mast for every 2 tons of space taken up by the rigging. This mast occupies the center of the area and radiates a series of yardarms, booms, lines, and other paraphernalia used to control the sail through the rest of the area. While sailors can move freely through these areas as they go about their business aboard the airship, the space cannot be used for weapons, cargo, or any other purpose.

Height of the Rig

The masts of an airship vary in height depending on the length of the vessel and the number of masts it has. A ship with only one mast generally has a single mast that is 2/3 the length of the airship itself, rising high above the deck to catch the wind. If the airship has additional masts, each of these is rarely more than 2/3 the height of the main mast, which is at the center of the airship. Masts should be as evenly spaced as possible when diagramming the airship—a bunch of masts all crammed together on the deck can't realistically catch any air at all.

Rigging the Ship

Once you have decided on the type of rigging you'd like to see on your airship, follow the steps below to install it on your ship. Because most airships are not built to float on the water, be aware that it is possible to mount sails all over the airship, though side-mounted and bottom-mounted sails may sustain significant damage during times of battle.

Installing the Rigging

1. Determine the market value of the airship's rigging by multiplying its per ton cost, as noted above, by the total tonnage of the airship to which it is being attached. Larger airships require larger sails, which are more expensive.
2. Ten laborers are required for every ton of rigging installed. A single engineer is required regardless of the rigging's size.
3. Pay one-fifth the market value of the airship's rigging for the raw materials for three days of labor.

Note that additional shifts reduce this time by one day per extra shift—so, for example, working three shifts reduces the time per skill check to a single day.

4. At the end of the work period, the ship's engineer must make a Profession (Airship Engineer) skill check against the Installation DC of the airship rigging, as noted in its description above. The check is modified by expert or poor quality laborers, by +5 or -5 respectively. If this check succeeds, multiply the result of the skill check by the DC of the check. If the result, plus any progress made during the installation process for previous attempts is equal to the value of the airship rigging, it is successfully installed. If it is not equal to the value of the rigging, simply note the progress made so far, and add it to the results of next week's installation.

   If the skill check fails, however, no progress is made and another attempt can be made after three more days of labor.

Piloting Components

After the hull, engine, and rigging have been constructed and installed, it is time to take a look at ways to steer your airship. The simplest, and most basic, method involves a massive 'fin' rudder mounted below the engine exhaust at the aft of the airship, which directs the ship using air resistance. More advanced steering mechanisms involve mounting the engine on a rotating block, allowing the pilot to directly push the ship in the correct direction by manipulating engine's exhaust and thrust. The most advanced methods use a number of smaller engines mounted along the sides of the ship, each of which is triggered when needed by the pilot. Every piloting component has its own benefits (even if simply a low cost) and drawbacks (most of which revolve around the expense of maintaining the delicate components).

Each of the available piloting components is described in more detail below, along with price information. Piloting components are installed when the hull is built, and require no separate installation work.

Air Oars

Air oars are essentially similar to oars used for propelling ships through the water, with the exception of a few key differences. Air oars are not fitted with paddles, but wide sails that collapse through a special mechanism when the oars are drawn forward. When the oars are pulled back, the sails open up to catch the air. Oars provide excellent thrust and maneuverability, but are easy to damage, and require a sizable number of crewmen to operate. One pair of oars is generally employed per size category of the airship.

Cost: 1,000 gp per size category of the airship
Bonus: +3 to maneuverability, +20 to acceleration
Hull Points: 1 per 5 tons of hull size
Crew Requirements: 4 per size category of the vessel
Space Requirements: 2 tons per size category of the vessel
Critical Components Spaces: 1 per 2 size categories of the vessel

Air Rudder, Basic

Similar in functionality to the rudder used on a sailing ship, air rudders resemble sails mounted along the rear or bottom of the airship. These are directly connected to the wheel of the airship and provide the main source of steering available to the pilot. The basic air rudder consists of a wooden frame and canvas sail attached to the back of the airship, just below the engines. A complex linkage between the airship's wheel and its rudder is found below decks, allowing the pilot to control the airship from on the deck.

The basic air rudder is always as tall as one-third of the airship's length or width, whichever is greater.

Cost: None
Maneuverability Bonus: 0 (but reduces the maneuverability of the vessel by 2 if destroyed)
Hull Points: 1 per 10 tons of hull size
Crew Requirements: Pilot only
Space Requirements: 1 ton just below the wheel
Critical Components Spaces: 1 per 3 size categories of the vessel

Air Rudder, Flexible

The flexible rudder is an elvish innovation that allows an airship to maneuver more adeptly in calm winds, but which is much less effective in windy conditions. The flexible rudder also requires more crewmen, as it relies on a sail-like rigging to facilitate rapid maneuvers. This rigging is located in the same area as the linkage between the wheel and the rudder, making the crewmen completely dependent on the commands of the pilot, as they cannot see the direction the airship is taking.

Cost: 50 gp per 10 tons of the vessel
Maneuverability Bonus: 3
Hull Points: 1 per 10 tons of hull size
Crew Requirements: Pilot plus two crew members per 50 tons of the vessel
Space Requirements: 1 ton plus 1 ton per 50 tons of the airship, located just below the wheel
Critical Components Spaces: 1 per 3 size categories of the vessel

Altitude Crystal

Pilots must keep a constant eye on the altitude of their airships if they want to keep them from cracking up on the side of a mountain or making an unexpected splash over a lake. The altitude crystal is a small gem, usually a ruby of other colorful stone, which levitates inside a crystalline tube that is marked to denote altitude bands from 50 feet to 1,000 feet. At a glance, the pilot can tell the altitude of his airship, allowing him to avoid potentially lethal impacts with the earth. The crystal provides a +2 circumstance bonus to any Piloting skill checks the pilot makes when the vessel is within the first two altitude bands (between 0 and 100 feet). It also prevents collisions with the ground due to haze.

Cost: 3,000 gp
Maneuverability Bonus: None
Hull Points: None
Crew Requirements: Pilot
Space Requirements: None
Critical Components Spaces: 1

Drag Chutes

Possibly the fastest method of turning, drag chutes have the distinct disadvantage of only being useful once every few rounds. Composed of woven spider silk, the drag chutes are deployed whenever a turn is called for, and then reeled in when they are no longer needed. Unfortunately, a drag chute can only be used to turn a single direction in a round, as it is simply thrown over the side and allowed to pull the ship

around as the air resistance fills the chute. Once a drag chute is deployed, it must be drawn in during the following round (requiring 3 crew members per size category of the vessel) and may not be deployed again for two rounds per size category of the vessel. Optionally, a drag chute can be cut away, requiring only one crew member, but ensuring that the chute cannot be used again.

Cost: 300 gp per size category of the vessel
Maneuverability Bonus: +5 (only turns one direction per round)
Hull Points: 2 per size category of the vessel
Crew Requirements: 3 per size category of the vessel
Space Requirements: 1 ton per size category of the vessel
Critical Components Spaces: 1

Engine Swivel

By mounting an engine on a swivel, an airship gains a great deal of maneuverability. This connects the engine directly to the wheel of the airship, allowing the pilot to directly control the way the force of the engine is used to steer the ship, rather than relying on other mechanisms to swing the ship around. While one of the most expensive methods for steering a ship, it is also one of the sturdiest and least likely to be damaged by a critical hit.

Cost: 2,000 gp per size category of the vessel
Maneuverability Bonus: +3
Hull Points: 5 per size category of the vessel
Crew Requirements: None
Space Requirements: None (occupies the same space as the engine)
Critical Components Spaces: 1

Engine Sync

An engine sync balances engine output for an airship with multiple engines. It is a small magical device that runs between all the engines and is never directly handled by the pilot or crew. An engine sync removes the -2 cumulative penalty to Profession (Airship Pilot) skill checks caused by a ship having more than one engine.

Cost: 2,500 gp per engine
Bonus: Eliminates penalty for multiple engines
Hull Points: 5
Crew Requirements: None
Space Requirements: 0
Critical Components Spaces: 1

Propellers

Linked to gnomish chain mechanisms, propellers are mounted on the sides of ships and turned by crewmembers using cranks and pedals. These gnomish inventions offer improved maneuverability for the vessel they are attached to, and take up relatively little space. Unfortunately, they are very delicate and easy to damage, making them a poor choice for most warships.

Cost: 500 gp per ton of the vessel
Maneuverability Bonus: +3
Hull Points: 3 per 10 tons of the vessel
Crew Requirements: 2 per 20 tons of the vessel
Space Requirements: 1 ton per 20 tons of the vessel
Critical Components Spaces: 1 per 2 size categories of the vessel

Steering Engines

Similar in nature to propellers, steering engines are rows of smaller engines linked to a central steering mechanism and mounted down the sides of the airship. This complex system allows for very fast maneuvering, but also doubles the cost of operating the vessel each hour. Worse, the steering engines are prone to damage and are often wrecked during times of battle, leaving the vessel without the means to steer itself.

Cost: 10,000 gp per size category of the vessel. Reduces fuel efficiency by half.
Maneuverability Bonus: +4
Hull Points: 2 per size category of the vessel
Crew Requirements: None
Space Requirements: 1 ton per size category of the vessel
Critical Components Spaces: 1 per 3 size categories of the vessel

Turbine

An airship turbine is similar to the propellers listed above, except it is larger and mounted at the rear of the ship. Crew members turn a mechanism that is geared to spin the turbine at extremely high speeds. A turbine does not improve a ship's maneuverability, but its speed. Turbines are often used with dirigible type vessels to provide thrust in lieu of an engine. The turbine's main drawback is its high crew requirement.

Cost: 500 gp per size category of the vessel
Bonus: +30 to acceleration
Hull Points: 5 per size category of the vessel
Crew Requirements: 2 per size category of the vessel
Space Requirements: 1 ton per 3 size categories of the vessel
Critical Components Spaces: 1

Navigational Components

Piloting an airship requires good instincts and better reflexes, but navigating a ship is every bit as challenging, especially during poor weather when visibility is extremely limited. The proper navigational components can greatly ease the job of the navigator, allowing him to rely on accurate instruments rather than dead reckoning and the occasional landmark. At the speeds airships fly, even a small error in navigation can throw an airship far off course, making it that much more difficult to regain one's bearings and start heading in the right direction.

The navigational components presented in this section help airships of any size make their way through the skies without getting lost. Though costly, they can help prevent the loss of airships that drift off course and run out of fuel.

Airspeed Monitor

Navigating an airship requires a lot of information, especially if the travel is through areas with few landmarks, or if visibility is very poor. The airspeed monitor provides one of the most crucial pieces of information for the airship, its current speed in miles per hour. When this item is onboard, the navigator receives a +2 circumstance bonus to all Navigation skill checks.

Cost: 5,000 gp
Navigation Bonus: +2
Hull Points: 0
Crew Requirements: Navigator
Space Requirements: None
Critical Components Spaces: 1

Orb Compass

While normal compasses are fine if you're dealing with two dimensions, airship navigators must often deal in all three. The orb compass is a set of two interwoven rings of copper surrounding a model of an airship. The inner ring rotates to show the heading of the airship in standard geographical terms (north, south, east, west) while the outer ring rotates to show the current attitude of the vessel (nose up, down, heeled over, etc.). This allows navigators to more accurately track their progress and helps them guide the ship toward known thermals or around other weather patterns.

Cost: 3,000 gp
Navigation Bonus: +1
Hull Points: 0
Crew Requirements: Navigator or Pilot
Space Requirement: None
Critical Components Spaces: 1

Reactive Map

This arcane map changes to display geographical features (mountains, rivers, forests, etc.) as the airship passes from one area to the next. This area view shows 50 square miles, centered on the airship, and depicts all natural features within that area. Note that this map does not show structures or magical effects, which may cause problems for navigators who are unaware of their presence. Navigators may put their own notes on specific areas of the map, allowing them to mark the map up with indicators for man-made structures or magical zones.

If an airship route is marked on the map, navigators receive a +10 circumstance bonus, rather than the normal +2 circumstance bonus for all Navigation skill checks made while following the route marked on the map. Note that maps marked with various trade routes may cost up to triple the price listed below, depending on the routes and the difficulty of navigating the courses without the aid of the map.

Cost: 10,000 gp
Navigation Bonus: +2 (+10 if the map is pre-marked).
Hull Points: 1
Crew Requirements: Navigator
Space Requirements: None
Critical Components Spaces: 1

Tailing Link

Convoys of ships are relatively rare, but they do have their uses. For merchant houses who simply must move large supplies overland, it is often better to use a number of smaller ships, each of which can escape from an attack on its own, than a single large ship. In these cases, hiring navigators can be very expensive, and the investment in each navigator may remove the benefit of using multiple ships. Tailing links were designed to get around this need, as each link is attuned to a single guide ship. In even the worst weather, the pilot of a ship with a tailing link are able to determine where the guide ship is in relation to his own vessel. This remains true as long as the ships are within 30 miles of one another, allowing the pilot to follow the course of the guide ship without the need for a navigator on his own vessel. The guide links are identical to the tailing links, and any ship with a link can be tuned in as the guide.

Cost: 2,000 gp per ship
Navigation Bonus: None, pilot simply follows the course of the guide ship
Hull Points: 0
Crew Requirements: Pilot
Space Requirement: None
Critical Components Spaces: 1

Windspeed Pennant

Though the speed of the airship is important to the navigator, it is equally important for him to know how fast the wind is blowing and from what direction it is coming. Though the standard navigational rules account for a navigator periodically checking the windspeed, this magical item makes it much easier for him to keep an eye on things. When unfurled, even below decks, the windspeed pennant points in the exact direction the wind is blowing and displays the speed of the wind, in MPH, on its surface. This provides the navigator with crucial information needed for plotting his courses, and provides a +2 circumstance bonus to all navigation checks.

Cost: 5,000 gp
Navigation Bonus: +2
Hull Points: 0
Crew Requirements: Navigator
Space Requirements: None
Critical Components Spaces: 1

Shipboard Weapons

In campaigns that feature airships, it is inevitable for a fight to break out between two of these flying vessels. While longbows and spells might be enough to pick off the crew of an enemy ship, they don't cause the kind of immense damage one needs when attempting to wreck a vehicle. In this section, there are a number of weapons provided for the builders of airships, all built specifically for wreaking havoc against enemy flying vessels.

As noted in Chapter 4: Airship Combat, these weapons are devastatingly powerful and cause grievous harm to most creatures they strike. However, they are also horribly cumbersome and difficult to aim at small targets, making them relatively easy to avoid if you happen to be one. Unless otherwise stated, all shipboard weapons suffer a -6 competence penalty to attack rolls made against creatures that are not at least Huge in size. In addition, unless otherwise noted, the weapons below cause a critical hit whenever they strike a creature of Large size or smaller.

Note that a weapon's arc of fire is not a function of its type, but of how it is mounted (see below).

Ballista

Essentially an oversized crossbow, the ballista fires five-foot long bolts at enemy ships. While there are a variety of special bolts available for use, most ballistae rely on sheer force and the massive size of the projectiles to destroy their enemies.

Cost: 1,500 gp
Damage: 3d6
Critical: 20/x3
Range Increment: 200 feet
Type: Piercing
Space Requirements: 1 ton/1 critical space
Hull Points: 10
Crew Requirements: 2
Rate of Fire: 1 per 3 rounds
Ammunition Space: 1 ton per 200 shots
Ammunition Cost: 10 gp per 20 shots

Ballista, Whirling

While this device appears to be three ballistae mounted at right angles to one another, it is actually a single, very complex device. Where most ballistae can only fire once every three rounds, the whirling ballista uses an advanced gear-and-crank mechanism that allows it to fire every round by rotating on its horizontal axis. As the ballista rotates, the gears also cock the just fired ballista stock, which is then reloaded by the crew so that it is ready when it is rotated into position. When loaded with grappling bolts, the whirling ballista can quickly put a half-dozen or so grappling lines on another ship, making this a favorite weapon amongst pirates and other predators.

Cost: 6,000 gp
Damage: 3d6
Critical: 20/x3
Range Increment: 200 feet
Type: Piercing
Space Requirements: 1 ton/1 critical slot
Hull Points: 10
Crew Requirements: 2
Rate of Fire: 1
Ammunition Space: 1 ton per 200 shots
Ammunition Cost: 10 gp per 20 shots

Catapult

These weapons are capable of dishing out hellish damage, but are difficult to aim and calibrate. Because of this, catapults on airships are 'locked' in their aiming and are only able to hit enemy airships who are within specific distances of the airship on which they are mounted. So, for example, an airship might mount a catapult on its foredeck and lock that catapult at a range of 400 feet—the catapult may now only fire at enemy vessels which are 400 feet away from the airship and at the front of the vessel. This makes catapults ideally suited for firing at large, cumbersome ships, but almost worthless when launching an attack against smaller, more agile vessels.

In addition, firing a catapult is often a waiting game, and the gunner must have a readied action to fire on ships that enter the catapult's target range. It is also possible for a gunner to ready an action to fire the catapult whenever his ship brings an enemy ship into range, but the situation remains the same—the gunner must ready an action to have any hope of hitting an enemy airship. Catapults are indirect fire weapons, so they do not require an unobstructed line of sight to their target in order to fire. Targets receive no cover from other airships or other obstructions when targeted by a catapult, as the shot of a catapult is not fired straight ahead and may arc over obstacles. Concealment penalties still apply however.

Cost: 2,000 gp
Damage: 5d6
Critical: 19-20/x2
Range Increment: 100 feet (locked, see above)
Type: Bludgeoning
Space Requirements: 2 tons/1 critical slot
Hull Points: 20
Crew Requirements: 5
Rate of Fire: 1 per 5 rounds.
Ammunition Space: 1 ton per 20 shots
Ammunition Cost: 5 gp per 20 shots

Dart Launcher

A dart launcher does no damage to airships, but can be devastating to the crew members on the deck during a battle. Dart launchers do not cause an automatic critical when striking non-airship targets.

The dart launcher is never aimed at a specific target, but instead fires a hail of darts into a 20 ft. radius from the point of impact—this is treated as a grenade-like missile. Any target caught in the area of effect must make a Reflex save (DC 15) to avoid suffering damage from the darts. A successful save negates all damage from this attack.

Cost: 2,000 gp
Damage: 3d6
Critical: 20/x3
Range Increment: 500 feet
Type: Piercing
Space Requirements: 1 ton/1 critical space
Hull Points: 10
Crew Requirements: 3
Rate of Fire: 1 per 2 rounds
Ammunition Space: 1 ton per 50 shots
Ammunition Cost: 100 gp per shot

Fire Missiles

These magical projectiles are propelled forward by the controlled release of a *fireball* spell and deliver a potent explosive charge to their target on a successful strike. While these missiles are very popular on military crafts for their accuracy and damage, they are also feared by their crews, as a critical hit on a missile platform can easily destroy everyone nearby.

These weapons are normally mounted inside the airship, generally on the deck immediately below the main deck. Each missile mount holds four missiles at a time on a swiveling base that allows them to be aimed at any target at the same altitude as the weapon mount. Fire missiles may never be fired up or down—the nature of their propulsion system requires that they be fired in a relatively flat arc.

Fire missiles are essentially potions of *fireball* set into a special container, and are created much like any other potion.

Cost: 1,000 gp (mount and aiming platform only)
Damage: 5d6
Critical: 18-20/x2
Range Increment: 500 feet
Type: Fire
Space Requirements: 1 ton/1 critical slot
Hull Points: 10
Crew Requirements: 2
Rate of Fire: 1 per round
Ammunition Space: 1 ton per 20 shots
Ammunition Cost: 1,000 gp per shot

Fire Thrower

The fire thrower is a dangerous weapon, typically only mounted on warships or those cargo or passenger vessels with crews who don't mind the chance they'll be burned alive if the weapon is damaged or misfires. Built on a modified ballista body, the fire thrower launches canisters of alchemists' fire through a ceramic tube. A simple steel platform attached to the cables of the ballista's arms is propelled forward when the firing mechanism is triggered. This pushes the clay canister of alchemists' fire up through the aiming tube and, with any luck, onto the deck of the target vessel.

Fire throwers have the distinct advantage of igniting the vessels they hit, causing continuing damage as the flames race across the structure of the airship. Whenever a fire thrower scores a critical hit, it has succeeded in igniting the flammable surface of an airship, creating a small fire. See Chapter 4: Aerial Combat for information on shipboard fires and how they can be extinguished.

Note that, if a fire thrower is ever destroyed, a fire equal in size to the space taken up by the fire thrower immediately replaces the weapon. The crew suffers damage as if hit by a shot from this weapon, as well.

Cost: 6,000 gp
Damage: 5d6
Critical: 19-20/Fire (see above)
Range Increment: 50 feet
Type: Elemental
Space Requirements: 1 ton/1 critical slot
Hull Points: 5
Crew Requirements: 4
Rate of Fire: 1 per round
Ammunition Space: 1 ton per 60 shots
Ammunition Cost: 250 gp per 20 shots

Lightning Bombard

This weapon looks like nothing so much as an elongated copper barrel mounted on a pair of squat wheels made of the same material. These wheels are actually rotating drums that contain the ammunition of the bombard—electrical energy.

When firing the bombard, its crew must indicate the target square and altitude band. They then make a standard attack roll against Armor Class 15. If the attack roll succeeds, the bombard lobs a blazing ball of lightning into the target square, completely filling it throughout the designated altitude band. The blazing electrical charge remains in place for 2d4 rounds, and detonates with hellish fury when any airship enters or occupies the square it hits.

The charge attacks the airship only—it is designed to damage large targets, and expends its full fury on the airship without harming the crew. Creatures above size Huge are also affected by the bombard, suffering damage from the charge in hit points rather than hull points.

If the attack roll misses, however, the shot has deviated. Treat this as if the bombard's shot were a grenade-like missile that missed its target. Determine the direction of the miss as normal, but roll 1d4 to determine by how many 50-foot squares it misses the target. To determine whether the shot was high or low, roll 1d6—on result of 1, the shot is one altitude band higher than intended, and on a result of 6 the shot hits one altitude band lower than intended. The shot is at the same altitude as intended on any other result.

Because the lightning bombard is an indirect-fire weapon, targets receive no cover from other airships or other obstructions when targeted by an electrical bombard. This is because the shot of a lightning bombard is not fired straight ahead and may arc over obstacles. Concealment penalties still apply however.

Copper hulled vessels are able to recharge spent lightning canisters. See the section on hull materials for details.

Cost: 10,000 gp
Damage: 5d6
Critical: —
Range Increment: 500 feet
Type: Electrical
Space Requirements: 1 ton/1 critical space
Hull Points: 10
Crew Requirements: 3
Rate of Fire: 1 per 3 rounds
Ammunition Space: 1 ton per 20 shots
Ammunition Cost: 100 gp per shot

Ram Spikes

These ten-foot long spikes are mounted on the front of an airship and are anchored to the frame of the airship's hull. They allow the ship to cause significantly more damage during a ram attempt, while preventing some of the damage taken itself. A ship equipped with ram spikes causes an extra 1d6 hull points of damage when ramming an enemy vessel, and suffers 1d6 fewer hull points of damage from the same ram. These spikes offer no protection against being rammed by another vessel, however.

Cost: 3,000 gp
Damage: +1d6 ramming
Critical: See above
Range Increment: —
Type: Piercing
Space Requirements: 1 ton at the front of the airship per size category of the airship/1 critical space
Hull Points: 1 per 5 tons of the airship

Crew Requirements: —
Rate of Fire: NA
Ammunition Space: NA
Ammunition Cost: NA

Razor Launcher

This weapon works by launching a spinning, toothed, metal disk at the target. When the disk strikes the enemy vessel, it rips into the structure, inflicting a great deal of damage. The razor launcher is constructed of two narrow metal forks attached to a heavy weight. The weight hangs over the side of the boat and is raised to load the weapon. With the forks now facing inward, the crew loads in a razor-sharp metal disk, so that it sits, vertically, in the track created by the twin forks. To launch the razor, the crew rotates the weapon, then releases the weight. This sends the weight down and the forks up and over—the disk is thus launched out of its track and into (hopefully) the enemy airship.

Cost: 5,000 gp
Damage: 8d6
Critical: 19-20/x2
Range Increment: 25 feet
Type: Slashing
Space Requirements: 1 ton/1 critical slot
Hull Points: 10
Crew Requirements: 5
Rate of Fire: 1 per 2 rounds
Ammunition Space: 1 ton per 50 shots
Ammunition Cost: 30 gp per shot

Mounting Weapons

Mounting weapons is much simpler than most other aspects of creating the airship, though there are several different ways in which each weapon may be mounted depending on its position on the airship and the desires of the engineer. Though most weapons are mounted on the airship's deck to provide them with the largest fields of fire and simplest access by the crew, some weapons are mounted below decks or in external turrets, where they can be used to target airships below the vessel or in order to provide greater protection for the weapon crews.

Mounting a weapon requires eight laborers for every ton of the weapon's space requirement and a ship's engineer. The time necessary for the job is equal to four hours per ton of the weapon's space requirement. To succeed, the engineer must make a successful Craft (Airship Weapon) skill check (DC 10 + 5 per ton of the weapon's space requirement). Again, poor or expert quality laborers can adjust this check by 5. If the check succeeds, the weapon is installed correctly and is balanced and aligned with the deck of the airship.

If the check fails, however, the weapon must be removed (requiring the same amount of time it took to install the thing) and another attempt must be made to get it aligned properly.

Listed below are the various methods by which a weapon can be mounted, along with the benefits, drawbacks, and requirements for each one.

On the Deck

A weapon mounted on the deck is always mounted on the edge of the ship, where it has the greatest arc of fire and is best able to target enemy airships. This is the simplest and most common method for mounting airship weapons and is the most comfortable for the crew of the weapon.

Weapons mounted on the deck are placed upon a swivel, and can fire into a single quadrant (one of four 90 degree arcs arranged around the ships' center). Airship weapons are not designed to fire back onto the deck, and normally are not designed to fire straight up or straight down. Airship weapons can fire at targets within the ship's altitude band with no difficulty, but have some trouble tracking to fire at targets higher or lower than the airship to which they are attached.

A deck mounted weapon can only fire up or down at a 45° angle or less (i.e. the vertical distance must be equal to or less than the target's distance from the airship). That is, a ballista, for example, can fire at a target 50 feet (one altitude band) above its airship, but only if that target is at least 50 feet away from the ballista itself. This remains true at all ranges.

Turrets, Deck

The deck turret allows a weapon mounted on it to turn 360-degrees, firing into any of the airship's quadrants, including back over the deck of the airship. Deck-mounted rigging, however, if it exists, blocks the reverse quadrant. It is important to remember that a deck turreted weapon can only fire at targets in its own altitude band or above, because it would otherwise be firing down through the deck of the airship.

Cost: Deck turrets cost 1,000 gp per ton of space required by the weapon mounted upon them. Thus, a ballista that requires 1 ton of deck space would require a 1,000 gp turret. Note that a turret does not increase the space required by the weapon. Mounting a weapon on a turret increases the DC of mounting the weapon (see above) by 5.

Turrets, Side

A side turret is not mounted on the deck of the airship, but on the side, and is reached by means of a rope or wooden ladder hanging over the edge of the airship. The side turret allows the weapon to be fired at any target within the weapon's quadrant, regardless of its altitude in relationship to the weapon. The side turret is fully enclosed and mounted against the hull of the airship so the weapon and crew can rotate smoothly inside the turret and target enemy airships more easily.

Crew members within a side turret have 90% cover from anyone attacking from outside of the turret, but are denied their Dexterity bonus to their Armor Class because there isn't much space to move around in the turret, and stand a great risk if the airship is ever rammed. Any critical hit caused by a ram in the quadrant in which a side turret is mounted automatically damages the turret and its occupants. If more than one side turret is mounted in the same quadrant, randomly determine which turret suffers the damage.

A turret on the side of the airship still takes up space, it just doesn't take up deck space. Side turrets, as well as bottom turrets, add 1 ton to the airship's total tonnage. Because this tonnage cannot be used for anything else (you can't store cargo in it, for example) it should be marked as 'weapons tonnage.' Regardless of available space on the side of the airship no vessel may have more than one side turret per quadrant per size category.

Note that indirect fire weapons (such as catapults and lightning bombards) may not be mounted in side or bottom turrets.

Cost: Side turrets cost 5,000 gp per ton of the weapon they must accommodate and can only be fitted for dart launchers, fire throwers, ballistae, and whirling ballistae. The DC for mounting a weapon in a side turret is increased by 10.

Bottom Turret

Mounting a turret on the bottom of the boat is a good idea, allowing a single weapon to cover a very wide arc of fire that is normally not protected at all. The great cost of these turrets and difficulty of properly mounting a weapon in them makes them rare outside of military use, however. Fire throwers are the favored weapon for use in a bottom turret, allowing the weapon crew to bathe attackers from below with great gouts of fire. Bottom turrets are also excellent for destroying ground targets.

A bottom turret works much the same as a side turret, as the crew all sit within an enclosed area while working the weapon. They receive 90% cover from any attacks made from outside the turret, but also receive no Dexterity bonus to their Armor Class as there really isn't room to move around inside the turret.

A bottom turret can fire into any of the quadrants of an airship, but can only fire at airships in altitude bands below the airship. An exception to this is if an airship pilot manages to get his vessel over the top of another airship in the same altitude band (see Chapter 4: Aerial Combat); when this occurs, any airmen in a bottom turret are able to fire at will.

Bottom turrets, as well as side turrets, add 1 ton to the airship's total tonnage. Because this tonnage cannot be used for anything else (you can't store cargo in it, for example) it should be recorded separately as 'weapons tonnage.'

Cost: Bottom turrets cost 8,000 gp per ton of the weapon they must accommodate and can only be fitted for dart launchers, fire throwers, ballistae, and whirling ballistae. The DC for mounting a weapon in a bottom turret is increased by 15.

Special Ballista Ammunition

Ballistae are often loaded with specialized ammunition that can be used to achieve a desired effect in combat. While often much more expensive than a simple bolt, these tailored pieces of ammunition can provide a crucial edge in combat and see frequent use in airship battles.

Grappling Bolts: These oversized bolts are actually several bolts bundled together, each trailing a length of rope or wire. When fired, the bolts spread out from one another and their heads begin to spin as the air passes over them. On impact, the spinning heads are better able to burrow into the wood of the airship. The barbs running down the heads and onto the metal lengths of the grappling bolts also prevent the bolts from coming loose.

Attacks with a grappling bolt are resolved as a single attack by a normal ballista bolt. For every 3 hull points of damage caused by the attack, one grappling bolt is stuck in the side of the enemy vessel firmly enough to qualify as a hook in place for a boarding attempt (see Chapter 4: Aerial Combat for more information on boarding attempts). No more than 5 grapples may be attached with any single attack, as this is the number of individual bolts packaged into a single grappling bolt.

Note that no actual damage is caused when a grappling bolt is fired—the damage is calculated only as a way to determine how many grappling hooks are attached to the enemy ship. Grappling bolts are ineffective at more than 60 feet.

Cost: 20 gp per bolt
Damage: 3d6 (no actual damage—see above)
Range Increment: 20 feet
Type: Piercing

Lighters: Tipped with a clay jug loaded with phosphorescent liquid, lighters are used to mark targets in dim lighting conditions, such as during heavy precipitation, or when fighting at night. The light provided by the liquid is bright, but only when heavily concentrated and in reasonably large quantities—the gallon of it stored in the head of the ballista bolt is enough to coat a 5 sq. ft. area with light that is clearly visible within 500 feet and dimly visible out to 1000 feet. Whenever an airship is hit by a lighter bolt, it is immediately illuminated, reducing any concealment it may receive as a result of darkness or other visual obstruction (such as fog) by one category. An airship hit by more than one lighter has its concealment further revealed, until it is no longer concealed at all because of the light coating its surface.

Unfortunately, the material provides illumination only when exposed to air, and only lasts for 1d10 minutes. The reaction which provides the light is unstable, creating highly variable durations that make the light unsuitable for use as a light source. The fluid can be dissolved only through the application of lantern oil or other suitably flammable substances, requiring 10 gallons of the stuff to clear one 5-foot area covered by the lighter fluid. Obviously, most airship crews are difficult to convince of the wisdom in coating their decks with oil to put out the light.

The substance contained in lighters can be created using the Alchemy skill (DC 20).

Cost: 100 gp per shot
Damage: None (see above)
Range Increment: 100 feet
Type: —

Rigging Cutters: These ballista bolts are actually comprised of three bolts chained together with lengths of glass-studded leather. When fired, the bolts separate, and the chains form a triangle between them. As they pass near the masts of an airship, they cut lines, rip through sails, and otherwise tear up the rigging. While they are able to snap lines and tear the cloth of sails, they are stopped by just about anything substantial, such as the mast of an airship.

If they were more accurate, these bolts would be devastating to airships, but the instability of the weapon makes them really useful only at very close range against slow-moving targets. Unlike with other airship weaponry, critical hits by rigging cutters against airships deal triple damage. Any critical hit caused by rigging cutters is automatically applied to the rigging of the airship or, if the rigging has been destroyed, to any crewmen on deck.

Cost: 50 gp/shot
Damage: 1d8
Critical: 13-20/x3
Range Increment: 10 feet
Type: Slashing

Extras

The airship parts found in this section are of many types, from anchors to spotting towers. If you haven't found what you're looking for yet, it is most likely detailed here. Extras

take no time to mount, and their installation costs are included in their prices.

Anchors

It's important for an airship to have some way to keep itself in position when no pilot is on deck, or when the weather is too severe to allow normal flight. In these cases, the wise captain orders the anchor put overboard to keep the airship in place.

Anchors normally weigh one hundred pounds per ton of the airship they are designed to halt. Most airships carry more than one anchor, scattering them around the lower deck of the airship so that ship is not dependent upon a single anchor that can be easily cut by a ground force. Merchant airships often carry 50% more anchor weight than needed, while military vessels usually carry twice the required anchor weight.

While the anchor is down, the airship does not move from its location, though extremely high winds may push it about. For every 10 mph of air speed over 50 mph, the airship moves 10 feet per round while the anchor is down. Each additional 100 pounds of extra weight on the anchor (above and beyond the norm) increases the airspeed required to move the airship while it is anchored by 10 mph. For example, an airship with an anchor that weighs 200 pounds more than is required by its tonnage is not moved until the wind is blowing faster than 70 mph. Light anchors decrease the wind speed needed to move the ship by 10 mph for ever 100 lbs they are underweight.

Anchors dragging across the ground tend to be extremely dangerous—they cause 1d6 hit points of damage per 10 mph per 100 pounds of weight as they gouge across the earth. Because of this, most airship captains do not weigh anchor over an inhabited area, but instead drop their anchors over areas where they won't cause any harm for the locals.

Each anchor requires an anchor room on the ship of 1 ton in size per 5,000 pounds of the anchor in question. This room is used to store the anchor and the chains used to weigh and raise it.

Dropping and Weighing Anchor: Dropping anchor, the act of releasing the anchor from its position to the ground below, requires only a single round for every 1,000 feet of fall. Since most airships don't travel more than 500 feet off the ground, this means they can drop their anchor in one round. Once the anchor hits the ground, it begins slowing the airship at the rate of 20 mph per round, until such time as the airship is brought to a complete stop. This assumes the anchor is of the proper weight—for every 100 pounds of weight below the norm, the airship slows 5 mph less each round. Thus, it is possible for an anchor to simply not weigh enough to stop its airship, and the anchor simply bounces across the ground, smacking everything in its way.

Weighing anchor, or raising it up from the ground and returning it to the anchor room, requires one round per range band of altitude the airship is at currently. This requires the help of one crewmember for every 50 pounds of the anchor's weight. If the normal number of crewmen is not available to raise the anchor, the time taken to bring it back aboard is increased by one round per missing airman. Anchor winches (see below) reduce the crew quota needed to raise an anchor.

Anchor Danger: Being in the anchor room when it is dropped can be a horrible experience. The massive chains attached to the anchor spin out through the anchor's port and anything they touch can be ripped forward and crushed against the side of the hull, or more horrifyingly, could be partially yanked through the portal and chewed to pieces by the chain as it whips out and down.

Any creature in the anchor room when it is released must make a Reflex save (DC 15) to avoid being hit by the chain. Those who are hit by the uncoiling chain suffer 1d4 hit points of damage per 100 pounds of the anchor's weight. Those who roll a 1 for this save are snagged by one of the chain's links—perhaps their hand goes through the opening or a kink in the chain loops around their leg. If this occurs, the individual instead suffers 1d8 hit points of damage per 100 pounds of the anchor's weight for each round the anchor falls.

Cost: 20 gp per 100 pounds of the anchor's weight

Critical Spaces: 1 per anchor weighing at least 1000 lbs. GMs may allow the option of rerolling the location for any critical hit that strikes an anchor, as the anchor is, arguably, not excessively critical.

Hull Points: 1 per 100 lbs of the anchor's weight.

Anchor Hoists

Rather than rely on the brute force of their airmen to raise an anchor, many airship captains invest in a hoist, a bit of machinery designed to increase the amount of weight each airman working on the anchor can lift. A basic hoist allows a single airman to lift 100 pounds of anchor weight, rather than the usual 50 pounds. An advanced hoist increases this weight to 200 pounds, while a gnomish hoist increases the weight to 400 pounds. An anchor hoist fits into the same space as the anchor, it does not add to the space required for the airship.

Cost: 50 gp for a basic anchor hoist, 200 gp for an advanced hoist, or 500 gp for a gnomish hoist.

Space Required: The hoist takes up the same space as the anchor itself, as determined above.

Charts and Maps

Navigators rely on charts and maps to make their way from point to point—without an accurate chart or map, a navigator is often as lost as any land-dweller. However, good charts and maps are not cheap, and any airship that wishes to have the best navigational aids must be willing to spend a great deal of gold to acquire them.

To determine the cost for an average map, multiply the number of square miles it details by 20 gp. While they provide no bonus to any skill checks, these maps are required for any type of navigation other than dead reckoning.

Higher quality maps are available at the GM's discretion. Frequently-traveled areas, such as trade routes, are the places characters are most likely to find a good map for, but there are always the odd treasure-quality maps that show a new route in surprising detail. The cost of these maps is based on the insight bonus they provide, ranging from +1 to a maximum of +5 to any Navigation skill checks made while traveling through the area covered by the map. Double the bonus and multiply it by the map's base cost to determine the final cost of the map.

Cost: Square miles covered by the map, multiplied by 20 gp. Maps which provide a bonus cost this amount times twice the insight bonus (maximum of +5) they provide.

Defensive Netting

This netting rises up from the sides of the ship to the pinnacle of the airship's main sail, or to the top of the spotting tower, whichever is higher. It takes five rounds to raise the defensive netting, after which the netting begins providing its bonuses, as detailed below.

When raised, the defensive netting provides one-half concealment (20% miss chance) to any crewmember aboard the netted vessel. This concealment only applies against enemies which are outside the netting, and is applied to shipboard weapons. If a crewmember of a netted ship is targeted by personal missile attacks or spells from outside the netting, this concealment is increased to three-quarters (30% miss chance).

Defensive netting unfortunately interferes somewhat in the ship's rigging, reducing the ship's maneuverability rating by 1 when it is raised.

Cost: 50 gp per size category of the netted airship

Drop Lines

Boarding a ship isn't always done from below. Drop lines are simply sturdy ropes attached to pulleys on arms that swing out over the side of an airship. The harness that goes with the line is then attached to the rope and the boarder can slide virtually silently down the rope to an unsuspecting airship below. This is one of the few cases in which grapples are not required to board an enemy vessel, though the pilot of the boat from which the boarders descend needs to have nerves of steel and excellent skills to keep his airship in position. See the section on boarding in Chapter 4 for rules for using drop lines.

Cost: 100 gp per drop line, 10 gp per extra harness.

Space: 1 ton per 5 drop lines

Landing Gear

Basic airships can only land on specially built airship platforms, making it difficult to travel long distances or to remote areas. Airships with the aquatic template have solved this problem and are able to set down in water, but other ships require landing gear. Landing gear is a set of metallic telescoping legs that protrudes from the bottom of the hull, giving the ship a spider-like appearance. Crew members activate the landing gear with cranks. It takes 1 minute for landing gear to be either stowed or extended. A ship that flies with its landing gear down receives a -2 to its maneuverability, and a -5 to its acceleration. Landing gear has a hardness rating of 5, and two hit points per size category of the ship.

Cost: 100 gp per ton of the airship.

Crew Requirements: 1 per size category of the ship (only to extend or retract).

Space: 1 ton per 3 size categories of the airship / 1 critical component

Spotting Tower

Rising high above the deck of the airship, the spotting tower makes it much easier for lookouts to see approaching enemy ships. Unfortunately, spotting towers take a good deal of deck space to support and are often targeted by enemy spellcasters, especially during military encounters when the towers are used with heliographs to transmit messages (see Chapter 4: Aerial Combat for more information about coordinated attacks).

A spotting tower's bonus is based upon the height of the tower above the airship, which also determines the amount of space the tower takes up on the airship deck. For every 10 feet of height, the tower requires half a ton of deck space for support. However, every 10 feet of height also provides the scout in the tower with a +1 (max +5) circumstance bonus to all Spot skill checks made to detect other airships.

Cost: 10 gp per 10 feet of height.

Mapping the Airship

Once the size of an airship is known and all the critical components have been purchased, you may begin mapping your airship. We recommend using the airship character sheet provided at the end of this chapter. Because the size of an airship is given in tons, a unit that is conveniently 10' square on a map, it is a simple matter to sketch out the shape of the ship at whatever scale you choose. The recommended scale is one graph square = 5 feet, allowing enough fine details without bogging down in every minute nook and cranny of the boat. At this scale, four squares equal a ton of space.

The main deck of the airship is generally the widest part of the airship, with decks beneath it decreasing in size. Once the main deck has been mapped, you are able to draw in the airship's quadrants, which determine the arcs into which airship weapons can be fired. Find a point near the center of the airship and draw an 'X' through that point, with the spaces between the legs of the 'X' being as equal as possible. These spaces are known as the airship quadrants. See the deck plans in Chapter 10: Sample Airships, for examples.

When placing sails, remember to place them as evenly as possible along the deck or sides of the airship. No two masts may ever be adjacent to one another, but otherwise may be placed as you prefer on the deck of your vessel.

The pilot's wheel is always found on the main deck, and is generally located in the rear third of the vessel, closer to the rudder. Likewise, the space requirements for the wheel should always be found directly below the wheel.

In general, an airship should be laid out as cleanly as possible, with wide, shallow airships preferred over tall, narrow airships, so as to allow the vessel to slide through turbulence more easily. Of course, this is a fantasy concept—in your campaign world you may decide to have spindly, tower-like ships that rotate through the air on their long axes.

Racial Ships and Cultural Deck Plans

One aspect of ship mapping that is worth considering is how the airships of different races look. By choosing a certain style for each of the airship-building races in your campaign, you can build recognition in your players. If all your mind flayer airships have giant copper fins jutting from their tops, your players quickly come to realize that those glints of metal on the horizon might require a very, very cautious approach.

This sort of look and feel design can be applied to various nations, merchant houses, and pirate gangs. By giving the players a visual identity to apply to their enemies and allies, the GM makes it much easier to evoke a particular emotion or set the stage for a tense encounter.

Default Crew Positions

There are times when it is important to know where the crew of an airship is at any given time. Rather than keep a detailed account of where each member of the crew is during each round, simply draw the default positions onto the map. Unless there is a specific reason why a crewmember is not in that position, assume he can be found there at any point during his shift. This is also useful for determining who suffers damage when a critical hit or a spell cast from an enemy airship impacts the crew.

Roles of Airship Crews

The airship is a complex machine that requires a skilled crew, able captain, steady pilot, and clever navigator to keep running. This chapter details the roles of the crew, the amount of time each role requires, and the skills necessary to fulfill the duties of the role. While not every crewman can be an effective captain, neither is every captain capable of handling all the duties needed on his ship.

Officers

The difference between officers and standard crewmen is one of authority and training. An airship officer has a very specific set of skills that he uses to perform his task, and has the authority to give orders to the crewmen in order to ensure the continued functioning of the airship as a whole. While not all officers are equal (the captain is certainly higher in rank than the pilot, for example), all officers are above the standard crewmen in ranking.

On most ships, the actual authority of officers varies quite a bit. A pilot, for example, normally has authority to order around anyone he needs to in order to keep the ship flying, but would find his ability to issue orders severely limited in other cases. Experience plays a large role here as well—a grizzled old crewman who has worked on the airship for twenty years is going to have more respect from his mates than the new pilot that just signed on.

These differences are best summed up with a sort of 'ship's alignment.' The more lawful the alignment of the airship's crew, in general, the more rigidly they adhere to the rankings and power structures listed below. The more chaotic the crew and officers of a ship, the more likely they are to deviate from these rankings, following the orders of whomever seems to be the most experienced or authoritative at the moment. On evil ships, the rankings are enforced by punishment and fear, while on good ships the power structure of the airship is based on merit and personal skill rather than any threat of force or pulling rank.

All officers aboard an airship receive a share of the airship's profits, from whatever source those profits come. This is the real separating line between the officers and those below them—if the airship prospers, the officers do as well, but they also suffer when the airship isn't bringing in any cash. Typically, the amount of profit sharing hovers around 2% for the pilot and navigator and 3% for the captain. Lieutenants, while receiving valuable training in how to run a ship and lead a crew, typically receive only a cut of 1% of the ship's profits, and then only if they are amongst the highest ranking lieutenants aboard the airship. Normally the top three lieutenants share this small profit, and are happy to get it.

Apprentices always receive a small salary rather than a share of the airship's profits, which is generally just enough to keep them in spending money for shore leave. Apprentices are expected to work for such low wages because of the opportunities afforded them by their position. Some day, the reasoning goes, the training turns into a high-paying, prestigious officer's position aboard an airship and is worth the sacrifices the young men and women make.

The Captain

Ultimately, the captain is responsible for the successful running of his vessel, from take off to landing. As the leader of the vessel, the captain issues the orders for others to follow and coordinates the activities of his officers for maximum effect. While 'on deck' the captain keeps his eye on every aspect of the ship and listens to the reports from his runners in times of crisis. In turn, the captain bellows the orders that keep everyone else doing what they need to do and offers advice to help his officers keep an eye on brewing trouble.

The captain, however, has less of a role in the day-to-day running of the ship than he does during times of crisis. If there is no current obstacle or problem facing an airship, the captain may make a single Level check (1d20 + the captain's level; DC 20) to bolster the efforts of his crew. If this check succeeds, all officers aboard the ship receive a +2 morale bonus to any skill check they make during the normal course of their duties. If the check fails, there are no negative repercussions, the captain is simply unable to motivate his men to do their best that day.

During a crisis, though, the captain is a whirlwind of action and his words can save or doom his airship. Once each round, the captain of an airship can assist any member of his crew with a skill check. The captain must be able to see the crewman and the crewman must be able to hear the captain. If both of these conditions are met, the captain is allowed a single Level check (DC 15). If this level check succeeds, the captain is able to help the crewman, who then receives a +4 competence bonus to the skill check. The captain may offer this support as a free action at any time during the round, though not if he is currently flat-footed.

On the other hand, the captain is a symbol of his airship's power and majesty. If the captain falls in battle or is captured by enemies, the entire crew of his airship suffers a -1 morale penalty to all skill checks, attack rolls, and damage rolls until the battle ends or the captain is revived or rescued.

The captain spends a full shift of 10 hours each day overseeing the duties of his officers and watching the crewman go about their business. The captain may miss one of his shifts without causing undue problems on his ship, but for each subsequent missed shift, the crewmen and officers suffer a -1 circumstance penalty to all skill checks related to handling the ship. This penalty persists until the end of the next full shift the captain visibly works.

There is only ever one captain aboard an airship and that captain is the ultimate authority for everything that happens on the airship.

Pay Per Day: Airship captains are paid very well: 10 gp per day when not carrying a cargo, or 3% of the cargo's value upon delivery.

Needed: Every airship has one captain, and no more than one. The captain is the ultimate authority on an airship, and any airship without a captain is in dire straits indeed. All Piloting and Navigation skill checks made while an airship has no captain suffer a -2 morale penalty, as the officers attempt to keep their chins up.

Pilot

Pilots handle the actual steering and maneuvering of their airships. Their duties are very demanding when close to geographical features, or when landing and taking off, but most pilots have a great deal of time to relax during their journeys. Few crewmen begrudge the pilots their leisure, however, as it is the pilot who is most directly responsible for the survival of an airship during bad weather or combat.

Pilots generally have from one to three apprentice pilots who actually handle the wheel during standard flights, but only when there is no immediate danger. These apprentices are learning the ropes and do nothing without the direct guidance of the pilot—if they are caught unaware by a sud-

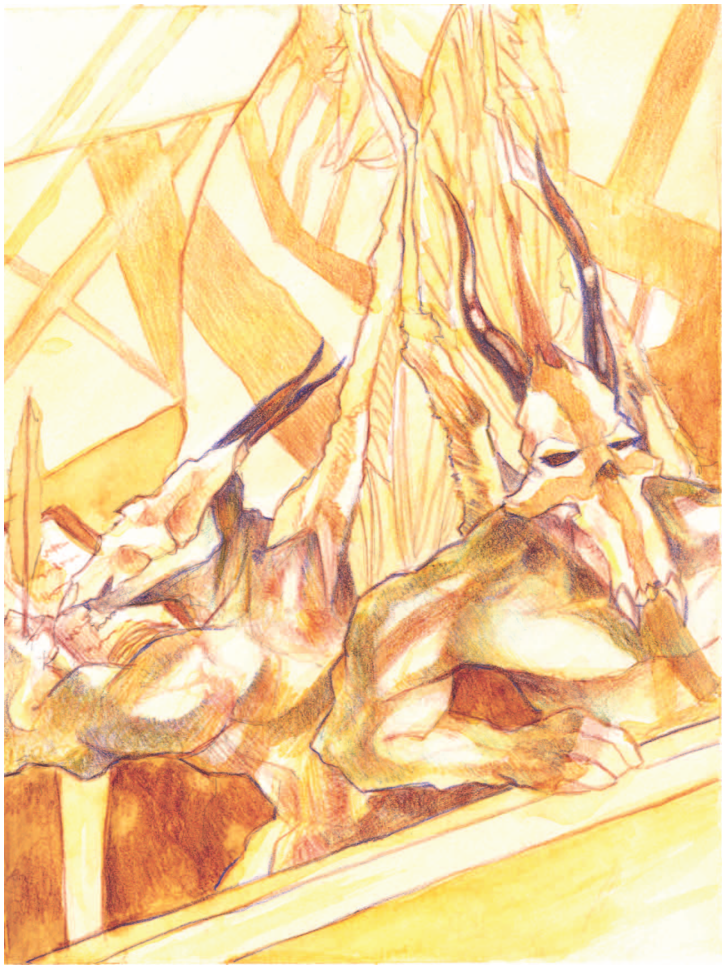
den storm, strong winds, or an attacker, the apprentices are instructed to perform no action other than moving away from the wheel to let the pilot take over. See 'Apprentices' below, for more information.

A pilot spends an eight-hour shift each day overseeing his apprentices or directly manning the wheel before handing over the wheel to another pilot. During bad weather or combat, pilots remain at the wheel unless killed or forcibly removed.

The number of pilots on a vessel changes based on the distance the vessel is going to travel. For day trips, it is rare for an airship to have more than a single pilot. Ships that plan on traveling for more than a day, however, always have at least three pilots aboard, each of which takes an eight-hour shift during each day of the journey. Airships that take particularly harrowing journeys often bring along an extra pilot or two, just in case one of the main pilots suffers an injury or is otherwise unable to attend to his duties.

Pay Per Day: Pilots receive 5 gp per day or 2% of their cargo's value.

Needed: At least one pilot is needed for every shift the airship intends to fly during the day. Each pilot is entitled to one day off per week, making it necessary to bring along extra pilots if the flight is going to last for one week or more.



Navigator

The navigator is a crucial member of any airship crew. While the captain is the ultimate authority on the course a ship takes, the navigator defines the courses a ship can take and ensures the vessel remains on the course chosen by the captain. While some ships are able to run very short runs of a few hundred miles along well-charted geographical landmarks without a navigator, most ship crews believe running without a navigator is simply bad luck waiting to happen. On very small ships, the captain may very well take on the role of the navigator himself, but it is far more common for the captain to take over piloting duties rather than the measurement-intensive navigator job.

A navigator normally works for eight hours each day and spends the majority of that time overseeing the efforts of the crewmen and apprentices assigned to him by the captain. Air speed measurements are taken very regularly, sometimes as often as every ten minutes. Likewise, it is not uncommon for a navigator to spend one minute out of every three verifying the position of the airship using a compass, backstaff, and his charts. Though the navigator may not need all the measurements, bearings, and latitude findings he takes, the sum total of that knowledge is needed to keep the ship on course and to chart new courses.

Most navigators have at least two apprentices working with them at all times. These young men and women ferry the readings to the navigator from the crewmen who take them. As they gain experience, they often take over some of the less-demanding tasks for the navigator and begin to assume a bit of the officer's position, particularly as relates to overseeing the duties of crewmen assigned to the navigator.

Airships that fly for fewer than eight hours during a given trip seldom use more than one navigator. Airships which fly for longer periods, however, always have at least three navigators (one for each shift during the day) and those that fly for many days often have an extra navigator to help rotate the others off-duty, giving them a chance to rest and recuperate from the rigors of their daily duties.

Pay Per Day: Navigators receive 5 gp per day or 2% of their cargo's value.

Needed: Two navigators are needed to handle a day's worth of navigating for an airship. One navigator handles the night navigation, while the other takes care of the day navigation. Like pilots, navigators are given one day each week off, so extra navigators need to be brought along if the flight lasts longer than a week.

Lieutenants

These men and women work directly for the captain and are intended to help take the less critical of his responsibilities. There is normally one lieutenant aboard an airship for every 20 standard crewmen (not including officers) and each lieutenant has his or her own specialty. The lieutenants are, technically, second only to the captain in rank aboard the ship, and each lieutenant has an individual rank (from first lieutenant to second lieutenant and so on) that denotes their place in the pecking order.

In reality, lieutenants are the captain's grunts and receive little respect from the crew based on their rank alone. A lieutenant who proves himself capable and assists the crew in accomplishing his orders can quickly gain the trust and favor of his men, making him a valued member of the crew in his own right. There are as many good lieutenants as bad on

most airships, and the wise captain knows to use their personalities to direct and control the anger of his crew, should the situation warrant it.

If the captain is incapacitated or killed, the first lieutenant is expected to step in and fill his shoes, accepting the captain's rank as his own. On pirate vessels and other airships of ill repute, this is seen as one of the legitimate methods of promotion to the captain's position, but most other airships dread the loss of the captain. When a lieutenant takes over for the captain, the results are often jarring to the crew, who must learn to take orders from an entirely new individual who may have his or her own ideas about how a ship should be run.

Pay Per Day: Lieutenants are horribly underpaid, though they don't really care because they are learning a trade that could make them quite wealthy one day. They tend to make 2 sp per day, or a very small cut of the profits (see above) if they work aboard cargo vessels.

Needed: One lieutenant is needed for every 20 crew members on the ship, not including officers. Typically, an extra lieutenant or two is brought along to give the younger officers a break here and there, but this is not required. Lieutenants work irregular shifts, and at least one of them is expected to be on the deck at any given time. When the captain is awake, the lieutenants are also expected to be awake and ready to take his commands. Because lieutenants do help keep the ship running smoothly, all Piloting and Navigation skill checks made when there are not enough lieutenants on board suffer a -1 circumstance penalty for each missing lieutenant.

Apprentices

Though not technically officers in their own right, the apprentice pilots and navigators share so much of their masters' influence and authority that they are included in this section. While a crewman may not respect an apprentice, he certainly knows that any order coming from an apprentice came from the pilot or navigator and should be treated as such. This gives apprentices a great deal of power without a corresponding amount of responsibility. Taken together with the young age of most apprentices (usually in their early teens), this can lead to all manner of discord aboard an airship.

To curb clashes between snotty young apprentices and valuable members of the crew, most navigators and pilots keep their apprentices on very short leashes. An apprentice who steps out of line with a crewman may not suffer at the hands of the man he insulted, but he will surely taste the lash of his master's tongue (at least) when word gets out. Apprentices who continue to cause problems are most often simply removed from the ship's crew when it stops at the next port; some are even abandoned at port by their shipmates and must attempt to find work on another ship if they wish to return to their homes.

When things are going well for the apprentice, however, he spends most of his time running between his master and the crew, delivering orders and returning with information about current weather conditions, wind speeds, or reports from the scouts. Officers keep their apprentices very busy, not only with their traditional duties and with helping out on the deck or in the navigation room, but also in performing personal tasks for the officer. The master of an apprentice uses menial labor and demeaning tasks to reinforce the apprentices' position in the airship's ranking and to instill discipline and a respect for the hard work the crew performs.

Pay Per Day: Apprentices receive 5 copper pieces per day. Some merchant houses work their apprentices differently, providing only room and board for apprentices who serve aboard airships.

Needed: Apprentices are needed to help take some of the load off the navigators and pilots, doing much of their scout work and helping clean their quarters and keep their uniforms neat and polished. If a pilot or navigator does not have an apprentice, he suffers a -1 morale penalty on all Profession (Airship Pilot) or Profession (Airship Navigator) skill checks he makes after his first day in the air. While a pilot or navigator doesn't really need an apprentice for shorter journeys, the young apprentice is definitely missed on journeys that are any longer.

Warrant Officers

Warrant officers are given their positions by the captain based on their skill and experience. Most begin their careers as crewmen, working their way up through the ranks before finally being recognized and given a position of authority on their airship. Though warrant officers are ranked lower than standard officers, they are often more respected by the crew because they must spend more hands-on time performing their duties. Smart officers rely heavily on the warrant officers during their interactions with the rest of the crew, using the good reputation of the warrant officers to bolster their own position.

Warrant officers are treated better than the rest of the crew and are often well paid. This is to reduce the potential hazards of mutiny by the warrant officers and to keep the rest of the crew motivated. Because the warrant officers come up from the ranks, they allow other crewmen to see their own opportunities to rise above the common rabble and work all the harder. That fewer than one in ten members of a crew even has a chance of becoming a warrant officer is less important to most crewmen than the possibility itself.

Boatswain

The boatswain is responsible for the general operation and repair of the airship. He constantly checks the boat for any damage it may have suffered and keeps a wary eye on the sails and rigging. The boatswain recruits crewmen on an as-needed basis, pulling men from less important duties to help him repair the vessel, untie fouled lines, and generally keep things running.

Pay Per Day: The boatswain normally receives 3 sp per day.

Needed: Every airship needs a boatswain. When he does his job well, no one even notices him, which is just the way he likes it. Airships without a Boatswain suffer a -1 maneuverability penalty, as the crew is not as well organized as they need to be.

Bursar

Airships burn up fuel at an alarming rate, require a great deal of provisions (and ammunition) for long flights, and have repairs that cost as much as most sailing ships cost to build. The bursar keeps his eye on this outflow of money and also tracks the airship's income, accounting for every copper piece that enters or leaves the boat. Bursars are well paid, and often receive bonuses based on the profits of the airship they serve. This helps to curb corruption and theft, but also provides an incentive for the bursar to help the ship's officers accurately judge expenses to increase profits. Of

course, a few bursars are so dishonest as to 'cook the books' and make the profits of the airship seem greater than they are in order to gain a more substantial bonus for themselves. This leads to all manner of difficulties for the airship and its crews, and bursars caught skimming from the profits or altering the ship's accounts are likely to be tossed overboard from a great height.

Needed: Any airship that carries a total cargo in a month worth more than 1,000 gp must have a bursar to keep an accurate accounting of expenses. Airships who do not keep a bursar on board in these cases suffer a 1d3% loss on every cargo delivered, due to unexpected expenses and outright theft of goods.

Pay Per Day: Bursars receive the princely sum of 4 sp per day, enough to keep most of them honest and interested in keeping their jobs.

Chirurgeon

The airship business is dangerous, especially for the crews of the ships. Mishaps in flight attacks by pirates or dangerous creatures can lead to serious injuries to crewmen and officer alike, making the chirurgeon's role an important one on an airship. Responsible for stitching closed wounds, setting broken bones, and otherwise seeing to the health and well being of his crew, the ship's chirurgeon is a revered and honored member of any crew.

Airships that fly long distances often employ a cleric of a friendly church as their chirurgeon, offering substantial donations in exchange for the healing magic and protective enchantments the cleric brings to the airship. This has increased the wealth of a great many minor churches, particularly those who venerate gods of the air and sky.

When clerics aren't available, chirurgeons are typically medical experts with a focus on the healing arts, alchemy, and herbalism.

Pay Per Day: Clerical chirurgeons are normally paid 5 gp per day, except on boats where combat is expected, when they are paid by the number and types of spells cast, as per the information found in the Hirelings section of the DMG. Note that most clerical chirurgeons actually work in exchange for passage, providing magical healing in return for rapid travel. Most clerical chirurgeons are 3rd-level or below, though some higher-level priests might be found on an airship if a particular church is attempting to earn favors from the airship's captain or the owners of the vessel.

Non-clerical chirurgeons receive a substantially lower rate of pay, typically 5 sp per day.

Needed: The crews of any airship without a chirurgeon aboard suffer a -1 morale penalty to all attack and damage rolls. Without the assurance they'll be patched up after a fight, the men are less likely to throw themselves into the battle.

Engineer

Engines are tricky beasts, and airships that use them must have an engineer aboard to keep an eye on them. The engineer's role is simple: to oversee the operation of the engines at all times, ensuring they don't explode or otherwise endanger the airship. This keeps the engineer quite busy, and most of these warrant officers sleep and take their meals in rooms adjacent to their precious engines. This means that the engineer is usually the first one to suffer if the engines rupture or otherwise malfunction, providing an incentive to keep the engines running smoothly.

Pay Per Day: Engineers are among the highest-paid members of the crew, collecting between 3 gp and 5 gp per day. Because they are so crucial to the operation of the airship, they are paid accordingly.

Needed: Any airship with an engine needs an engineer to keep it running. Most ships possess two or three. An engine without an engineer suffers a -10 decrease in its power factors during any eight-hour shift in which there is no engineer. For each full shift that passes without an engineer keeping an eye on the airship, there is a 5% chance that the penalty becomes permanent, as the engine burns out some of its vital eldritch components. This damage cannot be repaired as it is not structural—the magical elements of the engine suffer the damage and only a new engine fixes the problem.

Master-At-Arms

There are few men aboard an airship more feared and despised than the master-at-arms. In charge of discipline and the weapons of the ship, the master-at-arms is the last person any crewperson wants to spend time with, as such close encounters usually end in a flogging or other unpleasant punishment. Despite his poor reputation, however, the master-at-arms is given a great deal of respect for his skill with weapons and his ability to quickly mobilize crewmen into fighting units.

Though the master-at-arms prefers to have nothing to do, during combat he's all too busy. If he's not ordering men to cart ammunition to shipboard weapons or handing out weapons and armor, he's leading a group of crewmen to repel boarders. The master-at-arms also offers fighting instruction to crewmen during his off-hours, keeping them in shape and honing his own skills with rigorous sparring matches.

Pay Per Day: Most masters-at-arms receive 4 sp per day, though bonus pay of up to 10 gp per day may be authorized for particularly daring or desperate defenses of the airship.

Needed: The crew of any airship with a master-at-arms aboard is entitled to a +1 circumstance bonus to any melee attack or damage rolls they make while on board. On the other hand, the weapons crews of any airship without a master-at-arms suffer a -1 circumstance penalty to all attack rolls without the advice and leadership of the master-at-arms to guide them.

Signal Master

Airships, especially those involved in the military, often find it useful to communicate with one another or with parties on the ground. Mirrors are the most commonly used methods for such communication, allowing codes to be flashed between conversing parties over great distances (see Signal Mirrors in Chapter 6: Equipment). The signal master is in charge of the mirrors used in signaling and also handles the communication and translation chores aboard the ship.

Most signal masters are scholarly and are proficient in more than one language, allowing them to communicate more readily with a wide range of individuals and creatures. In areas where airships are common, signaling is taught in schools so that students can read the messages flashing through the sky overhead.

Pay Per Day: These men and women are paid 2 sp per day.

Needed: Airships need signal masters only if they intend to use signaling mirrors to help them stay in formation or to receive messages from other airships.

The Crew

While officers and warrant officers normally occupy unique, or at least limited, positions aboard an airship, the crew is composed of the rank and file sailors. They do what they're told, when they're told to do it, and earn a decent wage for their efforts. Unlike ocean sailors, who often join up with the crews of ships to avoid punishment for crimes or to escape a former life, the crew of an airship is often intelligent, educated, and looking for adventure and excitement. Because the majority of airships do not make long-distance trips, the crew becomes quite well known in its ports of calls, giving each place an air of familiarity and welcome that crewmen cherish.

Crewmen are paid upon arrival at each port, shortly after the captain and bursar collect any payments the ship has earned and the cargo is unloaded. There are three basic types of crewmen, and each type is paid according to his skills and value to the airship.

Landsmen

When a man first takes a position on an airship, he is known as a landsman. He'll remain a landsman until the boatswain is confident in his skills and ability to take on responsibility. Landsmen don't do much of anything without a direct order and spend a lot of their time doing menial, unpleasant work such as mending sails or scrubbing the deck. In part, a landsman's tenure is a test of his resolve and willingness to do what needs to be done in order to keep the ship up and running. Those who complain the loudest about their roles are rarely promoted to the next rank, and most leave within a few months of signing on.

Landsmen work in two shifts, each twelve hours long. The night crew is often given a slightly lighter workload than the day shift, but pays for it with less food and a disrupted sleep schedule.

Unless specifically detailed, all landsmen are considered to be first level experts.

Pay Per Day: Landsmen receive a mere 1 sp per day.

Needed: Landsmen are the grunts of the airship. While a crew could, theoretically, be made up entirely of landsmen, this is very rare because of the danger their lack of skill poses to the airship as a whole. Any airship with a crew composed of more than 60% landsmen suffers a -2 maneuverability penalty due to their inability to work the rigging expertly.

Airmen

When a landsman has impressed the boatswain with his initiative, skills, and work ethic, he is promoted to a position as an airman. The airmen do most of the real work on an airship—they patrol the rigging, handle the cargo, and do whatever the officers ask of them. While their work is usually not as menial as that performed by landsmen, it is still very difficult and demanding. Like landsmen, airmen work twelve hours each day and have no days off, save for when the airship is at port.

The night crew airmen spend the majority of their time working with the pilot and the navigator, learning the rudiments of both those trades. While the day crew has an easier schedule, they do not have the time to spend with these experts and rarely advance, as a result. Most warrant officers, in fact, are taken from the ranks of the airmen, who have proved their dedication and learned some useful skills while toiling the nights away.

Unless specifically detailed, all airmen are considered to be second level experts.

Pay Per Day: Airmen receive 2 sp per day.

Needed: Airmen normally fill out the ranks between the landsmen and the veterans. They serve mainly to help train the landsmen and keep them from breaking anything while keeping the airship sailing smoothly.

Veterans

Airmen who have been aboard an airship for a sufficient length of time eventually graduate to veteran status. These men and women are trusted by the officers and are sometimes given charge of small groups of other crewmen to accomplish a specific task. Veterans are extremely familiar with their airship and know all of its idiosyncrasies and strengths. The skill level of veteran crewmen is quite high and they are paid very well for their labors.

Unlike airmen, veterans only work 8 hours a day and are never on the night shift. They are, however, on call, and in the event of a problem during the night, the airmen consult with the veterans rather than bothering the officers or the captain. Though most veterans are respected by their peers, a few are reviled for their bullying ways—these, sadly, often end up taking a dive off the side of the boat during the dead of night long before they get the hint and mend their ways.

Veteran crewmen never have any trouble getting work; if they lose a job on one airship, a quick trip to an airport is all they need to pick up work, unless, of course, the veteran was booted off the airship for a good reason, such as theft or violence. Airship captains and boatswains talk to one another frequently, and a bad reputation quickly precedes its bearer.

Unless specifically detailed, all veterans are considered to be third level experts.

Pay Per Day: Veteran crewmen receive 2 sp and 5 cp each day and most receive monthly bonuses from 1 gp to 5 gp, depending on the whims of the captain and the fortunes of the airship.

Needed: Veteran crewmen can prove a real boon to any airship on which they serve, but there must be a significant number of them before they really start to make a difference. For every 10% of the crew made up of veterans, the airship's Maneuverability is increased by 1, with a maximum possible increase of 3.

Space Needed by the Crew

Airships that wish to have space for their crew to sleep and relax must provide crew quarters. Six crewmen can rest comfortably in a one-ton room, while officers are each entitled to a half-ton room of their own. The captain typically takes a one to two-ton room, though in some cases may satisfy himself with a half-ton room to make more space for cargo on smaller vessels.

Calculating Crew Requirements

It is extremely important to know how many crew members a ship needs in order to fly. Balancing one's crew is a tricky task; crewmen eat up resources, including food, space, salary, and leadership, but operating without them is impossible. Just covering the basics isn't enough either, while it may be acceptable for short-distance merchant vessels to set off with a skeleton crew, most ships need a full backup crew of airmen to work evening shifts, and to defend the ship from attackers.

Crewmen

Start your count with the non-officers. Calculate your minimum crew requirement based upon how many men are needed for each of your ship's components. These typically include rigging, weaponry, and piloting components. Anything listed in Chapter 1 with a crew requirement needs a minimum number of men to operate. Some men can double up tasks; weapon crews, for example, are only needed in combat, and can lift anchors and extend landing gear.

Decide how many 8-hour shifts per day your ship needs to operate. If only one, the minimum crew plus a few backup men is fine. If two, double the minimum crew requirement. If three, decide upon the experience level you want your crewmen to have. If you want all landsmen, you may operate with only double the minimum. If you wish a few veterans or airmen, more crew is needed. Generally, about two and a half times the minimum works out well, meaning that only half the men working at any given time are landsmen.

In combat, all crewmembers are woken from their slumber and called to battle stations, regardless of their shift. When crew members fall, the extra men step up to take their places. Crew members not employed in a specific task are free to put out fires, board other ships, or fight in hand-to-hand combat.

Officers

The number of officers a ship requires depends upon its purpose. A simple merchant vessel may not need a master-at-arms, for example, or a military vessel might be able to function without a bursar. To calculate the number of officers needed for a ship, step through each of the officer categories listed above and refer to the individual sections labeled 'needed'.

Note that some officers may be able to perform more than one role. A captain may be able to serve as the navigator, for example, or nearly any officer could serve as the signal master. Remember that officers that take on more than one role can only perform one of the roles at a time. Doubling up a pilot as an engineer, for example, won't work, as he can't watch the wheel and the engine simultaneously. The possible combinations of officers are too numerous and dependent upon the role of the individual ship to provide rules for, so simply use your best judgment when assigning roles.

Aerial Movement

Moving through the air can be more complex than simply walking across the ground, especially if you're in an airship. Like the larger flying creatures, airships have some restrictions on the rate at which they can turn and their ability to rise or descend. These limits are based on the maneuverability of the vessel and its speed, as well as the skill of the captain and crew.

Aerial Movement Scales and Rates

As with standard d20 movement, there are three scales used when handling aerial travel: tactical, local, and overland. Though each of these movement scales are handled the same, they offer varying degrees of precision and each is best suited for use in particular types of situations.

Tactical Movement

This type of movement deals in six second rounds and allows for the most accurate tracking of airship placement and movement. Because airships move much more quickly than do most creatures, movement is handled in 50 ft. increments at this scale, rather than the 5' increments most often used when tracking the movement of creatures or characters. This movement scale should be restricted to use in combat encounters or where the precise positioning of an airship is important (such as when a ship is moving through a particularly treacherous canyon or mountain pass, for example).

In general, this movement scale is best handled through the use of miniatures (or counters of the appropriate size and shape) and a combat map. This allows everyone to visualize the scene more easily and helps organize and coordinate movement of various vessels.

When engaged in tactical movement, vessels may move at any speed up to their full movement rate, with the standard restrictions for turning, accelerating, rising, or descending (see below).

Local Movement

At this scale, movement is handled in one-minute increments. A vessel may move up to ten times its standard tactical movement rate while engaging in local movement and the captain only needs to make a Piloting check if it attempts to turn more than ten times during each minute or if it passes through a square containing an obstacle of some sort.

Local movement is best used to represent scouting missions, or instances when the airship is moving through an area in search of something specific. It can also be used effectively if the details of movement are somewhat important, such as when an airship attempts to navigate between mountains or in cases where foul weather endangers the ship.

Overland Movement

When a vessel is flying from one point to another, it is rarely necessary to map out each step of the journey, or to play through every minute of travel. In general, overland movement is measured in hours, though some GMs may prefer to use days if they have no plans for encounters to occur during the journey.

As seen in the Table 3.1, airships can travel a great distance in a relatively short time. This can have the effect of decreasing the size of your world, especially in areas with few natural obstacles to prevent the flow of air traffic. While a mountain range is as effective a barrier to airships (see 'Cruising Altitude' below) as it is to men on foot, forests, swamps, bodies of water, and other features can be bypassed very easily by an airship.

Aerial Movement Basics

Airships do not move in the same way as characters or creatures. In this section, various aspects of aerial movement are discussed, including information for determining the speed at which an airship can rise or descend and how airships turn.

Ascending and Descending

An airship that is stationary, or traveling horizontally at 10 mph or less, may ascend up to 50 feet in a round. Airships traveling at 10 mph or less do not gain any horizontal movement while ascending, they remain in the same square while their altitude increases.

If a ship is moving horizontally at more than 10 mph, it may spend 150 feet of its forward movement to ascend up to 50 feet. Thus, a ship traveling at 200 feet per round (200 mph) may move forward 50 feet and ascend 50 feet (which costs it the additional 150 feet of its normal movement for the round).

An airship traveling at 10 mph or less may descend up to 100 feet per round without danger.

An airship moving horizontally at more than 10 mph may descend up to 50 feet per 50 feet of horizontal distance covered during the round, at no additional movement cost. So, for example, an airship traveling at 250 ft. per round can descend 250 ft. during a given round without any horizontal movement cost.

Faster ascents and descents are possible, but require specialized equipment and engines as well as a trained crew and captain. Knowing the limits of a vessel is an important part of flying an airship, those who attempt to force their craft into extreme maneuvers often pay the ultimate price (see 'Pushing the Boundaries' below).

Note that an airship that descends during a round may not then later ascend during the same round. In addition, a full round must pass between the descent of an airship and its ascent. Airships that ascend may then descend in the same round, however, provided they have enough movement to do so.

Turning

Each airship has a maneuverability rating, which determines the number of 45-degree turns it can make during a given round. An airship must move at least 50 feet (1 square) between each of these turns, though more extreme maneuvers may be possible (see "Pushing the Limits", below) for particularly agile ships and skillful crews.

Due to the 50 foot minimum, ships with very high maneuverability ratings may not be able to take advantage of their accelerated turning rates when moving at slow speeds. A ship with a maneuverability rating of 5, for example, need to travel at least 30 mph (250 feet per round) if it wishes to take all of its turns. Again, tighter turns can be made, as detailed below under "Pushing the Limits."

Note that airships hovering at 0 mph may choose to take as many of their available turns as they wish in a single round, using the power of their engines to turn them in place rather than pushing them forward or lifting them up.

An airship can turn and ascend or descend during the same round—though an airship still may not descend and then ascend in the same or following round.

Acceleration

The max rate in MPH in which a vessel can accelerate in one round is equal to the power factors of its engines, minus its total tonnage, plus any modifications from special equipment (such as sails). Note that dirigibles serve to reduce an airship's effective tonnage, even down to 0.

Acceleration is announced at the beginning of any round in which the captain wishes to increase the speed of his vessel. The captain must announce the amount by which he intends to increase his ship's speed, up to the total amount of acceleration available. The airship moves at its current speed for the remainder of the round, but is considered to be moving at its new speed at the end of the round (barring an accident or other problem).

Accelerating at more than 20 mph is a dangerous tactic and all crewmembers that are not secured must make a Balance check (DC 10 plus 1 for every 5 mph over 20) or be thrown to the deck. During combats this can be useful as an attempt to throw invaders off their feet, but it often has disastrous consequences.

Deceleration

A ship can decelerate a number of miles per hour equal to its current maneuverability times 10. Thus, a small ship with a maneuverability of 5 could decelerate 50 mph without any danger of losing control of the airship. If a pilot attempts a faster deceleration, he must immediately make a Piloting skill check (DC 17). If this check succeeds, the airship is able to decelerate by as much as 20 mph more than its maneuverability rating normally allows, but no more. If the check fails, the airship is immediately out of control (see below). Like with acceleration, deceleration of more than 20 mph per round requires the crew members to make balance checks.

Taking Off

When taking off from the ground, an airship must ascend at least 50 feet before it can begin any horizontal movement. At that point, it begins moving as per the rules stated above.

Landing

To land safely, a vessel must be moving at no more than 50 feet per round (5 mph) and cannot descend more than 50 feet during the round in which the landing occurs. More extreme conditions for landing cause damage to the vessel (and probably the crew, as well) and may cause the airship to 'skip' across the ground before finally coming to rest.

A ship with a speed of zero can still move forward at a rate of 10 feet per round; such slow speeds are often used for docking maneuvers or other tricky flight operations that require a great deal of delicacy.

Flight Ceiling

It is very rare for any airship to fly more than 500 feet off the ground. This limit is a function not only of the vessel's

weaknesses, but of the manner in which the airship engines operate. The further an airship is from the earth, the more difficult it is for the engine to provide thrust, thus reducing the speed of the airship.

For every 100 feet above 500 the airship travels, its maximum speed is reduced by 10 mph. If this air speed reduction ever reduces the airship's maximum speed to zero, the airship begins to fall, just as if it had run out of fuel.

The pilot of a falling airship may attempt to regain control of the vessel when it loses altitude. To regain control, he must make a Piloting skill check (DC 20 + 2 for every round the airship has fallen), if the check succeeds, the ship's fall stops and it may begin normal flight on the next round.

Facing

An airship's facing is important to keep track of. An airship is always facing in a particular direction (as indicated on the counter or miniature used to represent the airship). This is important because the airship may have weapons on one side of the ship, but not the other, and to determine how far the airship can turn during a given round.

Pushing the Limits

For most captains, the basic information provided above is sufficient. They have no interest in pushing their ships into extreme aerobatic maneuvers and always land and take off using the approved speed limits. Others, such as pirates and warriors, prefer more aggressive maneuvers, pushing their airships to the very limits of their performance. While some ships are designed for this, most can handle the strain of these stunts for only a brief time before sustaining damage.

Abrupt Ascent

In times of emergency, it may be necessary to quickly elevate yourself above the fray. The abrupt ascent maneuver allows your vessel to rise up to its current forward movement rate (if it is not currently moving faster than 10 mph), but requires a Fortitude save (DC 10 + one-tenth the number of feet by which your vessel exceeds its safe ascent rate). If your vessel's saving throw succeeds, it sustains no damage. If it fails, however, your ship suffers 1d6 hull points of damage.

Airships that are traveling faster than 10 mph may use the abrupt ascent to rise 100 feet for every 150 feet of horizontal travel during the same round. This requires a Fortitude save (DC 10 + 5 for every 50 feet of ascent during the round beyond the safety limit) by the ship. If the airship fails its Fortitude save, it suffers 1d6 hit points of damage per additional 50 feet of ascent.

Plummeting Descent

By accelerating toward the earth, an airship can descend quite rapidly, though it may not be able to recover from its dive before impact with the earth. Regardless of its forward momentum, an airship may double the rate at which it can descend during a given round. However, it must descend one-half again the distance of its plummeting descent on the following round as it attempts to regain equilibrium and resume standard flight. A captain who wishes to reduce this secondary descent distance required after a plummeting descent forces his ship to make a Fortitude save (DC 10 + 1 per 10 feet by which the secondary descent is shortened). If the Fortitude save succeeds, the airship pulls out of its descent without further difficulty and begins flying normally on the following round.

If this save fails, however, tremendous stress can crack the vessel right in half. The airship suffers 1d6 hull points of damage per 10 feet by which the dive was shortened. In addition, the vessel falls momentarily out of control and plummets an additional 1d10 x 5 feet before recovering and resuming normal flight.

Sharp Turns

In normal flight, an airship's captain must allow for a full 50 feet of movement between each of its turns in a given round. It is possible, however, for a ship to make a sharper turn at the risk of overbalancing or straining the control mechanism.

The captain of a ship may call for up to one-half of the ship's available 45-degree turns to be made in any one normal turn interval. Doing so puts the ship at great risk of overbalancing, however, and even if the turn does not wreck the ship there is a good chance the steering mechanism suffers possibly fatal damage.

For every turn after the first which the ship makes without covering the required distance, the pilot must make a Piloting skill check (DC 15 + the number of turns made during this round so far). If this check succeeds, the airship must then make a Reflex save (DC 10 + the number of turns made during this round so far) or suffer a critical hit to the control mechanism (rudder, engine swivel, etc.). This critical hit is treated as if it had caused 1d6 points of damage per turn made during the round.

If the Piloting skill check fails, however, the airship immediately overbalances and begins rolling in the direction of its last turn (see *heeled over and rolling* below).

Note that the airship's speed is reduced by 5 mph for every additional turn it makes, as the engine's force is used to turn the ship rather than applying forward momentum. Thus, a particularly sharp turn can bring even a very fast ship to a complete halt, as its engines struggle to compensate for the sudden change in direction. Ships must accelerate as normal after making a turn if the captain wishes to resume his cruising speed.

If an airship's speed is reduced to less than 10 mph as a result of sharp turns, it also loses 50 feet of altitude and loses another 50 feet if the captain does not immediately accelerate during the following round.

Pushed Acceleration

By pushing the airship's engine beyond its normal limits, it is possible to eke out a bit more acceleration. On the other hand, punishing the engine in so dramatic a fashion also carries the risk of blowing the engine apart and leaving the ship adrift. Pushing the acceleration of a ship always causes damage if there is not an engineer aboard the vessel and may cause such damage even if the airship's crew does contain a qualified engineer.

When an engine is pushed, the captain must declare by how far he is willing to open the throttle. The ship may accelerate from zero to its maximum speed in a single round, but the Engineer must make a successful Profession (Airship Engineer) skill check (DC 15 + 1 per 5 mph of pushed acceleration) in order to keep the engine from damaging itself in the process. If this check succeeds, the acceleration is successful and the engine suffers no damage.

If the skill check fails, however, the engine begins overheating and the stress of the acceleration starts tearing the machinery apart. In this case, the engine suffers 1d6 hit points

of damage per 5 mph of pushed acceleration—this damage is applied at the end of the round in which the pushed acceleration occurs.

Pushing a ship's acceleration in subsequent rounds causes the ship's engineer to suffer a cumulative -5 circumstance penalty on each of his Profession (Airship Engineer) skill checks.

If the airship does not have an engineer, the engine automatically suffers 1d6 hit points per 5 mph of pushed acceleration and cannot be pushed in two consecutive rounds. Any attempts to push the acceleration two rounds in a row without the assistance of an engineer immediately destroys the engine as if it had been reduced to zero hit points (see Critical Hits in the Chapter 4: Aerial Combat).

Dirigible ships without engines cannot push their acceleration in this fashion.

Mishaps in the Sky

There are many things that can happen to an airship as it flies along; unfortunately, most of them are simply not desirable, and may very well end with the ship broken and spiraling toward the earth. This section describes some of these mishaps and their results.

Heeled Over and Rolling

A ship that is caught by a strong wind, turns too tightly, or is rammed by another ship, may become heeled over. This is air sailor slang for a ship that has tilted onto its side and is in danger of rolling over completely. Sailors hate the idea of being heeled over, which is certain to end with a large number of sailors plummeting off the deck to their death on the hard ground below.

When a ship is heeled over, all crew members aboard must immediately make a Reflex save (DC 20) to grab hold of something before they begin sliding toward the ground. Any crew members who fail this Reflex save begin hurtling toward the ground, sliding across the deck and out into the air. Sailors below decks who fail this roll do not fall out of the ship, but may take falling damage depending upon how far they are from the nearest bulkhead. Even if no damage is taken, such men are knocked prone.

Even worse, when a ship is heeled over, it is likely to continue its rotation, rolling completely over and pouring the last of its crewmembers over the side like so much unneeded ballast. To keep a ship from rotating over, the pilot must make a Profession (Airship Pilot) skill check (DC 20) to use the engines to rotate the ship back into the correct position (that is, hull down, deck to the sky).

If this skill check fails, then the vessel rolls over fully, with its deck facing the earth and its hull pointing toward the sky. At this point, any creatures or objects on the deck that were not previously tethered to the deck are dumped off the ship and crash to earth (using the standard falling rules) unless they are somehow able to fly or levitate on their own.

A ship that rolls begins losing altitude at the rate of 100 feet per round, starting on the round after it rolls over. The pilot must first right the ship before it can begin gaining altitude. Righting a ship requires a successful Profession (Airship Pilot) skill check (DC 25). If this skill check succeeds, the ship immediately rolls back over and the pilot may begin steering the ship, including ascending or descending, during the following round.

Table 3.1—Travel Times

Speed	Tactical (Round)	Local (Minute)	Overland (Per Day)*
10 mph	100 ft.	900 ft.	240 miles
20 mph	200 ft.	1,800 ft.	480 miles
30 mph	250 ft.	2,650 ft.	720 miles
40 mph	350 ft.	3,500 ft.	960 miles
50 mph	450 ft.	4,400 ft.	1,200 miles
60 mph	500 ft.	5,300 ft.	1,440 miles
70 mph	600 ft.	6,150 ft.	1,680 miles
80 mph	700 ft.	7,050 ft.	1,920 miles
90 mph	800 ft.	7,900 ft.	2,160 miles
100 mph	900 ft.	8,800 ft.	2,400 miles

*The Per Day figures represent an airship flying for 24 hours each day, with a full crew for each shift. If an airship is only capable of flying a specified number of hours each day, either as a limitation of its engine or an incomplete crew, reduce the miles per day proportionately.

Note that there are some rounding errors in the above table—this was done to make it easier to track tactical and local movement on the maps and only affects the Per Round and Per Minute movement rates.

Crashing

Any time a vessel hits the earth or another terrain obstacle without making a landing, it has crashed. When a vessel crashes, it suffers 1d6 hull points for every 10 mph of its current speed, plus 1d6 hull points of damage for every 50 feet of descent during the round in which it impacts the earth. Every creature aboard the ship when it crashes suffers the same number of hit points of damage as the vessel suffers hull points.

If a ship is reduced to fewer than zero hit points by a crash, it has broken up and all critical components suffer 2d6 hull points of damage as a result. In addition, all creatures on the ship suffer double the normal damage from the crash, as the shattered pieces of the ship explode through them like shrapnel.

Fires

Shipboard fires are a horrible tragedy if allowed to get out of hand. Any attack with an area of effect and which causes its damage primarily through heat or fire (such as any spell with the Fire descriptor or an attack from a Flame Projector) may set an airship alight.

If the damage comes from a spell, the airship must make a Fortitude save to avoid catching fire—this save has the same DC as the original spell DC and is in addition to any other save allowed to avoid damage. Damage caused by fire-based weapons forces a Fortitude save as well (DC equal to 10 + hull points of damage caused by the attack).

A successful save indicates that the ship is not set alight. A failed save, however, means the airship is burning, and it continues to burn until it is extinguished. The initial fire covers a 10′ square area at the center of the spell's area of effect or wherever the physical attack landed. Each round, there is a 2 in 6 chance that the fire spreads to encompass another 10′ square. This new 10-foot square is chosen by rolling 1d8 and consulting Table 3.2. Roll for spread once a round per fire, not per 10′ square; fire always spreads from the most recently ignited square. If the fire spreads back into an area already on fire, it does no additional damage, but the fire has a 1 in 6 greater chance of spreading to additional squares during the next round. If a fire spreads past the edge of the deck, it begins moving down the side of the ship.

If the fire is on an exposed deck of the airship, increase the chance of it spreading each round by 1 in 6 for every 10 mph of the airship's current speed above 30. If the airship is not moving, increase the chance of the fire spreading by 1 in 6 for every 20 mph of the wind's current speed.

At the end of each round, every 10′ square that is burning causes 1d6 hull points of damage to the flaming airship. While airmen do not suffer damage unless they enter a burning square, they do suffer 2d6 hit points of damage during any round in which they perform an action within a burning square. A character who simply passes through a burning square can avoid the damage with a successful Reflex save (DC 10 + 1 per 5′ of flaming area the character has moved through during the round), but otherwise suffers the standard damage for the current square he is moving through. Note that fire causes one-half its normal damage to any components located in an engulfed area each round.

Extinguishing a fire is not difficult, provided the fire has not spread. Every 10 ft. section of burning airship must be extinguished individually. Up to six fire fighters can work on each section, pouring sand or water on it. To automatically extinguish a 10. ft. section of burning airship, the crew must douse the flames with at least 30 gallons of water, or a similar amount of sand. The water or sand must all be applied during the same round. A single crewman is able to successfully apply 5 gallons of water or sand to the fire (distributing it evenly in an area, rather than just sloshing it down) as a standard action provided he has a sufficient quantity of water or sand (and a bucket to carry it) on hand. A successful Wisdom check (DC 20) allows the crew member to apply up to 10 gallons of water or sand as a standard action, if this amount of extinguishing material is on hand.

If fewer than 30 gallons of water or sand are applied to the fire during a given round, the chance of extinguishing the fire drops to 50%. If fewer than 20 gallons of water are applied to the 10-foot section in the same round, the chance is a mere 25%, while fewer than 10 gallons of water applied in the same round simply cannot extinguish the fire at all.

Fire-fighting materials are normally held below decks unless a combat is imminent, in which case they are rolled into the center of the main deck, where they can be readily accessed by the crew in the event of a fire.

Out of Control

An airship that is out of control is in grave danger. The pilot is no longer able to steer the vessel, leading to wild variations in facing, attitude, and altitude. Airships become out of control for a variety of reasons: poor weather conditions, severe damage, and over-aggressive piloting are just a few of the reasons an airship might find itself out of control. For the pilot, it's not important to know what sent the airship out of control, what matters is getting the airship settled before it crashes.

At the end of every round that the ship is out of control, the pilot is allowed a single Profession (Airship Pilot) skill check to regain control. The DC of this check is 15 plus 1 per 10 mph of the ship's speed, and plus 2 for every altitude band the ship has gained or lost in the round.

When an airship is out of control, a number of things happen during every round the out of control condition persists.

- **Heading change.** One per round, per point of maneuverability, the GM should roll 1d6. On a result of 1 or 2, the airship turns 45-degrees to its left. On a roll of 3 or 4, the airship does not change heading. On a result of 5 or 6, the airship turns 45-degrees to its right. The changes should occur more or less at random, but no two turns occur within 50 feet of one another. An airship never turns directly into the wind when it is out of control. Treat any result which indicates an airship would make such a turn as if a 3 or 4 had been rolled.
- **Speed Change.** Fortunately for everyone aboard the airship, its speed begins decreasing the round immediately following the round in which it became out of control. The airship decelerates at a rate of 10 mph each round until the pilot regains control.
- **Altitude Change.** The GM should roll 1d6 at the beginning of any round during which the airship is out of control. On a result of 1 or 2, the airship descends 1d4 altitude bands. On a result of 3 to 5, the airship remains at its current altitude and, on a result of 6, the airship gains 1d2 altitude bands. Any airship which falls below the first altitude band while out of control crashes.

Table 3.2—Fire Spread Pattern

1—NW	2—N	3—NE
4—W	Most Recently Ignited Square	5—E
6—SW	7—S	8—SE

Airship Combat

Fighting in the air is much different than battling on land or even on the high seas. There is no cover, only the concealment of clouds protects you from the ballista bolts and catapult shots of your enemies, and engagements occur at a distance of hundreds of feet. While you are often secure on the deck of your airship, there is always the chance of a sudden shift in footing as the captain wheels the vessel around for better position during the fight. Even worse, you must contend with flying opponents above and below your ship, some of whom you can see, and others concealed by the blinding light of the sun or the deck of your own ship. Aerial combat is dangerous, but those who make their living plying the skylanes swear by it as the most exhilarating time of their life.

This chapter contains all the information you need to lead the crews of your airships against your enemies. Whether battling pirates or winged fiends, you can find everything you need in the pages that follow. Study these systems well—they may be all that stands between your airship and the rocky earth below.

How Aerial Combat Works

Combat encounters in a dungeon setting, or even in the wilderness, occur at relatively close ranges. Combatants are separated, most times, by a few dozen yards and often rush in as quickly as possible to get to the meat of melee. Individuals may work as a team, but they are primarily concerned with their personal survival and the actions they plan on taking.

Aerial combats, on the other hand, often begin with airships hundreds of feet apart, maneuvering for position as they near one another. Individuals matter in these battles, but it is the ship as a whole that is responsible for your survival and your actions must support the plans of your captain if you hope to survive. In short, airship combat is about the ships and their crews.

The Setup

Aerial encounters begin when one or more airships spots one or more potential enemy airships. On a clear day, spotting can happen at a distance measured in miles, but when the fog rolls in, visibility drops to a matter of a few dozen yards, and even less during thunderstorms or more severe weather. Table 4.1 lists the Spot DCs for locating other aerial crafts or creatures under various conditions. Weather has a drastic effect on visibility and wise captains deploy their wizards to search areas concealed by fog or clouds in order to gain the crucial edge against otherwise unseen enemies.

Any lookout on duty on any ship within 30,000 feet of another flying creature or vessel is allowed one Spot skill check per minute to locate the other vessel. If the vessel is actually approaching the lookout, he is entitled to a Spot skill check at the beginning of each round once the vessel comes within 3,000 feet. Refer to Table 4.1 for the DCs for these checks.

In addition to distance, darkness, and clouds, there are two other factors that can hamper visibility. The first of these is the sun, which can prove a serious liability to scouts who cannot look directly into the fiery orb. The sun is always considered to be lighting one of the quadrants of a vessel. If a vessel approaches a lookout from the direction of the sun, the lookout suffers a -10 circumstance penalty to all spot checks to detect that vessel. Obviously, the approaching vessel does not suffer any such penalty, and it is a common tactic of pirates to always keep the sun at their backs to help them spot their enemies while avoiding detection by their targets.

Targets that are substantially below the ship create a problem for the lookout as well. When attempting to spot a target at a lower altitude, the lookout suffers a -1 circumstance penalty to his Spot skill check for every range band difference in elevation. In addition, when attempting to spot any target that is within 50 feet of the ground, the lookout must use the rules for spotting ground targets (see below).

The Surprise Round

If, at any time, one vessel, or group of vessels, is aware of targets that are not themselves aware of opposition, the spotters may be able to surprise the targets. If one vessel can get into combat range of another without being spotted, the approaching vessel has successfully surprised its target and is entitled to a partial action.

The Combat Sequence

Just as in standard character versus creature combat, there is a definite sequence of events to follow. Following the setup and surprise round (if any, see above), every aerial combat follows the following steps:

1. Vessels (and their crews) start the combat flat-footed. Once a vessel acts, it (and its crew) is no longer considered flat-footed.
2. If any combatant vessels are entitled to a surprise round, they may act before the official beginning of combat, as per normal combat. The characters and vessels operating during the surprise round are entitled to a partial action and can roll initiative for this round. The surprised characters and vessels receive no actions during the surprise round and start the battle flat-footed during the first standard combat round.
3. Once the surprise round passes, any character or vessel involved in the combat that has not yet rolled initiative does so. All combatants and engaged vessels are prepared to begin the first round of combat.
4. Each vessel and its crew acts in initiative order.

Table 4.1—Airship Spot DCs

	Weather Conditions			
Distance	**Clear**	**Light***	**Mod****	**Heavy†**
0-300 feet	5	8	10	15
to 1,500 feet	10	12	15	20
to 3,000 feet	10	15	20	25
to 15,000 feet	15	17	22	27
to 30,000 feet	20	25	30	35

Note: Darkness increases all of these DCs considerably. Moonlight adds +5, and a moonless night adds +10.
* Includes a light amount of clouds and fog.
** Includes a moderate amount of clouds and fog.
† Includes storms and thick haze.

5. When every creature or vessel has had a turn, the round ends and the combatants with the highest initiative begin taking their actions again at the start of the new round, and steps 4 and 5 repeat until the combat is ended.
6. A combat ends when either all vessels or creatures on one side are dead (or have surrendered) or one vessel manages to get far enough from its pursuers to break off combat.

Combat Information

There are several differences between normal combat actions and their airship counterparts. Though these differences are relatively minor, they have an impact on the manner in which the rest of a combat is carried out and are explained here to avoid confusion.

Attack Rolls

Just as in normal combat situations, an attack roll with an airship's weaponry is made by rolling 1d20 and adding any applicable attack bonuses. The differences in this instance are in where those bonuses come from. There are several different types of attack bonus, some of which are summarized here by way of explanation:

- **Captain**. A good captain can lend his skill to others, helping them operate at the peak of their efficiency. The captain bonus is explained in more detail below, and is one of the most common types of bonus found in aerial combats.
- **Personal.** The gunner of a shipboard weapon adds his own applicable attack bonus to any attack rolls he makes with his weapon, provided he has proficiency with the weapon in question (see Chapter 8: Aerial Characters).
- **Maneuver.** Various maneuvers can provide the gunners of a vessel (or more often, gunners on a particular facing of the vessel) with a bonus to their attack rolls.

Damage

Airships and other vehicles are resistant to damage from normal attacks such as those inflicted by swords or arrows. This is represented by a Hardness rating (as found in Core Rulebook I) that is automatically overcome by any weapon fired from another airship or any spell with an area of effect greater than a 10-foot radius. A ship's weapons can also hit a creature or character and do serious damage. All hits by these weapons against creatures or characters are automatically criticals, as their immense size and power is able to cause grievous harm to creatures.

Critical Hits: Critical hits caused by any attack that bypasses an airship's Hardness are handled differently than normal critical hits. Such powerful attacks punch through the armor of the ship's hull to damage, or even destroy, the airship's sensitive components. A lucky shot could, for example, blast through the hull of a ship to destroy its engine, dooming the entire ship. A critical hit normally has some detrimental effect on the struck ship, usually reducing one of its abilities (such as speed or maneuverability) and sometimes injuring or killing crew members as well. Even more so than in standard combat, a critical hit during an aerial battle can be a devastating.

Armor Class

All vessels have an Armor Class, which works the same as for a creature or character. Whenever an attack roll is made against a vessel, its Armor Class sets the Difficulty Class for the attack. This armor class is based solely on the size of the airship, but other factors, including its physical armor, its speed, and its maneuverability, can add bonuses or penalties to attacks made against airships. Magical enhancements may also come into play, just as in a standard combat.

Hull Points

Airships do not have hit points, they have hull points. This represents the structural integrity of the ship, including its ability to continue to fly. When above zero hull points, the ship is able to fly without penalty, provided it has suffered no negative modifiers as a result of one or more critical hits. At zero hull points, the vessel is no longer airworthy and must begin descending—even during the descent, there is the chance of further damaging the airship, reducing its hull points even further. When a ship is reduced to less than 0 hit points, it begins an uncontrolled descent and crashes unless it can somehow be repaired enough to regain its flight capabilities.

Speed

All airships have a speed rating which, just as with a creature, determines how far it can move in a given round. Unlike creatures, ships must continue moving at their current speed unless they spend time slowing down or accelerating; once in motion, a ship remains in motion unless specific orders from the captain dictate otherwise. This aspect of aerial combat is one of the most difficult to deal with, as all targets are in constant motion and the conditions of the battle change round-to-round as a result.

Maneuverability

Unlike creatures and characters, airships cannot simply turn and move as they desire. The maneuverability rating of the ship determines how nimble it is in the air and how easy (or difficult) it is to perform various maneuvers. A small ship, for example, is able to change course rapidly, altering its trajectory without much effort, while a dreadnought may only be able to change course once every few hundred feet. More maneuverable ships are better able to position themselves in combat and have less difficulty responding to changes in the battle than do larger, less maneuverable ships. See "Chapter 3: Aerial Movement" for more information about the maneuverability of airships.

Saving Throws

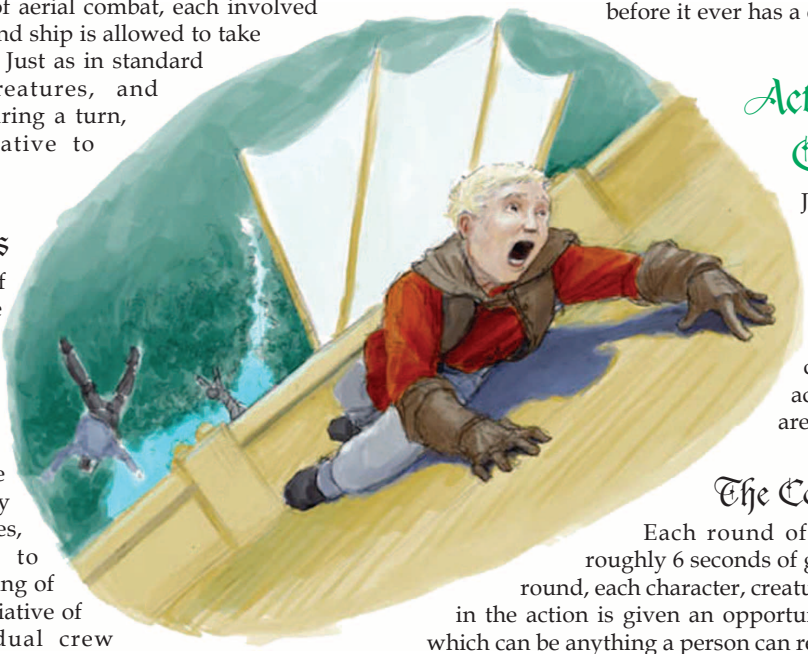
Ships make saving throws in certain circumstances, as do characters or other creatures. In general, a ship must only make Fortitude or Reflex saves. Fortitude saves should be used in circumstances where the general durability of the ship is threatened (such as when a ship sustains a critical hit or is put under great strain). Reflex saves, on the other hand, are useful when there is a chance of the ship receiving only a glancing blow or escaping from the blast radius of an attack with an area of effect. The easiest way to remember this is that a Fortitude save represents the airship's ability to *weather* damage, while a Reflex save is the vessel's ability to *avoid* damage.

Critical Hit Components Table

Every ship has a table of this type. This simply lists the critical components of a ship and their probability of being hit whenever the ship suffers a critical hit. While the ship's builder determines the placement of components on the table, the amount of spaces each component takes up on the table is fixed—components take up a particular number of slots based on their type, size category, and the size of the ship. Larger components (such as engines) tend to get hit more often, for example, while smaller components (such as compasses) rarely suffer direct damage from critical hits.

Initiative

During each round of aerial combat, each involved character, creature, and ship is allowed to take one or more actions. Just as in standard combat, ships, creatures, and characters all act during a turn, from highest initiative to lowest.



Initiative Checks

At the beginning of each encounter, the captain of every involved airship must make an initiative check. The captain's initiative determines the initiative of every action his airship takes, from maneuvers, to movement, to the firing of its weapons. The initiative of officers or individual crew members only becomes important if a boarding action occurs, or if the captain is killed.

Flat-Footed

Just as in normal combat, all creatures and airships involved in an aerial combat are considered flat-footed until they take their first action. Characters are unready for battle and have yet to prepare their airship for combat. Naturally, special abilities for creatures or characters can overcome this flat-footed state faster than normal, as per standard combat rules.

Surprise

Surprise is much more likely to occur in aerial combat than it is in most standard combat situations. Because airships can approach using the concealment of clouds and may be able to initiate attacks from a very great distance, it is not at all uncommon for a surprise round to occur between airships.

How Surprise Works

Anytime one airship spots another airship without being spotted in return, there is the chance of a surprise round. If the spotting airship manages to get within weapon or spell range of the unaware airship without being spotted, the spotting airship is then entitled to a surprise round.

The Surprise Round

During a surprise round, all crewmembers aboard the airship, including all officers and weapons crews, are allowed a single partial action. This allows the airship to maneuver into position and each of the weapon crews to fire their weapons a single time, for example.

Unaware Combatants

When a combatant is attacked during a surprise round, he is still flat-footed and loses any Dexterity bonus to his Armor Class. This penalty applies to airships as well, who lose any bonuses their pilots might provide to their Armor Class during the round. This can have devastating effects on the surprised airship, which may be torn asunder by enemy fire before it ever has a chance to react.

Actions in Aerial Combat

Just as in ground-based combat, aerial combat is composed of a sequence of movement, attacks, and spell casting. The combat round and the actions that comprise it are detailed below.

The Combat Round

Each round of aerial combat takes roughly 6 seconds of game time. During this round, each character, creature, or airship involved in the action is given an opportunity to take an action, which can be anything a person can reasonably perform in 6 seconds.

Each round begins with the characters with the highest initiative result acting first, followed by the actions of all other involved creatures, characters, or airships, taking place in sequential order until the creature or airship with the lowest initiative has had a chance to act. At that point, the round ends, and another round begins.

Action Types

All creatures and characters involved in an aerial combat are allowed to take any actions they would normally be allowed to take during any other combat, with the following exceptions.

Captains must spend a standard action each round directing the ship. If the captain does not spend a standard action directing his airship, the airship continues on its present course and only deviates from that course if the pilot of the airship is attempting to avoid a collision or some other hazard.

As noted above, the captain of the ship must give orders before the ship can begin acting on them. In practice, this means that the orders given by the captain always occur one round after the captain issues them.

Pilots must use a full-round action to keep the ship in the air and heading in the proper direction. If the pilot does not, or cannot, take a full-round action to pilot the ship, the vessel is considered out of control during that round (see chapter 3).

Airship Actions

An airship is not a living creature, and performs differently from a creature during combat. The significant differences between an airship and a creature are as follows:

- The airship cannot freely change direction, speed, or facing. See Chapter 3: Aerial Movement, for more information on how an airship can move and the restrictions it has on this movement.
- An airship must always move its full current speed during a round, without exception. The airship moves during its initiative, as directed by its captain and according to any skill checks necessary to fulfill those orders.
- Airships never make attacks, but the crews of airships make attacks using the airship's weaponry. These attacks occur during the captain's initiative.
- Airships do not threaten areas or make attacks of opportunity. In addition, airships do not provoke an attack of opportunity, either, regardless of how many threatened areas they pass through.

Armor Class and Airship Speed

The armor class of an airship is based on its size, primarily, but also on its speed. A fast moving airship is very difficult to hit, regardless of its size. For every 10 mph an hour an airship is traveling above 30 mph, it receives a +1 circumstance bonus to its Armor Class and to any Reflex saves it may be required to make. Note that this bonus is based on relative speed, rather than actual speed.

In cases where one airship is trailing another, the relative speed of the leading aircraft is equal to its actual speed minus the speed of the airship that is trailing. Thus, an airship that is traveling at 50 mph an hour being trailed by an airship traveling at 30 mph has an actual airspeed equal to 20 mph in regards to the trailing airship and receives no bonus to its Armor Class.

When two airships are approaching one another head on, neither airship receives the speed bonus to its Armor Class against attacks made by the other airship.

In all other cases, the relative speed of an airship is equal to its actual speed. This makes it quite possible for an airship to have a different Armor Class against attacks from different opponents, based on their relative positions.

Attacks of Opportunity

As noted above, airships neither make nor provoke attacks of opportunity. Creatures and characters may still make or provoke this type of attack, as per the standard d20 combat rules.

It is possible, however, for a character on, or attached to, an airship to provoke an attack of opportunity if they pass through a threatened area. This happens rarely, but it can happen, especially if two ships collide or pass within a few feet of one another during combat, or when creatures on the deck of an airship have considerable reach.

Attack Actions

Characters or creatures involved in combat may perform any of the attack actions they are normally allowed during a combat round. When attacking other creatures or characters, all standard modifiers and rules apply, with the following exceptions.

Creatures aboard another airship are always considered to have one-half cover (+4 to AC) from any attacks that come from outside of that airship. In addition, all creatures aboard an airship receive the same speed bonus to their Armor Class as the airship itself against any attacks that come from outside the airship.

Hull Points and Hardness

An airship is an object; as such, it has a Hardness rating based on the type of material used in its construction. This Hardness rating only applies to attacks made by creatures using weapons that are not designed for ship-based combat. Spells (even if they affect more than a 10 foot radius) and other large-area attacks also must overcome the Hardness of the airship they target, unless they are specifically designed for airship-to-airship combat.

Applying Hull Damage

Damage suffered by the ship reduces its hull points. When a ship's hull points are reduced to zero, it must begin descending immediately and loses 50 feet of altitude each round even if it attempts to maintain altitude.

If reduced below zero hit points, a vessel begins falling. During the first round in which it falls, the vessel falls 150 feet, after which it falls 500 feet per round until it impacts the earth and is considered to have crashed—see below for more information on crashes and impacts with other terrain features.

Airship Critical Hits

When an airship suffers a critical hit from another airship weapon, it is handled differently than a standard critical hit, which simply causes more damage. Instead, the attacker must roll 1d100 and announce the result—the damage from the critical hit is then applied to the critical component listed on the target airship's Critical Hit Components Table. Note that the applied damage is rolled normally and is not doubled or tripled, as with a normal critical hit. In most cases, when a weapon is reduced to zero hull points, it immediately becomes non-functional, but no other ill-effects occur.

Engines, however, and some weapons, react rather poorly when destroyed. See the description of individual components for any additional effects that occur when a component is destroyed. Note that destruction of any component automatically removes any benefits supplied by that component, in addition to any other effects that occur.

Damaging Characters or Creatures with Shipboard Weapons

Weapons designed for combat between airships are tremendously powerful, built to inflict massive damage against sturdy, well-armored objects. Because of this, hitting a character or creature (of less than huge size) causes a lot of damage. Any creature of less than Huge size hit by a weapon designed for ship-to-ship combat automatically suffers a critical hit from that weapon. Creatures of Huge size or greater do not suffer such grievous damage because their bodies are large enough to absorb the impact.

When a critical hit indicates a crew hit, do not roll damage, simply reduce the total crew hit dice by the number of damage dice caused by the attack and reduce the number of crewmen appropriately. Note that reduced crew numbers may adversely affect an airship, as detailed in **Chapter 1: Airship Construction** and **Chapter 2: Airship Crews.**

True Ranges

When dealing in three dimensions, it is important to note that the actual distances between targets is not a based on simply adding distances in elevation to horizontal distances. Figuring the true ranges between two targets calls for the use of the Pythagorean Theorem.

In short, you must add the square of the horizontal distance between the two targets to the square of the vertical distance between the two targets to determine the square of their actual distance from one another. Once the square of this distance is known, you can break out your calculator and get its square root, which is the actual distance between the two ships. Thus, two airships which are 100 feet apart, vertically, and 100 feet apart horizontally, are actually roughly 140 feet apart (100^2+100^2 = 20,000. The square root of 20,000 is 141.4214, which we can round down to 140 feet quite easily).

Attacking Upward or Down

When launching an attack at a target 50 feet or more above you, the drag of gravity quickly reduces the range of any weapon with a physical projectile. Likewise, firing at targets 50 feet or more below you allows you to squeeze a bit more range out of your weapon.

When firing at targets above, you must decrease the maximum range of your weapon by ten percent for every 50 feet of elevation. This does not change the range increment of your weapon, only its maximum range. This has the effect of reducing the effective range of your weapon without changing the range category at which you are firing.

Likewise, when firing down at targets below you, you may increase the maximum range of your weapon by ten percent for every 50 feet difference in elevation. This increases the maximum range only, not the range increment. Thus, while you may be able to fire further at targets at very long range, it doesn't make it any easier for you to hit targets within the range of your weapon.

When two airships occupy the same horizontal space but are separated by a vertical distance, they are most often not perfectly lined up, one above the other. The crew of the higher ship may fire down on the crew of the lower ship without penalty, as they lean out a bit over the gunwales of their ship and launch attacks down. Unfortunately, the crew of the lower ship is at a great disadvantage when returning fire at the crew of the ship above them. The higher ship's crew receives three-quarters cover from the body of their ship, which protects them from the attacks of their enemies.

Special Combat Maneuvers

The pilot of an airship can attempt to perform a few movement maneuvers with the airship that are not normally available during other types of combat. These maneuvers are described in this section.

Fly Over

It is possible to fly over the top of another ship that is within the same altitude band. Doing so allows your crew to attack with less fear of reprisal from their enemies, shielded as they are by the body of the airship.

When you attempt a fly over, your opponent is certainly going to attempt to stop you from getting in a better position from which to attack. Pilots of both ships must make an opposed Profession (Airship Pilot) skill check (DC 15 + the size rating of their respective vessels). The pilot who succeeds by the greater margin maneuvers his ship to the stop of the stack and the loser must be satisfied with passing beneath the winner. On a tie, the ships collide.

Ramming

Intentionally piloting an airship into another airship is referred to as ramming, and is performed only by those pilots who aren't overly concerned with the safety of their own ships. The damage caused by a ram is based on the sizes of the involved ships and their relative speeds. While very large ships can easily damage smaller ships, a small ship traveling at a high rate of speed can quickly turn into a very damaging obstacle for even a large ship.

For every full 10 mph of relative movement, an impact between two ships causes 1d6 hull points of damage. Note that relative speed is based on the speed at which the attacking ship is moving and the speed and direction at which the targeted ship is moving.

Consult the diagram below to see how this works out in practice.

Diagram 4.1—Ramming Angles

In Example 1, the attacking ship (black) is ramming the target airship (gray). In this case, the speed of the defending ship is subtracted from the speed of the ramming ship to arrive at the final total speed of the ramming attack. If both ships are moving at the same speed, or the target ship is moving faster than the attacking ship, the minimum damage caused by a successful ram is still 1d6 hull points of damage.

In Example 2 and Example 3, the target ship (gray) is moving away from the attacking ship (black) at an angle. In this case, subtract one-half of the defending airship's speed from the speed of the attacking airship, rounding down to the nearest 10 mph.

In Examples 4 and 5, the target ship is moving perpendicular to the flight path of the attacking ship. Here, subtract one-quarter of the target airship's speed from the speed of the attacking ship to determine the total ramming speed of the attack. As always, round the speed down to the nearest 10 mph.

Examples 6 and 7 illustrate the target ship approaching the ramming ship at an oblique angle. When this occurs, add one-quarter of the target airship's speed to the speed of the attacking ship. The combined speed of the two ships makes the attack much more severe and potentially devastating to both ships.

A head-on collision occurs when ships impact one another while traveling in opposite directions. The most devastating type of ramming action, this has the potential to destroy both ships. When ships impact one another as illustrated in Example 8, add the speeds of both ships together to determine the final speed of the attack.

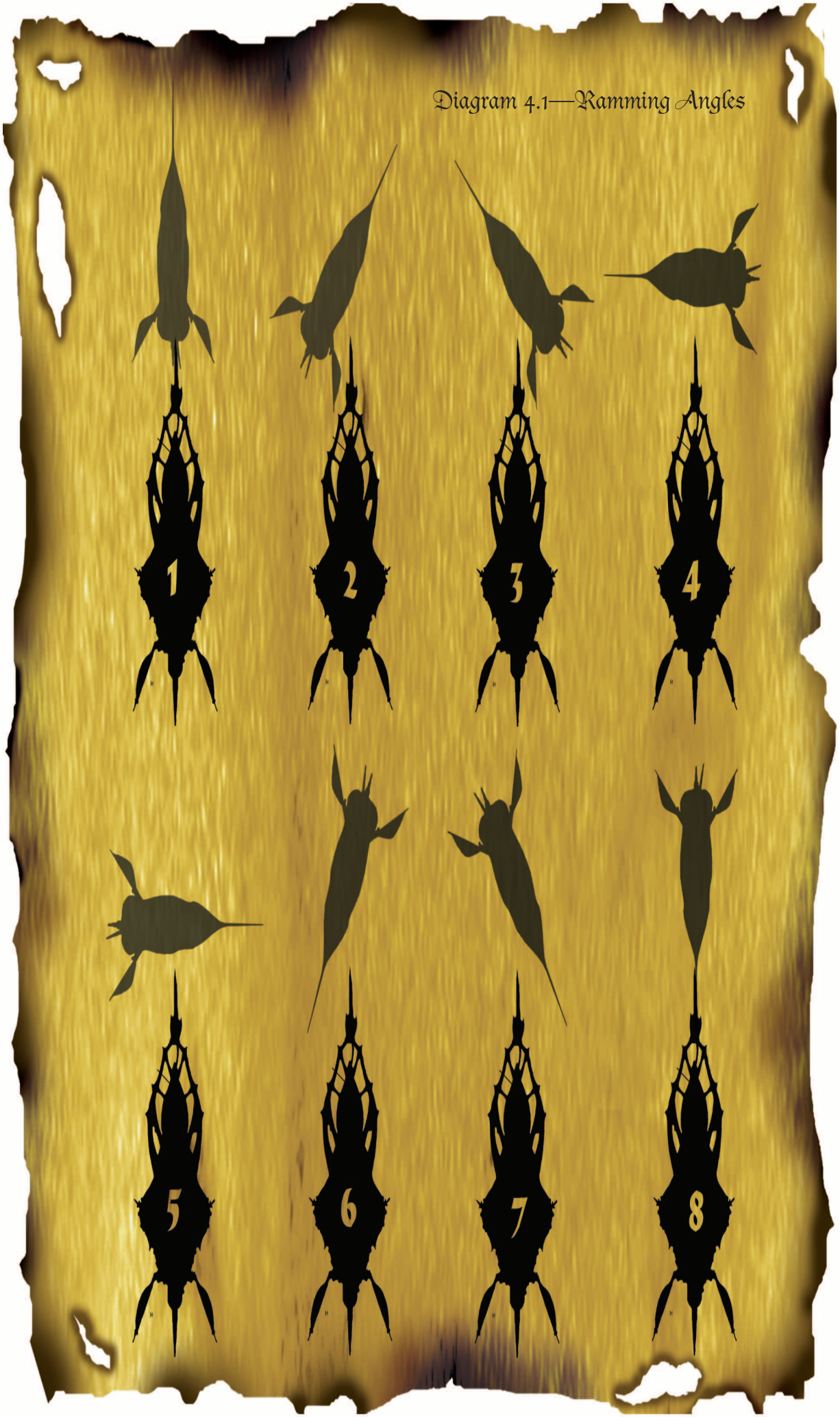


Diagram 4.1—Ramming Angles
1
2
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Successfully ramming an enemy ship requires more than simply maneuvering your ship into the same square as an enemy ship at the same altitude. The ramming vessel must move into the square of the defending airship, then the pilots of both vessels must make opposed Profession (Airship Pilot) skill checks (DC 15 + 1 per 10 mph of the actual ramming speed). If the attacking pilot wins the opposed skill check, the ram occurs. If the target pilot wins, however, the attacking vessel continues its movement and does not impact the target ship at all. If the movement of the attacking vessel ends in the same square as the target vessel, the attacking vessel is above the target vessel.

With a successful ram, if the attacking vessel is one or more size category smaller than the target vessel, the attacking vessel suffers the same amount of damage as the target vessel and immediately comes to a stop. If the attacking vessel is at least the same size as the target vessel and no more than one size category larger, reduce the damage it suffers from the ram by 2d6 hull points, to a minimum of 1d6 hull points—the attacking vessel's speed is immediately reduced to 10 mph and it stops in the same square as the defending vessel. If the attacking vessel was already traveling at 10 mph, its speed is reduced to 0 mph.

For every additional size category larger the attacking vessel is than the target vessel, the attacking airship suffers 1d6 fewer hit points of damage. In addition, if the attacking vessel is at least two size categories larger than the target vessel, the attacking vessel may continue its move for the round, and its speed is reduced to one-half its speed before the collision, rounded down to the nearest 10 mph. In this case, the facing of the rammed airship is pushed 45-degrees away from the direction of the impact with the ramming vessel.

A vessel that is rammed by an airship more than two size categories larger than itself may also be pushed or heeled over if it is struck at an approaching angle or from the side. A ship struck at an approaching angle must make a Reflex save (DC 15 + 1 per size category smaller than the ramming ship) to avoid being heeled over. If it does make the Reflex save, it is still turned 45-degrees away from the ramming ship, though it remains in the same square and is now under the ramming ship if that ship also remains in the same square. If the Reflex save fails, the rammed ship is now heeled over onto its side, away from the ramming ship, and is also pushed below the ramming ship.

If it is rammed in the side, the airship must make a Reflex save (DC 15 + 2 per size category smaller than the ramming ship) to avoid being heeled over. If this save fails, the rammed ship immediately heels over onto its side and is pushed below the ramming vessel. If the rammed ship succeeds at its Reflex save, its rear is pushed 90-degrees away from the attacking vessel and below the ship that rammed it. In most cases, this places the rammed vessel beneath the ramming airship and heading in the exact opposite direction as the ship that just rammed it.

It is possible to ram a ship by coming down on it from above, but it is not possible to ram a ship by coming up at it from below—not only would ramming a ship from below stand a great chance of killing off a few of your crewmembers, but there is the very real chance that any sails on your vessel would be destroyed.

When ramming from above, your airship descends at the target, with its bottom presented, as if it were landing atop the other boat. Treat this is as if your boat and the boat you were landing on were heading at an angle to one another, as in example 3, above.

If you succeed, you cause an automatic crew critical and an automatic sail critical. The two airships then drift apart vertically, so there is a 1d4 X 10 foot gap between them.

Boarding Attempts

Sometimes, it is much easier to deal with an enemy airship by simply pulling up alongside it and unloading some heavily armed adventurers onto its deck. Boarding maneuvers also have the added bonus of allowing the capture of prisoners as well as expensive airships.

To board an enemy ship, you must first draw alongside it and either put down boarding gangplanks or, more likely, tether the two ships together using grappling hooks and lines or magical methods (*web* spells work great in this regard, see Chapter 9: Aerial Magic, for more information).

Drawing alongside another ship requires that both ships be moving at the same speed. Matching the speed of the airship you wish to board requires a Profession (Airship Pilot) skill check (DC 15 +1 per 10 mph of the targeted vessel's current speed) and may require several rounds of acceleration or deceleration to achieve. Once the skill check is made, the pilot may then attempt to draw close enough to the enemy to let his crew attempt to board. To do this, the pilot must put his ship into the same square and altitude band as the target vessel.

During the round in which the boarding vessel enters the same square and altitude band as its target, the crew of the boarding vessel may attempt to throw grappling hooks onto the target vessel. This is a ranged touch attack against an Armor Class of 15, regardless of the actual Armor Class of the opposing ship. For every grappling hook attack check that succeeds, one grappling hook becomes attached to the enemy vessel. Crew members may only make a grappling hook attack if they readied an action during this or the previous round, as they must time their attacks for the moment when the two ships are within range of one another.

The grappled ship may attempt to break free of the boarding attempt by making an opposed Profession (Airship Pilot) Skill check against the pilot of the boarding vessel. The targeted airship suffers a -1 circumstance penalty for every grappling hook attached to it, however, as these lines interfere with its ability to maneuver. The targeted ship may attempt to escape from a boarding attempt once each round, until enough grappling lines have been attached to it to immobilize the vessel (see Table 4.2).

While grappling hooks are being applied to a vessel, it is quite possible for the ship's crew to chop those lines down. During each round, the crew may make a standard melee attack against an Armor Class of 10 to cut the ropes loose. Assuming standard ropes are used, every successful hit by a crewmen removes one rope from his airship. A crewman must stand at the gunwale of his ship and reach over to cut a

Table 4.2—Grappling Airships

Airship Size	Grappling Lines Required to Immobilize
Tiny	2
Small	3
Medium	4
Large	5
Huge	7
Gargantuan	9
Colossal	12

grappling rope, exposing himself to enemy attack. Successful boarders complement their grapple attempts with heavy missile and spell fire in order to keep the enemy crew down and frightened. Of course, sheer force of numbers is effective as well.

Once the requisite number of grappling hooks are in place, the attackers may lower their gangplanks and begin flooding across to lay waste to the enemy crew. At this point, it's best to move the action to the deck plans, placing them side by side and playing out the rest of the battle using the standard d20 combat rules.

Note that it is not possible for a smaller airship to immobilize a larger airship, however, a smaller airship may attempt to bind itself to a larger vessel using the same process as above. In this case, however, the number of grappling hooks that need to be attached to the enemy vessel are equal to the size category of the attacking ship. Once the required number of hooks are in place, the smaller ship is considered attached to the larger ship and remains connected to it until the grappling hooks are cut loose.

While a smaller airship is attached to it, the larger airship suffers a maneuverability penalty equal to -1 per size category of the smaller vessel. If, at any time, the crew of the larger airship is able to reduce the number attached grappling hooks below the required level, the smaller airship breaks free and is considered out of control.

Boarding From Above

A pilot may, if he chooses, decide to fly over the top of an enemy airship in order to put his drop line boarders into position. Matching speed and maneuvers of the enemy airship is crucial in this case, even more so than when attempting to board using grapples and gangplanks. Using drop lines requires the same attempts to match speed and course as for a normal boarding attempt, but the attacking pilot suffers a -5 circumstance penalty as he attempts to line his vessel up over an airship he cannot really see.

Movement on the Deck

While it is not difficult to remain standing on a smooth-flying airship, staying on your feet during a frenzied combat as your ship dives, turns, and takes hits from enemy ships may not be so easy.

Balance is an important skill to have on the deck of a ship. During any round in which a vessel takes more than two 45-degree turns, deck hands who are not otherwise secured must make a successful Balance check (DC 10 + 2 per turn after the first) or fall to their knees (unable to move and losing their Dex bonus to AC for 1 round).

Similarly, when a ship is rammed, all deck hands that are not secured must make a successful Balance check (DC 15 + 1 per 1d6 hull points of damage caused by the ramming attack) or fall prone.

Defensive Maneuvers

Each round, as a free part of his normal Profession (Airship Pilot) actions for that round, a pilot may attempt to provide a defensive bonus for his airship. The pilot makes a Profession (Airship Pilot) skill check (DC 20). Success provides a +1 circumstance bonus to the airship's Armor Class until just before the pilot's first action on the following round. An additional +1 to this bonus is added for every 5 full points by which the DC of the skill check is exceeded. This bonus may not exceed the maneuverability of the airship in question, however.

Flying Creatures and Characters

Once a flying creature leaves his airship, he moves at his own rate, and not at the speed of the ship. Given the scale at which airship combat normally occurs (50-foot squares being the norm), creatures and characters that are flying must move very quickly to have any meaningful place in the battle. Most flying creatures move significantly slower than flying ships. A creature with a fly speed of 90, for example only flies at 10 mph, and can "run" up to a maximum of only 41 mph. Most flying creatures are not even this fast (calculate proportionally). At combat speeds, a flying creature can quickly be left behind.

If a creature flies less than 50 feet in a given round, it can't even move out of its current square. In this case, the creature requires two rounds to move from one square to the next. Of course, the character can always spend a full-round action to run or make a double move. Regardless of its speed, a creature confined to a single square may close with any airship occupying the same square in a single round.

Ramming Creatures

It is possible for creatures to ram airships, but it is rarely a good idea. Only creatures of sizes Huge, Gargantuan, or Colossal may ram an airship, and are treated as if they were airships of size Tiny, Small, and Medium, respectively. Creatures who ram airships suffer hit point damage equal to the hull point damage an airship would suffer during a ram, but cause only one-half the damage an airship would deal on a successful ram.

On the other hand, airships that ram creatures suffer only one-half the normal damage they would suffer from ramming another airship, but deal full damage.

Rather than making Profession (Airship Pilot) rolls, a flying creature may add the result of a d20 roll its Dexterity score (not its bonus). When determining the success of a ram, this roll opposes the skill of the enemy pilot.

Table 4.4—Converting Move Rate to MPH

Fly Speed	Normal x1 MPH	Double x2 MPH	Run* x3 MPH	Run x4 MPH	Run** x5 MPH
10	1	2	3	5	6
20	2	5	7	9	11
30	3	7	10	14	17
40	5	9	14	18	23
50	6	11	17	23	28
60	7	14	20	27	34
70	8	16	24	32	40
80	9	18	27	36	45
90	10	20	31	41	51
100	11	23	34	45	57

* Encumbered
** With Run feat

Winged Boarders

Using flying creatures to board a vessel is of course the easiest way to take over an enemy ship. However, unless the ships are moving slowly, or are close together, this maneuver may not be possible. Because of the round based nature of aerial combat, it should not be difficult for most flying creatures to get to enemy ships that are within a few hundred feet of their own, but they may have a hard time actually landing on one if the airship is traveling faster than their maximum move rate.

Calculate the relative speed between a creature and a ship by subtracting the creature's max speed from the ship's current speed. To successfully land on a fast-moving ship, the creature must make a Balance check (DC 10 + 1 per 5 mph of relative speed difference). A successful roll puts the creature wherever he likes on the deck, failure indicates that the creature missed the ship, is flying in the same square as the ship, and can make another landing attempt next round if he can catch up to the ship.

Use Table 4.4 to convert the fly speed of creatures to MPH. For creatures with movement rates greater than 100, calculate by adding rows. For example, for a creature with Fly 120, add rows 100 and 20. Speeds should be rounded to the nearest 5 mph in most circumstances. Taking a double move is a full-round action. Running is a full-round action, and all Dexterity bonuses to AC are lost. Creatures may only run for a limited duration (see the *Player's Handbook*, Chapter 8).

Tracking a Combat

Three dimensional battles can be quite complex and often involve a good deal of record keeping. While there is no one 'right' way to keep track of these battles, this section offers some suggestions for keeping track of where ships are in relation to one another.

Maps

This book was written with the assumption that some sort of battle map is used during aerial conflicts. Ranges and other aspects of ship-to-ship combat were designed for a square map on which every square represents 50 feet. Using a map of this type greatly simplifies your combats and make it much easier to make tactical decisions based on positioning of ships and their movement.

Where geographical features exist on your map, you should note their heights. This allows you to keep track of which features block line of sight between two airships and to determine at what point airships impact terrain features.

Positioning and Altitude Bands

Altitudes and exact positioning of airships is not assumed in this combat system—all ships are assumed to be within a 50-foot square on the map and within the same 50-foot altitude band. Two ships may only occupy the same square and altitude band if at least one of the airships is size Small or smaller. Larger ships may never occupy the same square if they are also within the same altitude band.

Note that all ships in the same altitude band are considered to be at roughly the same altitude in comparison to one another. That is, neither ship is specifically above nor below another, though particular maneuvers can briefly change this.

Altitude Markers

Because airships have a limited ceiling of operation (usually 500 feet or lower) you can easily use a d20 to keep track of the altitude of each ship in the combat. For the purposes of this combat system, altitude is broken into 50-foot bands; by placing a d20 on the counter used for the vessel and turning it so that the number corresponding to the airship's altitude band is facing up, you can always quickly see how where ships are in relationship to one another.

Ships which are flying higher than 1,000 feet (the highest altitude band denoted by a d20), can use a d10 to denote successively higher ranges of altitude, with each number representing one of the 1,000-foot 'superbands' of altitude. Thus, a ship with a d10 showing a 3 and a d20 showing 5 would be 3,250 feet above the ground.

Small beads can also be used to denote different altitudes, with beads of one color used to denote 50-foot altitude bands and beads of another color used to denote the 1,000 foot superbands.

Whatever method you choose, it should make it immediately obvious which altitude band a ship is in, making your combats clearer and simpler to track.

Deck Plans

When characters are involved in an airship combat, it's a good bet they want to attempt to get on board another ship and deal some mayhem up close and personal. For this reason, it is a good idea to have deck plans of the involved ships at hand, so that characters who board a ship have a battle map of their own. It is recommended that deck plans be drawn

with 5′ squares, to make it as simple as possible to track the movement and actions of characters that are aboard airships.

Characters and Crewmen

The role of the individual aboard an airship is greatly lessened during battles between these flying vessels. While the number of crewmen available is crucial in determining which of an airship's many components can be currently manned, a single crewmen has little impact on the course of the battle as a whole.

Player characters and important NPCs, on the other hand, play a much more active role in the course of the battle and can significantly change the course of an aerial combat through their actions.

During an aerial combat, a player character or important NPC can take any action he is normally allowed in a round, including making attacks, casting spells, or moving. Because of the larger scale of aerial combat, however, it is sometimes necessary to fudge the actual movements of characters, especially those that are unable to move at least 50 feet each round under their own power.

Airship Scale and Characters

Because airship combats are resolved on battle maps with 50-foot squares, it is quite difficult to accurately place characters. Because of this, a character is always considered to be somewhere in the square in which his counter is located, but his exact location inside that square is unimportant.

Moving from one square to another requires moving 50 feet in a single round, otherwise the character is simply flitting around within the same square. Characters unable to move 50 feet in a round take two rounds to move between squares, unless they spend the entire round taking either a double move or run action.

Damage to the Crew

The crew of an airship is generally made up of a number of airmen who are essentially the same, in terms of combat ability and overall skill. Because of this, it is easier to track the crew as a unit, deducting hit dice of damage when the 'crew' is injured. When a number of damage dice equal to the average hit dice of the crewmen is dealt, remove an airman from the ship's roster. This has two benefits: first it reduces book keeping, which is important when there are several ships with dozens of crewmen on each side of a battle, and second, it keeps the focus on the characters. Because they aren't simply one of the many minions running the airship, they should receive the lion's share of the attention.

When crewmen are removed from the ship's roster, those that were not on duty move in to replace any lost while actively operating the airship. Only when an airship is reduced below the minimum number of crewmen required to keep its components operating does it suffer adverse affects from crew loss. Of course, dying crewmen aren't defending the airship any longer, which makes it that much more likely that a boarding attempt succeeds.

Note that this system does not apply to the officers (or warrant officers) of an airship—they are only injured when specifically targeted by an enemy airship's crew or when their airship suffers a critical hit. In most ways, they are very similar to player characters and are as important to the ship's functioning.

The Crew in Combat

Most of an airship's crewmen simply do not have time to engage in combat while their airship is flying. Only those crewmen not required to keep the airship running are ever involved in combat unless, of course, boarders arrive on the airship intent on taking the vessel by force.

During combat, crew members can be treated as an extension of their officers or player characters. This allows combat to be abstracted significantly and can eliminate the need for maps at a character level at all during airship-to-airship battles. While not everyone finds this system to their liking, it does provide a quick and reasonably accurate method for resolving large-scale combats without tedious bookkeeping and counters or miniatures.

Supporting Crew

All crew members should be assigned to an officer or another character, and no officer or character can take command of more crew members than he has levels or hit dice. These assignments should be noted on the ship's roster for future reference.

During combat, the crew members can follow their leader wherever he goes, provided they do not need any specialized means of travel (such as being able to fly) in order to move to the leader's current position. As long as these crew members are with their leader, they provide a +1 circumstance bonus to his Armor Class and Attack rolls as they follow his lead in battle.

Area effect spells, or attacks which affect an area, cause damage to followers just as they would the airship's crew—that is, one die of damage removes one hit die from the followers, and when a number of hit dice equal to the average level of the followers has been removed, one of the followers goes down. Characters and officers suffer damage as normal during a combat and have all their normal options available during the combat round.

If it ever becomes important to know, all crew members are gathered around the character as close as possible, though none obstruct his view of the enemy or ability to engage in melee combat. This normally means that there are seven crew members clustered around the character, leaving only his front square open.

Officers in Combat

Most of the officers aboard an airship engage in combat only as a last resort, or to repel boarders. Captains, for example, do not leave the decks of their ships to engage the enemy, but also don't hesitate to go after any enemy creatures that do make it to their airships.

The Master of Arms is one exception to this rule; he always goes out of his way to bring down as many of the enemy as possible. If he's given a chance to lead a group of airmen onto an enemy vessel, he'll do his best to capture the vessel and turn it against any other enemies in the area.

For his part, the pilot does not leave the wheel unless he receives a direct order from the captain during combat. Many pilots have been found dead, with their hands still locked tight on the pegs of their wheels despite their grievous wounds.

Navigators and other officers without much place on the deck during a pitched combat typically retreat below decks. However, as many navigators are healers or other types of spellcasters, they try to brew up as many nasty surprises as possible for their enemies and many emerge on the deck in the latter stages of the battle to turn the tide for their allies or to simply help with the quashing of their enemies.

Weapons Crews
These crews act as a unit during the ship's initiative phase, using the highest attack bonus amongst them as the bonus for the weapon. When not firing, all crew members are considered to be occupied with loading and aiming the weapon. The rates of fire in Chapter 1: Airship Construction account for this method of firing and the times needed for reloading the weapons.

Characters Attacking Airships
Directly attacking an airship is rarely the best choice of action for a character, however powerful individuals (especially spellcasters) may choose to take a stab at a smaller airship or one that has already been weakened by enemy attacks. A sufficiently powerful attack by an individual character might even be able to deliver the killing blow to an airship, but such events are the stuff of legends and occur only rarely.

For a spell that causes damage to affect an airship, it must have an area of effect greater than a 10-ft. radius circle. Most individual attack spells are worthless against airships, but *fireballs*, *ice storms*, and similar spells can prove quite useful during combat. Note that these types of spells never cause critical hits, but deal damage to any crewmembers caught in their areas of effect.

Attacks against specific creatures are resolved normally. However, when making a physical attack against an airship, critical hits are resolved differently. While a character may cause a critical hit against an airship, he only scores a critical threat on a result of a natural twenty, regardless of the weapon used. The damage for a confirmed critical is not doubled or tripled, instead roll on the critical components table and apply standard weapon damage to the airship component that suffers the critical hit. Remember to reduce the damage caused by any creature of less than Huge size by hardness rating of the airship or component.

Special Character Combat Maneuvers

While standing and fighting is all well and good for those who wish to stay safely on the deck during combat, there are other options available to characters who are more daring. In this section, you will find information on ways in which you can use standard combat maneuvers to greater effect during aerial combat, as well as a handful of new maneuvers you can use to get the drop on your foes in the sky—or on the ground.

Attacking From the Rigging

Airmen often become quite adept at launching attacks from the ropes used for their sails, swinging from the rigging to confound their opponents. This works similarly to the Spring Attack feat, allowing the airman to attack while moving, but such attacks are less likely to hit successfully.

In order to attack from the rigging, the airman must be at least 20 feet above the deck and on the mast of his airship. Attacking from the rigging is a full-round action, during which the airman swings down from the rigging on a rope and makes an attack at a creature within 20 feet of his current location. The airman does not provoke an attack of opportunity from the target he is attacking, but he does provoke attacks from other creatures, as normal.

The attack is made at a -4 to-hit penalty, as the airman simply swings past the target and attempts to hit him as he whips through the air, making it very difficult to aim accurately. A target that is not aware of the airman, or is flat-footed, may suffer a sneak attack by someone attacking from the rigging. This sneak attack is spoiled, however, if anyone manages to hit the airman as he swings out toward his target.

Note that the swinging action carries the airman laterally across the ship; he heads down towards the mast, and then back up, ending his movement at the same position on the mast, but on the opposite side of the boat from where he began. If necessary, the attacker's path may be made more of a semi-circle than a straight line. While swinging out, the airman's altitude drops roughly 5 feet for every 5 feet he travels laterally, and then increases at the same rate once he swings past the midpoint of his movement.

Bull Rushing

While this is relatively tame on land, it can be devastating when used against an opponent near the edge of an airship's deck. If the airship has a railing, and most airships do, your opponent is treated as if he were one size category larger than normal when you attempt to bull rush him off the deck.

If your bull rush attempt succeeds, however, you have just shoved the target up and over the railing. Unless he can fly (or manages to get a desperation grab in) your opponent is on his way to the ground now, most likely suffering a very messy death.

Desperation Grab
Characters or creatures knocked over the rail by a bull rush or other attack are allowed an opportunity to make a last, desperate grab to catch the railing before pitching over to their doom. This requires a Reflex save (DC 15 + the amount by which the attacker beat the defender on the bull rush, or

the amount of damage caused by the attack), which, if successful, leaves the defender dangling from the railing off the side of the airship. While this probably isn't enough to save his life on its own, it does give the attacker a chance to show mercy and the defender an opportunity to be saved by his peers.

Pulling yourself back over the railing of a ship requires a simple strength check (DC 10) and a move-equivalent action, drawing an attack of opportunity.

Disarm

Any creature or character disarmed within 5 feet of the edge of an airship's deck stands a 10% chance of the weapon going overboard. If the disarming character would like to improve his odds of sending the defender's weapon over the edge, he may accept a -5 penalty to his attack roll to ensure it goes tumbling over the railing and to the ground below.

Drop Attack

This works the same as a charge, except the attacker drops from a height rather than simply rushing at the defender. This adds 1d4 to the damage caused by the attack for every 10 feet the attacker drops, to a maximum of 50 feet. The attacker suffers normal falling damage from this attack, and suffers a -3 penalty to his Armor Class rather than the normal -2 for a charge attack. The defender may set his weapon as normal against the charge.

Grappling

Instead of just pinning or damaging a grappled defender, the attacker can try to move him around, possibly to drop him off the deck of the airship. This is treated exactly as if the attacker were trying to pin the grappled defender but if the attacker wins, the defender is instead moved 5 feet in the direction chosen by the attacker. In this case, the attacker moves with the defender and remains in the defender's square. If the attacker fails, however, no movement occurs.

If the grappling characters are at the edge of the airship deck, either character may attempt to hoist his enemy over the railing and to the ground below. This is treated as an attempt to pin, but the attacker suffers a -4 penalty to his grappling check due to the difficulty of lifting his foe over the rail—this penalty does not apply to those rare ships that have no rails. If the attacker wins, the defender is hoisted over the rail and dropped to the ground below. A desperation grab can be attempted (see bull rush, above), catching hold of the attacker 50% of the time, and the rail the other 50% of the time. If the defender wins this grapple check, he remains in position and is not hoisted over the rail and may attempt to do the same to his attacker on his initiative.

An attacker caught by a desperation grab is in dire straits—he must immediately make a Balance check (DC 10 + 1 per 50 pounds of the defender's weight) to avoid being pulled over the rail himself. If he succeeds at the Balance check, he must then pry the defender's hand off him and let the fool drop to his death. This requires an opposed Strength check. If the grabbed character wins this check, the grabbing character is dropped immediately and is not allowed a further desperation grab. If the grabbing character wins, however, the attacker is still grabbed.

While grabbing another character, a character hanging over the edge of the rail may attempt to pull himself back aboard, as noted under Desperation Grab, above. In this case, the grabbing character ends his move adjacent to the character he was grabbing, but still at the edge of the airship's deck. If he wishes to maintain his hold on the character he was grabbing, he must initiate a grapple during the following round.

Loading a Shipboard Weapon

This is a full-round action and is required of all members of the weapon's crew during the round after which it is fired. Reload times vary from weapon to weapon. Weapons with a fire rate of one or more per round require constant full-round loading actions from all assigned crew members except for the actual gunner.

Readying a Shipboard Weapon

This action is taken by the crew of any heavy weapon that is not currently being loaded if they wish to fire the weapon during the current round. The readied action allows the shipboard weapon to be fired upon the captain's orders.

Run

This action is more difficult on an airship while it is in motion. Running requires a successful Balance skill check (DC 10 + 1 per 10 mph of the boat's speed). If this check fails, you are unable to keep your balance long enough to run and can only move twice your normal movement rate, though you must still take a full-round run action and lost your Dex bonus to AC. Making a double move does not require a Balance check.

Sidestep

If a character is charged or targeted by a creature attempting to overrun him, he may forego his action in order to sidestep his attacker. While this is not often a good move, it can be very beneficial if the targeted character is standing at the edge of the airship's deck.

This is treated exactly as a Feint in Combat (see PHB, Bluff Skill)—if the defender wins, he is allowed a 5' step to either side of the attacker, who must continue with his movement. The attacker is allowed a Reflex save (DC 10 + the amount by which the defender won the Bluff skill check). If this save is failed, the attacker is unable to prevent himself from plummeting over the edge of the railing. No desperation grab is allowed in this case, as the attacker has already lost his ability to stop himself from plummeting over the edge by failing his Reflex save.

Stand Up From Prone

This action requires a Balance skill check if the vessel you are on is moving during the round in which you attempt to stand (DC 10 + 1 per 20 mph of the airship's current speed).

Overland Travel by Air

Airships are useful for making short runs between two cities, but they also find use in extremely long journeys that would be impractical for other modes of transportation. Many wizards' guilds, for example, make excellent money ferrying their peers from one distant area to another so that other wizards can fix the locations in their minds for use with *teleport* spells at a later date.

Merchants, too, have discovered the extreme value to be realized by carrying light cargoes over great distances—while the small load of teak wood you pick up in one location may be worthless where you get it, its value may be much higher a few thousand miles distant. Many daring merchants practice this sort of speculation, often starting their own trade routes as a result of their explorations.

Before you can make your fortune traveling thousands of miles from home, though, you have to be able to navigate and find your way from point to point without getting lost. This chapter presents some of the navigational hazards of such overland travel, everything from dangerous weather, to the threat of air pirates, to the very real possibility of simply becoming lost and running out of fuel. While talented navigators are certainly able to reduce all of these threats, there is no such thing as perfect safety when navigating the wild open spaces of the skies.

Geographical Navigation

Unlike sea sailors, airship crews have the advantage of being able to look down upon the geography of the areas through which they travel, allowing them to make extremely accurate maps. In the simplest form of navigation, the navigator simply compares visible geographical landmarks with the landmarks shown on his maps. Given an accurate group of maps and an observant navigator, it's a relatively straightforward process for the navigator to guide a ship from its home port to its destination.

Navigators who guide their ships by geography need only make one Profession (Airship Navigator) skill check (DC 10) every four hours. This assumes they have maps of the areas they are traveling over and are able to see the landmarks below them. If there is a great deal of haze or low clouds, the DC is increased to 15 and the check must be made every three hours, rather than every four.

The downside to this method, of course, is that the navigator is limited to the maps he has on hand and the paths of those who have already been to all the places he's now going. This reduces the potential profits of a trade route, as someone has clearly already mastered the journey and is likely engaging in profitable trade even as you set out on your expedition.

Another problem with navigating by landmarks is the risk of air pirates. Pirates are smart enough to figure out where the most commonly used routes are, and have little difficulty staking them out. The use of visible landmarks makes it as easy for the pirates to navigate as it is for you, and that leads to a very real threat of frequent pirate attacks. Similarly, aerial creatures know where the good pickings are and begin congregating in areas through which ships pass frequently, leading to a large increase in potentially hostile encounters.

It is possible to use geographical navigation without a map, but only if the navigator possesses cartography skills (Craft (Mapmaking)) and the time necessary to make accurate measurements. This process is simple—the navigator spends most of his time on the deck, taking measurements of landmarks below him and drawing a map of the area the airship has covered.

Making a map in this way allows an airship to trace back its journey at any time, but also slows the airship to a movement speed of no more than 30 miles per hour. This relatively slow pace is necessary to allow the Navigator the time necessary to create his map and take the appropriate measurements for his logs. While the map, even if crudely drawn, is enough to allow the Navigator to guide the ship back along its original course during the same journey, to make a map which is useful for future journeys requires a successful Profession (Airship Navigator) skill check (DC 15) and a successful Craft (Mapmaking) skill check (DC 15) every four hours during the entire journey. If more than one-third of these skill checks fail, the map is useless for future trips, though it still allows the Navigator to guide his airship back to the port from which it departed.

It is crucial to realize that a navigational map cannot be made unless there are recognizable landmarks within four hours travel from one another, and in a relatively straight line. If a landmark cannot be found in four hours, a navigator is unable to accurately continue the map and must direct the ship to turn back. Recognizable landmarks include such features as coastlines, rivers, mountains, or any other feature that is visible throughout the year at a height of 500 feet or less. Because of this limitation, the most common routes follow rivers, the edges of continents, and mountain ranges, allowing navigators to easily chart the courses of their airships.

See **Chapter 7: Aerial Trade**, for more information about the value of these types of maps and for topics of interest in general aerial trade.

Table 5.1—Horizon Distance Based on Airship Height (Earth-sized world)

Airship Altitude (ft.)	Distance to Horizon (miles)	Visible Area (sq. miles)
50	9	254
100	12	452
150	15	707
200	17	908
250	19	1,134
300	21	1,385
350	23	1,662
400	25	1,963
450	26	2,124
500	27	2,290
550	29	2,642
600	30	2,827
650	31	3,019
700	32	3,217
750	34	3,632
800	35	3,848
850	36	4,072
900	37	4,301
950	38	4,536
1000	39	4,778

Note: Since the world of the Forge is much smaller than the Earth, ships from the ***Oathbound*** setting can see only roughly half as far as normal. Also, the visible area on the Forge is one-quarter of the area shown on this chart.

Dead Reckoning—The Art of Overland Navigation

Airship sailors have learned a lot from the sailors of the seas and use some of the same techniques for navigation. Dead reckoning is the default method of navigation for airships, involving some basic math, a rope (with attached drag chute), a time piece, a lodestone, and a detailed ship's log. The practice is not difficult, but without accurate bookkeeping and the proper knowledge, it can be very difficult to navigate long distances overland.

Ocean sailors use ropes, floats, and time pieces to determine the speed of their ships. The rope has knots along its length (usually separated by between four and six feet of rope) and is tied both to the boat and the float (usually a simple wooden log). The float is tossed off the side of the boat and, at the same time, the time piece (normally a small sand-measured minute glass) is started. When a minute has passed, the sailors count the number of knots the log has pulled from the spool of rope, from which they derive their actual speed (hence the term 'knots' for the speed of an ocean-going vessel).

The crew of an airship uses a similar process to determine the speed of their vessel—a parachute is attached to the end of the rope, rather than a log, and the air resistance pulls the rope off the spool. The faster the ship is traveling, the more rope is pulled off the spool, and the more knots the sailors count off to determine the speed of the airship. The crew takes regular readings of the airship's speed, the results of which are reported to the navigator to keep him informed of the vessel's progress.

Armed with information about the speed of his vessel, the navigator of an airship can then determine how far the airship moves in a given period of time. Combined with heading information (taken from a compass), this data allows the navigator to create a detailed log of his ship's journey. While this seems like a very reliable method of navigation, there are some problems with dead reckoning that every navigator must consider.

Table 5.2—Random Wind Direction

Die Roll	Wind Direction (Origin)
1	North
2	Northeast
3	East
4	Southeast
5	South
6	Southwest
7	West
8	Northwest

Table 5.3—Random Wind Speed

Die Roll	Wind Speed
01-20	Light (0-10 mph)
21-60	Moderate (11-20 mph)
61-80	Strong (21-30)
81-90	Severe (31-50 mph)
91 - 97	Windstorm (51-74 mph)
98 - 99	Hurricane (75-174 mph)
100	Tornado (175 mph+)

Most notably, wind speed can greatly alter the apparent speed of the airship (see further on in this chapter for more information on weather), especially if the airship is running before the wind or running directly into the wind. This is because the parachute used for dead reckoning measures the ship's speed in relation to the air, not to the ground.

Dead reckoning requires a great deal more skill than geographical navigation, even under ideal conditions. Assuming the navigator has the proper tools for the job, dead reckoning requires hourly Profession (Airship Navigator) skill checks (DC 15) to accurately track the course of the ship. As long as no two of these skill checks are failed consecutively, the ship remains somewhat on course, though it does travel a bit out of its way. For each failed roll, the navigator steers the ship 2d10% off course (see Lost, below, for more information about getting off course).

Celestial Navigation

Aside from magic, celestial navigation is the most accurate form of navigation available to airship crews. By comparing the position of stars or other celestial bodies to the horizon, a skilled navigator is able to determine his rough position on the map. This method requires a great deal of skill, however, and is only used by those airships that make extremely long journeys across areas where there are no stable landmarks. In this situation, celestial navigation is far safer than dead reckoning, because the sun and stars don't change position and a mistake during one day doesn't automatically affect all future navigation.

During the day, celestial navigation relies on the use of the backstaff, a navigational aid consisting of a pair of jointed triangles. The larger of these triangles measured 60 degrees, while the smaller measured 30 degrees. By aligning the shadows cast by these triangles, the navigator is able to determine his relative latitude, using the sun as a reference point. Unlike sailors, who simply align the shadows with the horizon, aerial navigators must also account for differences in altitude, making the task a bit more challenging.

One difficulty with celestial navigation is the inability to accurately determine longitude along with latitude. This makes it much simpler to chart a course along a north-south axis than it is to chart one along an east-west axis, which still requires dead reckoning and careful use of maps (as detailed above).

In game terms, celestial navigation can be used to keep a ship on course with much greater accuracy, as long as the airship is traveling along a north-south axis. This requires only two Profession (Airship Navigator) skill checks (DC 20) each day, only one of which must succeed to keep the airship on course. If one of the Profession (Airship Navigator) skill checks fails, the airship drifts 1d10% off course, as detailed in the Lost section, below.

Note: Navigators in the ***Oathbound*** campaign setting are able to use celestial navigation to determine longitude by reading the position of the rust moon. This works just as described above, except that the DC is more difficult (25). Separate checks must be made for longitude and latitude.

Combined Navigation

It is very possible for a single airship journey to use all three of the above navigation methods at different times during a trip. For example, an airship might start out at a known port, head west along a mountain range for a day, then head north using celestial navigation. The navigator then checks his charts and directs the airship on another westerly course,

tracking the progress with dead reckoning until the airship arrives at its destination.

In these cases, it is simplest to handle navigation in full day intervals where possible, using one type of navigation each day. If there are several changes in navigational style, however, it may necessary to combine them all in a single day. To handle this, simply prorate the number of checks required by each navigational style. If the ship travels eight hours using geographical navigation, then the navigator must make two Navigation checks as determined by that style of navigation, for example. Always round up when determining the number of navigation checks needed—if, in the above example, the ship had traveled only six hours by geographical navigation, it would still require two navigation checks, one for every four hours, or fraction thereof, during which geographical navigation was used.

Note that a navigator still requires all of the proper equipment for each type of navigation—no backstaff means no celestial navigation, for example.

The Distance to the Horizon

One crucial application of flying technology is the creation of very detailed, very accurate maps. Some airship captains make a very good living doing nothing but ferrying cartographers from place to place, hovering while they make their maps. Using some fairly simple tools, cartographers are able to estimate the sizes of geographical features with a great deal of accuracy, resulting in maps the likes of which most medieval societies could only dream.

The impact of this type of precise mapping on the world cannot be underestimated—sailors, merchants, and travelers of all types benefit immensely from accurate maps. Given the speed of an airship, it is possible an entire continent could be mapped in a few years' time, even less if more than one ship was involved in the project.

Table 5.1 provides information about the types of visibility available at different heights—as you can see, an airship is able to spy out a great deal of the local terrain even at a height of just 500 feet. Assuming an earth-sized planet, the horizon is roughly 27 miles from the airship in every direction, or an area of approximately 2,290 square miles. In contrast, the horizon for a person standing at sea level is only about 3 miles, giving them a view of a slice of their world roughly 28 square miles in area. As you can see, the benefits of aerial flight are enormous and allow for a much clearer picture of the world.

The larger a planet is, the greater the distance to the horizon, as illustrated in Table 5.1. If a world is flat, the distance to the horizon increases dramatically, because there is no curvature at which point the line of sight meets the horizon. Given a telescope of significant magnification and no intervening obstacles (such as mountains), an explorer 500 feet off the ground should be able to see to the very edges of the earth, though the level of detail would be quite coarse and not make for the best maps. It is suggested that mapping activities be limited to the distances shown on Table 5.1, with flat worlds treated as if the airship were at an altitude of 1,000 feet, regardless of actual height. Note that obstacles taller than the airship block line of sight, and certain weather conditions (haze and storms, for example) greatly limit what the navigator of an airship is able to see.

Mapping From Altitude

Mapping is normally a time-intensive process, if only because the cartographer is unable to get a clear picture of the terrain he is mapping. When the cartographer is a few hundred feet off the ground, this problem is eliminated, allowing maps to be drawn much more quickly.

A cartographer on an airship can map out 200 sq. miles in an hour, provided he can see the entire area. This requires a successful Craft (Mapmaking) skill check (DC 15) and the proper materials. A cartographer needs a writing implement, paper or other suitable materials to draw on, and a scale (see below) in order to draw the area successfully. A failure does not indicate a botched map, but it does decrease the navigational bonus provided by the map.

All maps provide a base +5 competence bonus to all Profession (Airship Navigator) skill checks made by an airship navigator while using them. This assumes a map that details all the geographic features of the area and provides some small bits of information about local weather patterns. A map's bonus can be eroded by the failures of the cartographer who makes it, as determined by the following method.

First, determine the total area covered by the map, in square miles. Divide this by 200 to determine the number of Craft (Mapmaking) skill checks needed to create the map. If less than 10% of the required skill checks were failures, the map provides its full bonus. While it may have a few errors here and there, the map as a whole provides a decent overview of the area it is meant to portray, and is a boon to navigators.

For every full 10% of the required skill checks that were failed, however, deduct 1 from the map's bonus. A mapmaker who fails 20% of his skill checks, for example, has created a map that provides only a +3 (5 - 2) competence bonus to Profession (Airship Navigator) skill checks. It is possible, if a cartographer is particularly sloppy or incompetent (if 60% or more of the Craft (Mapmaking) skill checks were failed), for a map to provide a penalty instead of a bonus.

A navigator who uses a bad map is allowed a Profession (Airship Navigator) skill check (DC 15 - the penalty of the map) to determine that the map is worthless for navigation. This check is allowed the second time the navigator makes a Profession (Airship Navigator) skill check while using the map—if the check succeeds, the navigator is aware of the problem and may stop using the map. If the check fails, however, the navigator continues to trust the map, but is allowed additional checks to detect the problems with it after each further Profession (Airship Navigator) skill check made using the map.

Lost

Whenever an airship becomes lost as a result of a failed Profession (Airship Navigator) skill check, roll 1d10 or 2d10 as noted above under the type of navigation currently in use. This number, as a percentage, is the degree of error introduced during this leg of the journey. Simply add this percent of the total distance traveled during the time in which the check was failed to the total distance of the journey as a whole.

For example, an airship traveling at 100 miles per hour is using celestial navigation and requires two checks each day to stay on course. If one of these checks fails, the airship drifts 1d10% off course during the first twelve-hour leg of the day's journey. The navigator rolls a 5 on his die, so he must add 5% of the 1,200-mile leg (or 60 miles) to the total distance required to complete the journey.

If a navigator ever fails two Profession (Airship Navigator) skill checks in a row, however, the airship becomes lost. The GM should secretly roll 1d6 to determine the direction the airship veered off its course—on a 1 to 3, it has traveled

45-degrees off to port during the leg immediately following the second failed Profession (Airship Navigator) skill check, while on a 4 to 6, it has traveled 45-degrees off to starboard.

When the navigator next makes a skill check for navigation, he suffers a -1 circumstance penalty to the Profession (Airship Navigator) skill check for every 200 miles the airship has traveled off course. If the skill check fails, the navigator is still lost and the GM rolls 1d6. On a 1 or 2, the airship turns another 45-degrees off to port for the next leg's travel, on a 3 or 4, the airship continues straight ahead, and on a 5 or 6 the airship drifts to starboard during the next leg.

The penalties for each of the Profession (Airship Navigator) skill checks made are cumulative—if you travel 600 miles during the first leg during which you are lost and 400 miles during the second leg during which you are lost, the penalty for the next Profession (Airship Navigator) skill check is -10.

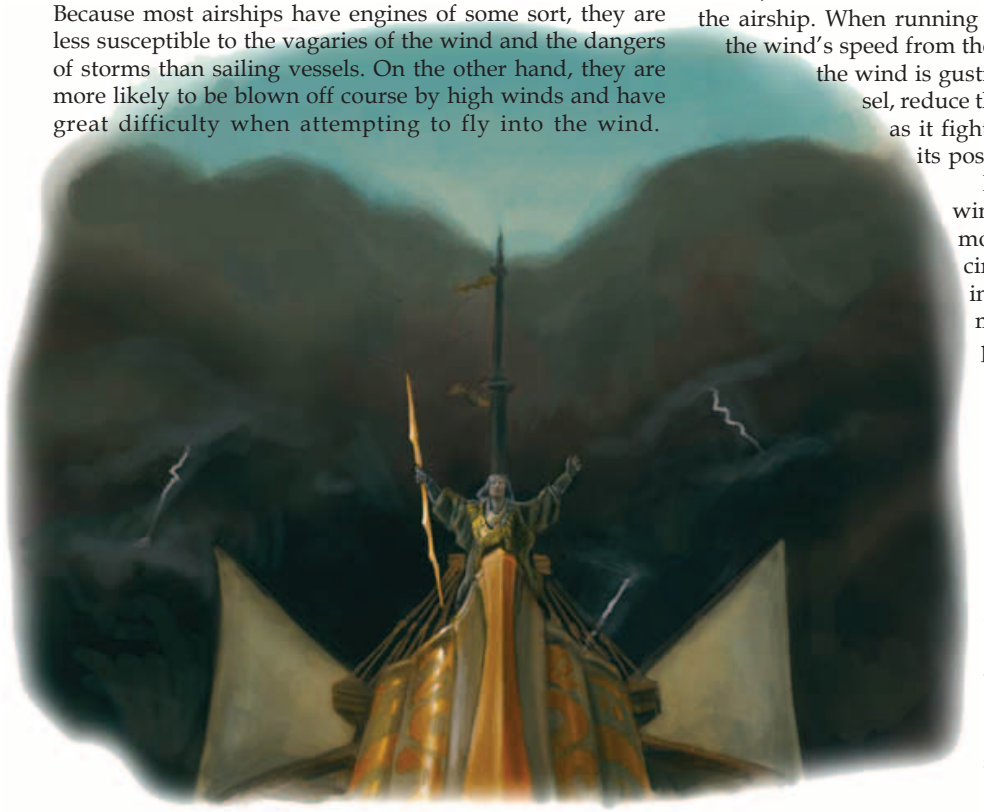
When the navigator succeeds at a skill check, he discovers the ship's position and may begin directing it back toward its proper destination. Those who travel by dead reckoning suffer a -10 circumstance penalty to all Profession (Airship Navigator) skill checks made while attempting to get back to their course, while those who use celestial navigation have a -5 circumstance penalty to all such skill checks.

Getting back on course simply requires moving the airship back to the course plotted by the navigator at the beginning of the journey. The airship may then resume normal navigation.

Of course distinct or famous landmarks (Mt. Rushmore, for example) may be able to show a navigator where he is without requiring a skill check. It is up to the GM to decide what is and isn't distinct. You may wish to allow players a Knowledge (Geography) check or something similar to spot certain features. Also, if there are settlements within sight, an airship can always land and ask for directions, assuming the natives are friendly.

Hazards and Benefits of Weather

Because most airships have engines of some sort, they are less susceptible to the vagaries of the wind and the dangers of storms than sailing vessels. On the other hand, they are more likely to be blown off course by high winds and have great difficulty when attempting to fly into the wind.



Without any surface to support them at all, the airships simply get pushed about and have a more difficult time maintaining their position in severe weather.

The following sections contain information about various types of meteorological phenomena and how they can affect the flight of an airship. From rain to thermals, you will find enough information in the following pages to handle the majority of aerial weather situations.

High Winds

Wind is a real problem for aerial vessels, especially for smaller vessels without the mass and engine power to resist aerial tides. When flying into the wind, airships are slowed (and sometimes even stalled), preventing them from making much progress while still burning fuel. Winds that hit the airship from behind, on the other hand, can thrust the vessel forward at such a high rate of speed that the airship becomes virtually uncontrollable as it surges ahead. Even worse, a blast of wind from the side can actually heel an airship over, turning the vessel onto its side or even rolling it, dumping unsecured crew and cargo over the gunwales and onto the hard, hard ground below.

To determine the effects of wind on an airship, it is important to know just how strong the wind is and the direction it's blowing in relationship to the airship. Tables 5.2 and 5.3 allow random determination of wind speed and direction, but it is recommended that GMs determine the weather for a given day as best fits their campaigns. Note that winds are generally stronger in the air then on the ground.

Light: The winds at this speed are virtually nonexistent. Though occasional breezes waft across the airship, they have no ability to affect the flight path or speed of the vessel. Airship sailors would always fly in becalmed weather if given the choice, but they are rarely able to hold out for such ideal conditions.

Moderate: These winds are strong enough to noticeably increase or decrease the speed of the ship and make navigation more difficult. When the airship is running before the winds, add one-half the wind's speed to the current speed of the airship. When running into the wind, deduct one-half the wind's speed from the current speed of the airship. If the wind is gusting in from the sides of the vessel, reduce the vessel's speed by one-quarter as it fights against the wind to maintain its position.

More importantly, turning into winds at this speed is considerably more difficult—pilots suffer a -2 circumstance penalty when turning into the wind and every turn made counts as two turns for purposes of maneuverability. When turning away from the wind, these penalties are not applied and the airship need only use one of its turns when turning away from the wind.

Strong: When the wind is up to these speeds, airships stand a very real risk of being blown off course, as their speed fluctuates with the speed of the wind. Any airship running before these winds adds one-half the wind's speed to its current speed, but the pilot suffers a -2 circumstance penalty when attempting

any maneuver other than straight flight. When running into the wind, the pilot suffers the same penalty and the speed of the vessel is reduced by one-half the current wind speed.

Turning into the wind at this speed is very difficult. Pilots suffer a -4 circumstance penalty when attempting to turn into the wind and every turn made counts as two turns for purposes of maneuverability. When turning away from the wind, the pilot also suffers a -2 circumstance penalty and must make a successful Profession (Airship Pilot) skill check (DC 10) to avoid heeling the boat over as the wind gusts into its side.

Any pilot aboard a ship which is rammed from the same direction as the wind is currently blowing also suffers a -4 circumstance penalty to all Profession (Airship Pilot) rolls to keep his airship from heeling over.

The pilot of any airship that does heel over in strong winds suffers a -2 circumstance penalty to all Profession (Airship Pilot) skill checks made to right the airship.

While geographical navigation and celestial navigation are unaffected by these winds, dead reckoning suffers greatly as the speed of the airship is so drastically altered by the force of the winds. When an airship's navigator makes any dead reckoning Profession (Airship Navigator) skill checks, he suffers a -2 circumstance penalty.

In addition, whenever a ship is in strong winds, the pilot must make a successful Profession (Airship Pilot) skill check (DC 15) every 10 minutes or the airship loses 50 feet of altitude. Gaining altitude in these winds is very difficult and requires a successful Profession (Airship Pilot) skill check (DC 15 + 5 for every altitude band of attempted rise during a single 5 minute time period).

Severe: Flying in winds of this power is extremely dangerous, and very few airship captains risk the skies during weather of this magnitude. Those who do find the ship's speed reduced by one-half of the wind's speed when running into the wind, and increased by one-half the wind's speed when running before the wind. All Profession (Airship Pilot) skill checks suffer a -4 circumstance penalty when running before the wind and a -6 circumstance penalty when running into the wind. If the wind is gusting in from either side of the airship, all Profession (Airship Pilot) skill checks suffer a -8 circumstance penalty as the pilot struggles to keep the ship from heeling over.

While navigating in wind this strong, the pilot must make a Profession (Airship Pilot) skill check (DC 15) every minute to keep the ship from getting turned sideways into the wind. If the ship is already sideways to the wind, the ship begins to heel over immediately, just as if it had been rammed. If the ship is not yet sideways, it turns sideways during the next round—the pilot must then make a successful Profession (Airship Pilot) skill check (DC 15) to keep the ship from heeling over. Pilots of airships unfortunate enough to heel over in severe winds suffer a -8 circumstance penalty to any Profession (Airship Pilot) skill checks made to right the vessel.

Turning into winds of this strength is the equivalent of making three turns for the purposes of maneuverability and the pilot suffers a -10 circumstance penalty on any required Profession (Airship Pilot) skill checks while turning into the wind. Turning away from the wind is nearly as dangerous and requires the equivalent of two turns for maneuverability purposes. The pilot must make a successful Profession (Airship Pilot) skill check (DC 15) with a -8 circumstance penalty to avoid heeling the ship over in the process.

Any pilot aboard a ship that is rammed from the same direction as the wind is currently blowing also suffers a -8 circumstance penalty to all Profession (Airship Pilot) rolls to keep his airship from heeling over.

Navigators hate attempting to keep the airship on course during this weather—navigation rolls are required every half-hour, regardless of the type of navigation being used, and all dead reckoning Profession (Airship Navigator) skill checks suffer a -8 circumstance penalty. If a Navigation roll fails, the airship drifts double the normal distance off course as it is pushed ahead of the rogue winds.

In addition, the pilot must make a successful Profession (Airship Pilot) skill check (DC 20) every 10 minutes when the vessel is in severe winds or the airship loses 50 feet of altitude. Gaining altitude in these winds is very difficult and requires a successful Profession (Airship Pilot) skill check (DC 15 + 5 for every altitude band of attempted rise during a single 5 minute time period).

Windstorm: Windstorms are extremely dangerous for airships, and should not be attempted except in the most dire of circumstances. Those mad enough to brave one find their ship's speed reduced by one-half of the wind's speed when running into the wind, and increased by one-half the wind's speed when running before the wind. All Profession (Airship Pilot) skill checks suffer a -6 circumstance penalty when running before the wind and a -8 circumstance penalty when running into the wind. If the wind is gusting in from either side of the airship, all Profession (Airship Pilot) skill checks suffer a -10 circumstance penalty as the pilot struggles to keep the ship from heeling over.

While navigating in a windstorm, the pilot must make a Profession (Airship Pilot) skill check (DC 20) every minute to keep the ship from getting turned sideways into the wind. If the ship is already sideways to the wind, the ship begins to heel over immediately, just as if it had been rammed. If the ship is not yet sideways, it turns sideways during the next round—the pilot must then make a successful Profession (Airship Pilot) skill check (DC 20) to keep the ship from heeling over. Pilots of airships unfortunate enough to heel over in a windstorm suffer a -10 circumstance penalty to any Profession (Airship Pilot) skill checks made to right the vessel.

Turning into winds of this strength is the equivalent of making four turns for the purposes of maneuverability and the pilot suffers a -12 circumstance penalty on any required Profession (Airship Pilot) skill checks while turning into the wind. Turning away from the wind is nearly as dangerous and requires the equivalent of three turns for maneuverability purposes. The pilot must make a successful Profession (Airship Pilot) skill check (DC 20) with a -10 circumstance penalty to avoid heeling the ship over in the process.

Any pilot aboard a ship that is rammed from the same direction as the wind is currently blowing also suffers a -10 circumstance penalty to all Profession (Airship Pilot) rolls to keep his airship from heeling over.

Navigation is nearly impossible in a windstorm—navigation rolls are required every ten minutes, regardless of the type of navigation being used, and all dead reckoning Profession (Airship Navigator) skill checks suffer a -10 circumstance penalty. If a Navigation roll fails, the airship drifts triple the normal distance off course as it is pushed ahead of the rogue winds.

In addition, the pilot must make a successful Profession (Airship Pilot) skill check (DC 20) every 5 minutes when the vessel is in a storm or the airship loses 50 feet of altitude. Gaining altitude in a windstorm is very difficult, and requires a successful Profession (Airship Pilot) skill check (DC 17 + 5 for every altitude band of attempted rise during a single 5 minute time period).

Hurricane: Any airship caught in this kind of weather is in for a rough ride, and probably a severe crash. At this speed, the wind hurls objects with such force that any character on

the deck of the ship suffers 1d6 hit points of damage each round as bits of debris strike them. The winds are so severe that no airship can possibly run into them—any attempts to do so results in the airship immediately heeling over (randomly determine to which side the airship heels). Running before the wind is horribly difficult as well, and there is a good chance that attempts to do so end in tragedy.

Any pilot who attempts to run his ship before winds of this strength must make a successful Profession (Airship Pilot) skill check (DC 25) every minute. If the skill check succeeds, the airship's speed is increased by one-half the speed of the winds behind it. If a check fails, however, the airship immediately heels over (determine to which side randomly, as above).

While navigating in wind this strong, the pilot must make a Profession (Airship Pilot) skill check (DC 25) every minute to keep the ship from getting turned sideways into the wind. If the ship is already sideways to the wind, the ship begins to heel over immediately, just as if it had been rammed. If the ship is not yet sideways, it turns sideways during the next round—the pilot must make a successful Profession (Airship Pilot) skill check (DC 25) to keep the ship from heeling over. Pilots of airships unfortunate enough to heel over in hurricane winds suffer a -10 circumstance penalty to any Profession (Airship Pilot) skill checks made to right the vessel.

Turning into winds of this strength is impossible—the wind is so strong it simply cannot be done. Any attempt to do so is treated as if the ship were attempting to run into the wind and the airship immediately heels over in the same direction as it was turning. Turning away from the wind is nearly as dangerous and requires the equivalent of three turns for maneuverability purposes. The pilot must make a successful Profession (Airship Pilot) skill check (DC 20) with a -8 circumstance penalty to avoid heeling the ship over in the process.

In addition, the pilot must make a successful Profession (Airship Pilot) skill check (DC 25) every 5 minutes the vessel is in these winds or the airship loses 1d4 X 50 feet of altitude. Gaining altitude in these winds is very difficult and requires a successful Profession (Airship Pilot) skill check (DC 20 + 5 for every altitude band of attempted rise during a single 5 minute time period).

Tornado: If caught in winds this severe, the airship is on its way to the ground. The airship immediately suffers 1d6 hull points of damage per 20 mph of wind speed and is considered out of control (see Chapter 4: Aerial Combat for more information on out of control airships).

Dirigibles and Wind

A dirigible not only reduces the maneuverability of the airship (see Chapter 1: Airship Construction) but also makes it more susceptible to the affects of the wind. Unless a dirigible-equipped airship uses its own maneuverability to offset the power of the wind, it is pushed in whatever direction the wind is blowing. For every 20 mph of wind, an airship with a rigid dirigible is pushed 10 mph in the direction of the wind. Fighting the wind reduces the airship's maneuverability by 1 per 20 mph of the wind's speed negated.

Semi-rigid airships have a much harder time fighting the wind than their rigid counterparts. It requires of them a maneuverability reduction of 2 to fight off 20 mph of the wind's speed.

Anti-grav dirigibles are compact, and are affected normally by the wind.

Thermals

In hotter climes, columns of rising air can be a great boon to airship pilots who wish to gain altitude without the need to burn fuel. For airships equipped with glider wings, these thermals, as they are known, are even more important, and can allow a small airship to glide a great distance without the need to use any fuel at all. During combat, airships outfitted to utilize the thermals can quickly gain advantage over ships that are not, simply by riding the thermal above their enemies and attacking from their new vantage point.

Thermals form when the sun, or another source, heats the ground and this heat is then transferred to the layer of air just above the ground. The warm air then rises above the surrounding cooler air until its temperature drops to equal that of the 'boundary layer' of air surrounding the thermal. Thermals form most frequently over areas that absorb sunlight, such as plowed fields, rocky areas, and hillsides facing the sun. Because dark surfaces absorb sunlight, and hence heat, thermals are more often found above dark geographical features than lighter surfaces which reflect the sunlight and do not warm as rapidly.

Thermals may form when the wind is blowing, but are useless unless the wind is light. The action of the wind dissipates the heat too rapidly, preventing it from reaching the point at which the air rises on convection currents to create a thermal that can be used by airships. The one exception to this is over ridgelines and mountainous areas where the wind can 'push' warmer air up along the face of the ridge or mountains to create a line of thermals that can stretch for dozens of miles along the edge of the geographical feature. While these thermals are very useful to ships equipped with gliders, they can also be very dangerous—see turbulence, below, for more information.

A thermal can range in size from a few hundred feet in diameter to a few thousand feet in diameter, though the largest are only achieved at very high altitudes, far above where most airships can ever travel. Because thermals increase in size and strength as they increase in altitude, use the following rule of thumb:

A thermal is cone shaped—its diameter at any point is the same as its height at that point. Thus, at 300 hundred feet off the ground, the thermal is also 300 feet in diameter—at 150 feet, it is 150 feet wide, and at 500 feet it is 500 feet wide. While simplistic, this rule of thumb makes it very easy to determine the size of a thermal at any altitude band.

Using Thermals

Any airship can make use of thermals, though those equipped with glider wings are able to get much more benefit out of the rising air than can others. See **Chapter 1: Ship Construction**, for more information about glider wings and their uses.

When an airship enters a thermal, it must first pass through an area of turbulence. This turbulence grows stronger the larger the thermal is and is therefore much more dangerous at higher elevations than near the ground. To enter a thermal without losing control of his vessel, a pilot must make a successful Profession (Airship Pilot) skill check (DC 15 + 1 per elevation band at which the pilot is entering the thermal). If this skill check fails, the airship is considered out of control; if the check succeeds, however, the airship is able to enter the thermal without incident and immediately begins rising on the winds.

The thermal has differing lift capacities at different heights, growing stronger as the thermal rises toward the cloud layer. The lift capacity of the thermal is equal to the altitude band at which the airship enters its area of effect.

An airship that enters the thermal 300 feet off the ground is affected by a lift capacity of 6, while one that enters at 500 feet is affected by a lift capacity of 10. Once a thermal gets to 1,000 feet (lift capacity 20) it reaches its maximum intensity, regardless of how high it may extend.

An airship in a thermal rises in altitude each round a number of bands equal to the difference between the thermal's current lift capacity and the size category of the airship (with a minimum rise of 1). This sudden increase in altitude can work to the airship's advantage, but requires a steady hand on the wheel to keep the ship under control. Each round the airship remains in the thermal, its pilot must make a successful Profession (Airship Pilot) skill check (DC 10 + the number of bands the ship was lifted during the previous round). Note that the lift factor of a thermal increases as one moves upward, so the ship's ascent accelerates, and the DC to remain in the thermal increases each round. If the skill check succeeds, the pilot keeps the airship in position.

If the check fails, however, the pilot must immediately begin moving the vessel out of the thermal, toward its edge. Leaving the thermal requires another successful Profession (Airship Pilot) skill check (DC 10 + the current lift factors of the thermal), to weather the turbulence. This skill check is necessary regardless of whether the airship is forced to leave the thermal or leaves of its own accord.

When the pilot of an airship that leaves the thermal fails his skill check, the ship still leaves the thermal but is caught in the turbulence sink surrounding the thermal. This forces the airship down a number of altitude bands equal to one-half the lifting capacity of the thermal at the altitude that the airship moves out of it.

Remaining within a thermal can quickly move an airship upward, but it takes a bit of skill to keep from moving out of the thermal. The pilot must continually keep at least one-half of his airship within the thermal or it is assumed to have moved out of the thermal (see above). The easiest way to keep the airship within the thermal is to simply fly in circles, allowing the thermal to carry the airship higher and higher. The pilot must still make a Profession (Airship Pilot) skill check each round (as above) to keep the airship in control, but this method allows for a very fast rise inside the thermal.

Spotting a thermal is generally easy—savvy pilots learn to look for birds soaring on the thermal winds with their wings cupped as the birds circle through the warmer air. Pilots should also keep an eye out for the danger of 'cloud suck' a phenomenon that results from rising too far into the thermal.

The air inside a thermal cools as it rises and eventually reaches equilibrium with the temperature of the air surrounding the thermal column. When this happens, a cumulus cloud sometimes appears when the risen air and its attendant moisture condenses after it cools. Pilots who ride thermals must keep an eye on this cloud layer, because entering it always leads to a wild, sometimes fatal, ride.

The GM should determine the point at which the cloud layer occurs—this is normally somewhere between 5,000 and 30,000 feet in altitude. If an airship enters this cloud, it is immediately buffeted by turbulence much more severe than is found in the air surrounding the thermal. Riding this turbulence out requires a Profession (Airship Pilot) skill check (DC 25). If this check succeeds, the pilot maintains control over his vessel for one round and is free to pilot the ship as normal. If the check fails, however, the airship is considered to be out of control.

Gaining maximum advantage from a thermal requires carefully staying on the edge of the thermal. Most pilots prefer to circle inside the thermal, carefully spiraling around inside the column of rising air while gaining altitude.

Ridge Lift

Similar in nature to a thermal, a ridge lift occurs when air sweeps in perpendicular to a ridge-line or mountain range. As the wind flows up toward the peak of the mountain or the top of the ridge, it provides a substantial amount of lift that savvy pilots can use to their advantage. While the ridge lifts are rarely as powerful as thermals, they are generally much larger and can go on for miles on end, providing a gentle lift to airships able to glide along the currents.

The pilot of an airship entering a ridge lift does not need to make any Profession (Airship Pilot) skill checks, provided he is entering the lift with the wind. Each minute the airship remains in the lift (during which time at least one-half of the airship must be within the ridge lift), it rises one altitude band, regardless of whether or not the pilot attempts to increase altitude. The pilot must make a Profession (Airship Pilot) skill check (DC 15) every minute to avoid crashing into the ridge or mountain creating the lift, but no other Profession (Airship Pilot) checks are needed.

An airship which brushes against the side of a mountain or ridge immediately suffers a reduction in speed of 1d4x10 mph and suffers 1d6 hull points of damage per 10 mph of reduced speed. If the airship's speed drops below zero, it is considered out of control.

While flying within a ridge lift alongside a mountain range, an airship burns only one-half the normal amount of fuel, and one-quarter the normal amount of fuel if the glider template is applied.

Wave Lift

Forming on the leeward side of mountains (the side opposite from which the wind is originating), wave lifts result from air that falls back to ground level and then 'bounces' back up again. This rising and falling of air can iterate through several cycles, creating a lengthy pattern that a clever pilot can use to glide for a long distance.

Wave lifts, unlike ridge lifts and thermals, are very smooth and can allow an airship to glide for miles while steadily gaining altitude. Wave lifts run perpendicular to the ridge, moving away from it. The flatter the land beyond the mountain, the longer the wave lift pattern persists, often for a dozen or more miles. Riding a wave lift can allow a pilot to increase the speed of the airship, but requires some skill.

When entering the wave lift, the pilot must make a Profession (Airship Pilot) skill check (DC 15). If this check succeeds, the pilot is able to ride the wave lift for up to an hour, provided he does not turn more than 45 degrees from the direction the wave lift is running and does not increase or decrease the airship's altitude. Over the course of the wave lift, the airship's altitude fluctuates, bobbing a few hundred feet above and below the height of the mountains from which the wave lift is generated.

The speed of a wave is equal to 1d3x10 miles per hour. If a ship is riding the wave, add the wind speed to the airship's current speed. Pilots who are successfully riding a wave lift do not suffer the effects of high winds while their airship is within the lift—the gentle pressure of the lift pushes the ship ahead of it easily and without turbulence.

Airships that enter a wave lift unsuccessfully, however, are affected by the high winds as normal.

Turbulence

Air patterns are unpredictable things. The currents in the upper atmosphere collide and roil like the bubbles in a

cauldron of boiling water. From time to time, these bubbles coalesce into a phenomenon known as turbulence.

Most turbulence cells are quite minor and do nothing more than shake up a crew and keep the pilot from dozing off at the wheel. Unpredictably, though, turbulence can reach dangerous levels that threaten to throw a ship onto its side or slam it down to earth—a phenomenon known as wind shear.

Generally speaking, it is impossible for a pilot to predict the location or severity of turbulence. If the GM chooses to have a ship encounter more than normal turbulence, the pilot must react quickly to keep his airship from losing altitude quickly and sometimes fatally.

Turbulence comes in three general categories: minor, noticeable, and dangerous.

Minor turbulence requires no action on the part of the airship pilot—it's unpleasant to fly through because it causes the airship to buck and dip unpredictably, but it is no real cause for concern. If an airship is involved in combat, however, minor turbulence imposes a -1 circumstance penalty to all attack and damage rolls made by ranged weapons and to all Profession (Airship Pilot) skill checks.

Noticeable turbulence is a problem. There is a 10% chance each round of a sudden gain or drop in altitude that is large enough to cause some concern. When this happens, airship crewmen must make a Balance check (DC 12) to retain their feet. If an airship is in combat during a bout of noticeable turbulence, all attack and damage rolls made with ranged weapons suffer a -2 circumstance penalty, as do all Profession (Airship Pilot) skill checks.

Dangerous turbulence has the potential to wreck an airship. While flying in this type of weather, the pilot must make a Profession (Airship Pilot) skill check (DC 20) every minute. If this skill check fails, the airship is affected by wind shear and immediately loses 1d3 altitude bands. This sudden drop in height forces all aboard to make a Balance check (DC 15) to retain their feet—if the pilot loses his feet, the airship is immediately considered to be out of control.

Storms

The weather is the airman's friend and foe. When it is clear, with a strong breeze at his back, it moves him toward his port more quickly and provides him with beautiful vistas of the lands below. But when the storms roll in and rain begins to fall in thick, blinding sheets, weather threatens the crew of the airship at every turn. Rainstorms, coupled with the winds that often accompany them, can bring a real threat to even the mightiest of airships.

Storms, like winds, come in several categories, from the relatively mild up to the devastatingly powerful. While Table 5.4 provides information for randomly determining the strength of a given storm, this detail is generally left to the decision of the GM. A storm should be a real event for the airmen, a threat they can't defeat with swords, but must navigate with skill and experience.

Fortunately for airships, most storms are easy to see, as the billowing thunderheads begin forming well in advance of the actual storm. Unfortunately, most storm cells are quite large and can be dozens of miles in diameter, so navigating around a storm could send an airship far off course. Therefore, while it is nearly always possible to avoid a brewing storm, there are many times when doing so is simply unfeasible. An airship flying by geographical navigation, for example, probably does not want to divert 30 miles to go around a storm; in these cases, the captain must sometimes make the unpopular decision to push ahead and brave the weather.

Table 5.4 presents all of the relevant information about a storm and its affects on an airship. The meanings of the table headings are explained below.

D100 Roll: If the GM decides to randomly determine the strength of a storm, simply roll 1d100 and compare the results to this column to find the storm's strength. Note that this table is only used if the GM decides upon a storm encounter.

Storm Strength: This is simply the general categorization of the storm and can easily be replaced with any campaign-specific title you would like to use. Dwarves, for instance, often refer to Gentle storms as 'elf washers' while gnomes often call Thunderstorms 'potential energy.'

Profession (Airship Pilot) Mod: As the storm kicks up, it begins to create problems of its own. Rain and the concussion of thunder is enough to rock even very large ships and the circumstance penalty listed in this column must be applied anytime the pilot makes a Profession (Airship Pilot) skill check, no matter the reason. While an airship can normally weather a storm much better than a sailing vessel (which has the very real risk of being swamped), attempting to fly through a severe storm can have horrible consequences.

Navigation Mod: Navigating in a thunderstorm is very difficult. Not only does the rain and flashing lightning make it nearly impossible to take accurate sightings of geographical features, the clouds block out most of the stars and other heavenly bodies used for celestial navigation. The penalty in this column is applied to all geographical navigation or dead reckoning navigation skill checks made while within the storm. This penalty is not applied to celestial navigation, however. Instead, celestial navigation is impossible while within a storm, as the sky simply cannot be seen with any clarity.

Damage: The stresses a storm places upon an airship can cause damage each and every round the airship remains within the storm cell. During each round, an airship must make a Fortitude save (DC 15) or suffer the damage listed in this column. Note that damage inflicted in this way is considered 'subdual damage' for the ship in question and is mainly the result of soaked sails, snapped lines, and other damage that can be repaired while the airship is in the air. The damage only begins healing after the airship leaves the storm cell, however. This damage can be repaired at the rate of 1d4 hull points per hour, as long as there are enough crew members aboard to still keep the ship flying.

Lightning: Lightning poses a rare, but deadly, threat to airships. Though airships are rarely hit by natural light-

Table 5.4—Storm Strength Randomizer

D100 Roll	Storm Strength	Profession* Modifier	Navigation Modifier	Damage	Lightning
01-25	Drizzle	-2	-2	—	5%
26-50	Gentle	-4	-4	—	5%
51-70	Shower	-6	-5	—	10%
71-80	Thunderstorm	-8	-5	1d4	25%
81-90	Downpour	-9	-6	1d6	20%
91-100	Torrential Rain	-10	-6	1d8	20%

* Airship Pilot

Table 5.5—Effects of Haze

d20 Roll	Result
1-5	No change in altitude
6-10	Lose 1 altitude band
11-15	Gain 1 altitude band
16-18	Lose 1d3 altitude bands
19-20	Gain 1d3 altitude bands

ning (bolts thrown from the hands of wizards are another matter entirely), if such a strike does occur, the results are never good. The percentage listed in this column is the hourly chance an airship within the storm cell is hit. If an airship is struck by lightning, it is allowed a Reflex save (DC 15) for half-damage. A lightning strike causes 10d6 hull points of damage to airships, plus an additional 3d6 hit points of damage to each creature on deck when the lightning strikes. The power of natural lightning is not to be underestimated.

Hail: Rain can be a problem for airships, and thunderstorms are nothing for a captain to ignore. Hailstorms, on the other hand, can destroy airships as the icy chunks shatter masts, break through decks, and injure the crew. If the GM decides a storm generates hail (which can happen even in the height of summer if conditions are right), then the damage caused by the storm is double what is shown in Table 5.4. In addition, hail damage is 'real' damage and cannot be repaired in flight as can the damage from standard storms. Hail occurs in roughly 10% of all storms of thunderstorm strength or greater.

Hail is also dangerous to the crew on deck. Every round a crewman is on deck during a hailstorm, he must make a successful Reflex save (DC 15) or suffer one-half the damage the ship takes during the round. This damage is real hit point damage and is fully capable of killing crew members who do not take cover during the storm.

Wind: Wind often accompanies storms and can add to already dangerous situations. The GM should determine the wind accompanying a storm and apply all modifiers. Any penalties or required skill checks necessitated by a storm stack and are applied in addition to any penalties or required skill checks brought on by rough winds.

Haze and Fog

For pilots and navigators, visibility is crucial while flying. A navigator must be able to see the sky and geographical features if he is to instruct the pilot as to the proper course to follow, and a pilot who cannot see a looming mountain is a pilot who cannot avoid a deadly crash at high altitudes. There are two types of visibility problems that plague pilots and navigators: haze, which causes confusion about the orientation of the airship in relation to the ground, and fog, which simply restricts visibility to a fraction of its normal range.

Haze

Flying high above the earth affords a pilot exhilarating sights and breathtaking vistas—but it also creates a number of hazardous optical illusions that can bring his career to a sudden, shrieking, halt. Haze is the deadliest of these illusions and is normally only encountered over large bodies of water, such as great lakes, seas, or oceans. The optical illusion forms when the horizon line becomes indistinguishable and the pilot is no longer able to determine his ship's current relationship to the earth. In short, the pilot cannot tell where the sky ends and the ground (or water) begins, leading to dangerous flight miscalculations.

In general, haze occurs during overcast days over large bodies of water and is a common phenomenon. Airship pilots experience haze roughly every 1d8 hours when flying over large bodies of water, and may encounter this optical illusion when flying over snowy terrain or other areas of monotonous color that do not contrast against the sky.

Recovering from haze requires a successful Profession (Airship Pilot) skill check (DC 20). If this skill check succeeds, the pilot is immediately aware of what is happening and gets his bearings without further mishap.

If the pilot fails his skill check, however, the airship is in serious trouble. For every five minutes during which the pilot suffers from haze the GM should roll on **Table 5.5-Effects of Haze**.

Whenever an airship loses or gains more than a single altitude band, the pilot is allowed another Profession (Airship Pilot) skill check (DC 15) to determine what is happening. If this skill check succeeds, the pilot recovers his bearings and is not affected by the haze for another 1d8 hours. Ships that drop to zero altitude impact with the ground. For obvious reasons, pilots hate flying through haze and charge double their normal rate for any flight during which they must spend an extended (more than 4 hours) period of time flying through areas where haze is possible.

Fog

While not as dangerous as haze, fog still poses a hazard to navigation and piloting. Fog is nothing more than moisture condensing out of the air and does little outside of obscuring the vision of those aboard the airship. Fog banks can be up to several miles in diameter, especially in areas where there is little wind and storms are frequent. The GM is the final arbiter of when and where fog occurs; these rules provide guidelines for the effect of fog, but not its occurrence.

In general, fog forms in areas where moisture-laden air rises and cools, releasing droplets of water into the air and creating banks of fog. This occurs often near lakes or other bodies of water, and also in valleys or other sheltered locales. The less wind there is in an area, the longer banks of fog linger and the thicker they will be. Fog does not normally persist when the wind is blowing at more than 10 mph, and any winds above 20 mph automatically disperse all fog in the area.

Table 5.6-Effects of Fog illustrates the different densities of fog and how they affect navigation and piloting of an airship.

Geographical Features

The shape of the land is as important as the weather in the air. Dust devils of deserts and dry plains create turbulence strong enough to foul rigging and rip through sails. Ridge lifts billow up on the windward side of ridges and mountains, while wind shear pours down on the leeward side, threatening airships with a sudden drop in altitude. Pilots and navigators must keep an eye on the ground, as well as the sky, to avoid potentially fatal weather conditions caused by geography.

Mountains

A long line of mountains can create very powerful up and down-drafts, ranging from the relatively benign ridge lift (discussed above), to the much more hazardous leeward

shears, to stable and easy to ride wave lifts. Whenever moderate or stronger wind blows into a mountain, it always creates a ridge lift along the face of the mountains. This lift allows pilots to cruise along the edges of mountains, often staying aloft for hundreds of miles based on the strength of the lift alone.

Deserts

While deserts certainly heat the air above them, thermals only rarely form over the desert. When they do form, they bring with them the threat of one of the desert's greatest threats—the sandstorm.

In essence, the sandstorm is a thermal that forms in the desert and is strong enough to pick up sand and fling it around. While those who are on the ground often perish in a sandstorm (every minute spent exposed in the sandstorm requires a Fortitude save at DC 20—if the save is failed, the target suffers 1d4 points of Constitution damage), those in the air have a much better chance of survival.

An airship in a sandstorm suffers 1 hull point of damage every round per category of the wind speed. This damage is also inflicted upon the rigging, and any crewman on the deck suffers the same number of hit points of damage. Few sailors wish to repeat their sandstorm experiences, and professional airmen regard airships that are known to travel across deserts as unlucky.

In addition to the damage caused by a sandstorm, the pilot must contend with the winds themselves. The lack of visibility further exacerbates the difficulties of the wind, and all Profession (Airship Pilot) and Profession (Airship Navigator) skill checks made in a sandstorm suffer a -1 circumstance penalty for every 10 mph of the wind's speed. Sandstorms normally have wind speeds between strong and windstorm, though a few reach into the higher categories, and a handful of storms actually come about due to strange circumstances at very low wind speeds.

Oceans and Seas

While seas are often traversed, airships almost never fly over an ocean. The difficulties inherent in keeping enough fuel aboard to keep the engines stoked is one issue, but a more significant difficulty lies in the severe weather that plagues the oceans of the world. Storms spring up without warning and the winds quickly rise to unmanageable levels. Even worse, unless a ship has the aquatic template there are no landing areas, and an airship forced into the ocean is certain to be in a great deal of trouble since they are rarely equipped for true naval operation.

It can be difficult to find airship crews who agree to regularly travel over large bodies of open water. Many airmen are superstitious enough about water that they even prefer to fly around large lakes.

Glaciers

Flying over a glacier isn't much fun for airmen. The cold weather and great possibility of hail and high winds makes glacier flights loathed almost as much as ocean flights. There are no thermals to be found over a glacier, but plenty of turbulence, as any air that heats up is constantly churned and cooled by the low surface temperatures.

Swamps

Flying over a swamp is not something that gives most airmen much pause. The air above a swamp tends to be still and warm, giving rise to impressive thermals that swirl around the swamp area for hours at a time. While a crash landing in a swamp is unpleasant, airmen do not equate these semi-aquatic touch downs with the same dread as they do with splashing down in the ocean.

Table 5.6—Effects of Fog

Fog Density	Profession* Modifier	Profession** Modifier	Visibility	Concealment
Light	-2	-2	1d10x10 yards	None
Moderate	-3	-4	1d10x10 feet	¼
Heavy	-4	-8	2d4x5 feet	½
Impenetrable	-5	Impossible (-10)	5 feet	Total

* Airship Pilot
** Airship Navigator

Fog Density: These are general categorizations of fog and may be replaced by more campaign-specific titles.

Profession (Airship Pilot) Mod: This is the circumstance modifier applied to any Profession (Airship Pilot) skill check made while the pilot of the vessel is within the fog.

Profession (Airship Navigator) Mod: These modifiers are applied to any Profession (Airship Navigator) skill checks made while the navigator is within the fog. In impenetrable fog, only dead reckoning navigation is possible, and all these navigation skill checks suffer a -10 circumstance penalty.

Visibility: As the fog swirls through the area, visibility can change from round to round. During each round, the GM should roll the appropriate dice to determine the maximum visibility range during that round. Creatures inside the fog can only see that far during that round, and all targets outside of that distance are considered invisible.

Note that creatures outside of the fog bank, but looking into it, suffer the same visibility limits as those within the fog.

Concealment: This is the amount of concealment the fog provides to those creatures visible to one another within the fog. Creatures beyond the maximum visibility for the round are treated as if they were invisible, and so receive total concealment.

Aerial Equipment

Airmen do not spend most of their time fighting, but must always be ready to work, and therefore have a great need for their own types of equipment, from weapon tethers to glider suits. This chapter contains information on the many different types of specialized pieces of equipment used by airship crewmen. The tools found here are those most commonly utilized by the crew of an airship. While most of these items are utilitarian in nature, many adventurers may find them quite useful in their more dramatic escapades.

Auger, portable: Commandos sometimes need to knock a hole in the side of an airship without using explosives. When magic isn't available, the portable auger is a simple solution. This drill has a hollow circle bit on it, and the hole it creates is roughly 2' across (large enough for a medium-sized creature to squeeze through, though those in heavy armor do not fit in most cases).

The auger, designed by dwarves for dealing with elven threats, uses a complex system of gears to increase the power generated through the hand crank, allowing a single user of average strength to quickly burrow through the side of an airship. It takes five minutes to drill through wood that is three inches thick, which is roughly the thickness of the side of a wooden airship. This time is increased by 5 rounds for every negative point in the user's Strength modifier, and decreased by 5 rounds for every positive point in the user's Strength modifier (though Strength modifiers above +10 do not offer any additional decreases in time). For each additional inch of thickness of the wood being drilled through, time is increased by one minute. The user needs a firm hold on the side of the ship in order for the drill to work, cling hooks usually being sufficient.

Gear, drop line: Used with the airman's harness, drop line gears are simple tools designed to allow an airman or soldier to quickly and safely slide down a drop line. The gear is actually a set of grooved wheels through which the drop line is threaded. These wheels allow the airman to descend at rates of 50 feet to 5 feet per round and are encased in a steel housing. The housing itself is then attached to the rings of the airman's harness, allowing the wearer to descend the drop-line without using his hands at all, if he so chooses. The gear can also be locked into place, holding the airman at a certain position along the drop line.

During normal use, the drop line gear can support up to 500 pounds in weight. It can only support 300 pounds if the weight is 'parked' at a specific point on the drop line for more than a round, however. After that time, the gear's safety kicks in and releases the brake, safely lowering the wearer at 5 feet per round.

Harness, airman's: This simple leather harness fits snugly across the torso of an airman and is fastened around his arms and legs as well. The harness is studded with rings that are used for securing safety lines. The harness is normally worn by airmen who work the rigging of an airship, allowing them to slide along the ropes of the rigging without worrying about plummeting to their dooms.

The harness does restrict movement somewhat, reducing the movement of the airman wearing it by five feet per round, as he has to carefully maneuver his safety lines around the ropes of the rigging while still keeping it attached to his harness. The harness provides a +10 circumstance bonus to any Balance or Climb checks made while moving along the rigging. If, despite this bonus, the airman still falls, the safety line stops his fall after a mere 5-foot drop.

Airmen also wear harnesses during heavy weather, when they might unexpectedly find themselves face down on the deck. Any airman wearing a harness may automatically regain his feet during the next round as a move-equivalent action, as long as that harness is attached to a safety line. A harnessed airman also cannot fall to his death if knocked out of the ship. Virtually all airships have safety lines running the length of the ship's deck along their edges, along with other safety lines that can be hooked to a harness from the main mast—these ropes have a 20-foot reach and are only used during combat or the most severe weather.

Hooks, cling: Originally pioneered by rogues for use during jobs that require hanging around for extended periods or a considerable amount of climbing, cling hooks attach to the knees and elbows of the user with several leather straps. While in place, the straps slow climbing movement by one-half, but provide a +20 circumstance bonus to any climbing skill checks made while the wearer is attempting to climb up a wooden surface.

By digging the blades into the wood (or any similar surface, as judged by the GM), the wearer is able to slowly crawl up the sides of an airship. By reducing movement speed to a mere 5-feet per round, the wearer can even crawl across the bottom of an airship (Climb DC 30).

If the wearer chooses he can also cling to the side of the airship or similar structure by digging the blades in and simply relaxing. The wearer can hang indefinitely like this, though the GM may require a Fortitude save if the airship begins taking extreme maneuvers or is moving at more than 60 mph.

Mirrors, signaling: Used to communicate between airships, signaling mirrors use a set of rotating louvers to start and stop reflecting light. The length of bursts of reflected sunlight and the spaces between these bursts is a crude code used to convey different signals between two points.

When the sky is not overcast and the sun is above the horizon and visible from the signaling mirror's location, the mirror can be seen up to 5 miles distant. When the sky is overcast, or the during the dawn and dusk hours, this distance is reduced to roughly a mile. It requires a full-round action to transmit a message of up to 20 words, and receiving a message takes a full-round action as well.

Learning the code for the signaling mirrors is just like learning a language, and a new language must be taken for each different code you wish to learn. Those who know how to use the signaling mirrors can almost always get a job aboard an airship, especially working for mercenary units or the military, which make frequent use of signaling mirrors to coordinate their actions.

Quivers, spring: Designed by an elven archer after his first trip out on a combat airship, the spring quiver looks like a large, leather tube with a pair of wooden disks capping its ends. A thin flap of treated leather covers a small hole in the bottom disk of the tube, keeping water or other fluids from entering the quiver, while allowing arrows to slide out when disk is rotated by the tip of the wearer's finger. No matter how the quiver is turned or tossed, or whether the wearer is upright or upside down, no arrows fall out and, with a simple twist of his arm to the bottom of the quiver, the archer can retrieve an arrow just as quickly and easily as with a standard quiver. The spring quiver can hold 20 arrows, and takes one minute to preload.

Signal Plume: Few things are more frightening than getting knocked overboard while serving on an airship. While there are many ways to stay in the air after being knocked off the deck, after a heated battle your airship might drift off without you. The signal plume is a self-igniting bundle of powder that, when broken open, creates a brilliant red cloud

Table 6.1—Equipment

Item	Cost	Weight
Auger, portable	65 gp	10 lb.
Gear, drop line	100 gp	1 lb.
Harness, airman's	50 gp	5 lb.
Hooks, cling	75 gp	2 lb.
Mirrors, signaling	200 gp	2 lb.
Quivers, spring	150 gp	2 lb.
Signal plume	15 gp	—
Tool tether	50 gp	1 lb.
Vial, wrist	5 gp	—
Wings, airman	500 gp	2 lb.

of smoke. This smoke is not thick (it does not obscure vision) but can automatically be seen by any airship within 500 yards of your present location, and provides a +4 circumstance bonus to any attempts to spot you at greater distances. Officers always wear signal plumes and most crewmen save their silver pieces up to purchase one. If used on the ground, the plume is not nearly as impressive as when in the air, and simply provides a +2 circumstance bonus to spot the character if within 500 yards of his current location. The smoke is not designed to float upward, but to hover in the air.

Tool Tether: These lengths of lightweight chain are designed to prevent tools from flying overboard if an airman loses his balance or his grip on an item in his hand. The tether is a small spool, upon which five lightweight chains are wound. Each chain is from five to seven feet long, allowing it to stretch across the user's body easily, without restricting his movements. A tool or weapon is attached to the end of each of these tethers, preventing it from falling away if the airman drops it. No tool attached to a tether can weigh more than five pounds.

As a move-equivalent action, the airman can use a small crank on the side of the tool tether to wind up all the chains on the spool, bringing all the tools up to the spool where they can be easily grabbed. A simple locking mechanism keeps the spool from unwinding, and the chains can be locked down all together or individually, allowing the airman to pull out the one tool he needs while keeping the others secure on his belt. Most airman carry a tool tether on each belt and would not go on duty without their tethers to keep their tools safe.

The tool tether may also be used as a whip (without reach, though it can still trip and otherwise operates the same as a whip), provided the wielder has the proper exotic weapon proficiency. Stealthy wearers can also use the tether as a garrote, provided they're skilled in the use of that exotic weapon, as well.

Vial, wrist: This simple device is a spring-loaded vial with a clay cap on one end, and two straps to secure it to the wrist. The vial is pre-filled with a liquid, typically a potion of *feather fall*. When the potion is needed, the wearer bites off the cap, and the potion is propelled into his mouth. Many airmen wear these vials in case of emergencies.

Wings, airman: For military airships, it is not sufficient to harness a soldier to a safety line and keep him secure aboard his airship. When boarding actions are needed, it is necessary to move soldiers from the safety of their own airship, across the open air, and onto the deck of the enemy. This can be very dangerous and, should a gangplank fall or a boarding ramp be destroyed, might end the lives of dozens of soldiers.

This problem has been alleviated, to some extent, by the invention of airman wings. These extremely light 'wings' are actually flaps of woven spider silk that are strung between the wrists and ankles of the airmen who wear them. While they are useless on the ground, they provide a perfect means for gliding men from one location to another, provided they don't have to cover a great distance.

For every 10 feet a soldier wearing these wings moves through the air, he also descends by five feet. Gliding soldiers have a flying speed of 50 feet per round and must use all of that movement each round as they glide through the air, but are treated as if they were flying creatures with average maneuverability. Note that anyone wearing these wings may take no other actions during the round save staying aloft and steering the wings—a character may not attack, cast spells, use psionics, or undertake any other action while airborne.

Though soldiers see the wings as disposable items, other airmen value their wings and keep them in good repair for years on end. Particularly daring sailors may even choose to go 'thermal gliding', taking advantage of the thermals in the area the same as an airship can.

If an airman attempts to enter a thermal while wearing these wings, he must immediately make a Balance skill check (DC 15 + 1 per altitude band at which he is entering the thermal). If this check succeeds, he is able to brave the turbulence at the edge of the thermal and begins gliding on the heated winds swirling around him. An airman who exits an airship that is currently in a thermal does not have to make this check, provided he is on the portion of the airship that is currently inside the thermal and out of reach of the ring of turbulence.

Airmen who fail to successfully enter the thermal are simply rebuffed by the power of the turbulence, the airman loses one band of altitude immediately and must move at least 50 feet away from the thermal before they can attempt to reenter the thermal from a different direction.

While inside a thermal, the airman is not as strongly affected by the lift of the thermal because his wings are not able to capture as much of the air as an airship's hull and sails. Regardless of the lift capacity of the thermal, the airman may circle inside the thermal and gain one altitude band for each round during which he remains within the thermal. This requires no skill check.

If the airman attempts to leave the thermal, he must make a Balance skill check (DC 15 +1 per altitude band from which he is leaving the thermal). If this skill check succeeds, the airman is now out of the thermal and drifting along at the rates listed above. If the check fails, however, the airman loses a band of altitude immediately and must fly in a straight line for at least 50 feet before he is able to change course again.

Note that airman wings are very fragile and are destroyed if they suffer even a single hit point of damage from fire. Other forms of damage must cause at least 6 hit points of damage before the wings are destroyed.

Aerial Trade

Airships are expensive, which guarantees they'll begin plying the trade routes as soon as they enter the air. With the ability to travel very quickly, often circumventing dangerous creatures or treacherous terrain, an airship merchant can bridge the gap between two communities in a matter of hours, rather than days. This gives him the opportunity to reap great rewards even on simple ventures. Imagine how much, for example, wizards would pay for a steady supply of rare spell components, or local inns would cough up for a selection of fine wines and ales from a distant community of famed vintners and brewers.

When one looks further afield, the potential for profit becomes even greater. Traveling for days, rather than hours, allows a capable pilot to steer his airship potentially thousands of miles. This allows for the import of goods that local merchants have never before seen, and increases the possibility of finding something (such as gold) that is very rare in one area but common in an isolated or distant area. Imagine if the Spanish had been able to travel to and from the New World in days instead of weeks, and quickly load their airships with as much as gold as they could carry. The same opportunity exists for airship captains, who may find themselves wealthy beyond their wildest imaginings if they play their cards right.

For the aerial trader, then, there are several important factors to consider. First, one must find a market for one's goods. If this market is one's home port, things are greatly simplified, but often greater profit can be made by opening a *new* market. Though opening a market might be as simple as lowering the rope ladder from an airship and showing your wares to the locals, clever GMs should construct elaborate adventures around these endeavors. After all, when a group of heavily-armed, nasty looking fellows land their airship in your village, it's a time-honored tradition to ask them to please head out and slay some local beast that has been terrorizing the area.

Once a market is secured, the trader then needs something to trade. Although in some cases these two steps may be reversed. Whatever the case, a trader needs a significant supply of goods if he wishes to make any sort of steady income and keep his customers happy. Most traders do their best to diversify their offerings, bringing several types of items to market, rather than focusing on a single commodity. This helps mitigate the potential for catastrophic loss when you find out, for example, that the locals no longer like the red leather you have been providing to them and would prefer purple leather for their crafting needs.

The path between where trader acquires his goods and where he brings them to market is known as a trade route. Most trade routes are zealously guarded by the merchants who have founded them, often with deadly force. Since discovering new trade routes is one of the riskiest parts of the aerial trading business, those merchants who have mapped out their courses go to great pains to keep them secure from anyone who might be horning in on their business. Though alliances are sometimes formed between different merchant companies or airship captains to forestall conflicts over competition and to prevent unnecessary bloodshed, violence and acrimony are more common in this business. With the stakes in the airship industry as high as they get, captains are willing to kill (or worse) to keep their trade routes secure.

This brings a would-be trader to his next concern. In addition to needing a competent crew for the airship, he needs guards for the cargo. Guards can be hired for a silver piece or two per day, and are necessary not only to deter pirates from attempting to board and scuttle the airship, but also to keep the airship crew from getting ideas about mutiny and making themselves rich. While the master-at-arms is often placed in charge of mercenary guards aboard the airship, this is not always the case, particularly on airships whose captains have reason to doubt the loyalty and trustworthiness of their crews.

Even with all of these elements in place, a smart airship captain must always be investigating new trade routes and working out plans for new ways to increase his profit and reduce his risk. Most airship captains, for example, allocate a little extra fuel for each journey, allowing them to travel a bit out of their way in the hopes of finding a new market or source of goods. Yearly expeditions in search of markets or commodities are also common practices, and offer a GM the additional advantage of a ready-made introduction to new and exotic areas of his campaign setting.

As an airship merchant learns his markets, he also learns how to predict their needs and wants, and may be able to find something new he can begin importing to guard against changing public opinion. Wise captains supplement their high-profit, exotic items with staples, for which there is always at least some demand and chance of returning a profit.

The following sections provide detailed information for all of the above factors as well as other necessary rules and systems for running an aerial trade route in a standard d20 campaign.

The Market

A city's value as a trade market is based, in part, on its size, its wealth, and the availability of trade goods in the area. If a city can meet all of its needs by commerce with nearby areas, it is hardly a good investment as a market because the competition is fierce and local competitors do not have to pay the exorbitant upkeep on an airship. A market's value to an air trader is judged by the following attributes:

1. **Size:** Everyone living in a city is a potential customer, so larger cities tend to be targeted by merchants before smaller villages.
2. **Needs:** Towns have several needs, ranging from the simple necessities such as food and drink to the need for magical components, certain narcotics, or other, more exotic goods. Each of these needs is rated from 1 to 10—the higher the town's need for an item, the more its people are willing to pay for it.
3. **Commerce:** Towns with a high commerce rating receive a great number of goods from other areas and have no difficulty meeting their own needs. Commerce actually counteracts the needs of a town, to a certain extent, as they are already being taken care of by the natural flow of trade through the town.
4. **Salesmanship:** A merchant's skill is also important when determining the value of a market. While a skillful salesman might be able to turn a poor market into a good one, a particularly incompetent spokesman can also do the opposite, transforming a city hungry for exotic goods into a closed market.

The topics below detail how each of these factors interact with one another to determine the overall value of a market to a particular merchant. It is important to point out that this system does not pretend to be an economic model, but is merely a simple means for the GM and players to work out the benefits and risks of trade in their campaign. If the GM uses this system to measure the markets of the towns in his campaign, it is then relatively easy for the characters to be-

Table 7.1—Market size

Population	Purchasing Power	# of Needs	Surplus Categories
Up to 100	2 gp per person	1d3/1	1d3/1
Up to 500	2 gp per person	1d4/1	1d3/1
Up to 1,000	3 gp per person	1d6/2	1d6/2
Up to 5,000	4 gp per person	2d3/2	1d8/2
Up to 10,000	5 gp per person	1d8/2	2d4/2
Up to 30,000	10 gp per person	2d4/3	2d4/3
Up to 50,000	15 gp per person	2d4/3	2d6/5
Additional 20k	+2 gp per person	+1	+1/+1

Population: The number of able-bodied adults in the market who are gainfully employed or have enough wealth to make discretionary purchases for themselves or their family.

Purchasing Power: This is the amount, in gold pieces, that each member of the town's population has available for spending each month, on average. Note that this does not mean that every peasant in a city of 50,000 has 6 gp to spend on himself each month. This represents the average distribution of wealth in the city, not the actual per person financial standing. Note that commerce requires resources; a town full of poor people isn't going to be able to provide much in the way of trade. GMs should bump a town up or down on this chart if it is particularly impoverished or wealthy.

# of Needs: This column indicates how many needs a market has and the average size of those needs. Note that the numerical rating of the size of a need varies based on the type of need—if the need is normally purchased or sold in pounds, for example, this number indicates how many pounds the town is looking to buy, and if the item is normally moved in tons, this indicates the number of tons. This number may also represent barrels, bushels, or so on, depending on the material. A market's needs are normally refreshed every month—that is, the number of needs is rerolled and the full number of units of goods are again needed

Surplus Categories: This column shows how many extra categories of goods the market produces every month and the size of the categories that are produced. As with the # of Needs column, the indication of size is expressed based on how the need is normally bought and sold. Note that the GM is responsible for determining what categories each town needs, and which categories of goods the town has in surplus. The wise trader searches out towns with surpluses and then matches the items he can purchase in those markets with the needs of other markets.

gin buying, shipping, and selling goods. Tips for expanding several sections of the system are provided in the appropriate places, allowing it to grow with the needs of the campaign.

Market Size and Needs

Towns vary in size quite a bit, from tiny burgs of 20 people to thriving urban centers packed with tens of thousands of citizens, at least some of whom make valid targets for sales. The size of the town determines the number of needs it has, but not how severe those needs are, which is a function of the wealth in the town and its commerce rating.

In general, all cities have a need for the following:

Staples: All towns need food and drink, whether they need anything else or not.

Basic Supplies: Things like wagon wheels, ropes, and shoes never go out of style, no matter how big the town or how poor the populace.

Medical Supplies: Items as simple as a few bandages or basic surgical instruments can work wonders, and areas that are knowledgeable in the healing arts pay well for the tools and medicines needed to keep their people healthy.

Weapons, Simple: In a world where monsters can appear on the doorstep at any time, and even many wild prey animals are much more vicious than they seem on the surface, weapons are needed everywhere. Farmers need bows to keep wolves off their land, while hunters need bows and spears to help them bring down the deer, elk, or other creatures from which they make their living.

Other needs vary from town to town and should be determined by the GM (or by using **Table 7.1—Market Size**.) as fits the campaign and the nature of a city. Where possible, the GM should do his best to ensure the needs of a town make some sort of sense (see the section on trade goods, below) and are in keeping with the campaign information the players already know. A warlike border fortress, for example, is probably a good spot for delivering food, weapons, and magic items, but may not be the best destination for musical instruments or perfume.

Commerce

While matching surpluses to needs is an admirable plan, and the one most likely to end in success, most traders find themselves competing with other merchants and traders, both of the aerial variety and the more common type who hawk their wares from the backs of wagons. Every town should be assigned a Commerce rating by the GM that measures how much established trade flows through it. This rating runs from 1 to 20 and functions to decrease the amount of goods a market needs and generates.

The Commerce rating reduces the needs and surpluses in the market in the following order: number of needs, number of surpluses, size of one need, and size of one surplus. Each point in the rating reduces one of the above numbers by one (one point at a time and in order). If the market's Commerce rating is higher than the total of its needs, surpluses, and the sizes of both, it is completely saturated with

traders and is unable to sustain any further commerce. These markets are very rare, however, and more typical markets have a Commerce rating of somewhere between 5 and 7.

Salesmanship

The basic tenet by which all traders live, buying low and selling high, is the only way to make money. This means finding one market or area from which trade goods can be purchased at a reasonable price and then another market where the same goods can be sold for an exorbitant fee. This is normally accomplished by buying goods that are basic in one area and then traveling to an area in which those same goods are rare, or even exotic, to sell them.

While this may seem like a something-for-nothing proposition to many GMs, keep in mind that the travel between two locations is where your adventures occur. Just by getting your players to move from one area to another, you are opening the doors to adventures in new areas and interactions with different NPCs. As an adventure generator, the trading business works very well.

The Value of Distance

Because areas that are geographically isolated from one another often develop foods and other trade goods quite different from one another, distance can provide a bonus to airship traders, at the discretion of the GM. If this system is used, the trader gains a +1 circumstance bonus for every 500 miles separating the market in which he purchased an item and the market in which he is trying to sell it. This bonus applies to all Profession (Trader) skill checks made for the purpose of selling goods from a far-off land.

Buying Low

Once markets are identified and the trade goods available in the markets are determined, it's time for the prospective trader to get down to business. Purchasing goods is a relatively straightforward affair. The trader first states the category of goods he is searching for and then the GM decides whether that category of goods is available in the current market, either randomly or by choice. It normally takes a trader but a few hours to find out what is available for sale in the town.

The trader then makes a Gather Information skill check (DC 10) to determine the local market value of the item. This check normally requires a couple of hours as the trader wanders around the bazaar and merchants' quarter to examine what others are buying and selling. While the trader could forego this step, doing so prevents him from getting an accurate gauge of the value of certain goods in this market, imposing a -4 insight penalty to any Profession (Trader) skill checks made to purchase goods in the town.

The trader then meets with the seller of the goods he wishes to purchase and the two engage in an opposed Profession (Trader) skill check. The winner of the skill check comes out on the better end of the deal—if the trader wins, the goods are reduced in price by their variance plus 1% per point by which he beat the opposing merchant (though this may never reduce the price to less than 50%), but if he loses, the goods increase in price by their variance +1% per point by which the trader was beaten by the merchant (though this may never increase the price by more than 50%). This can be a cutthroat business, and any trader who isn't prepared to lose his shirt shouldn't be in it at all. Skillful traders make their fortunes from the misfortunes of the less-skilled, and the best trader can radically alter the price of goods by his salesmanship alone.

Generally, a trader can purchase all of the surplus in one category from a market with a single negotiation, but some GMs may prefer to spread the wealth a bit, forcing the traders to move around the city (potentially getting involved in all manner of adventures) to deal with many merchants in order to fill the hold of their airship.

Selling High

When the trader is ready to sell his goods, he sails his airship to the next market and sets down to unload his wares. A Gather Information check (DC 10) determines the types of goods that are sought after in the town, as well as the average price of those goods at the moment.

If the trader has any of the goods that are currently sought after, he may negotiate with a local merchant to sell them. This is handled with an opposed Profession (Trader) skill check. If the trader wins, he is able to unload the goods at a favorable price equal to its market value plus its variance plus the amount by which he beat the merchant. If he loses, however, the value of the goods is only equal to its market value minus its variance minus the amount by which the trader lost the opposed skill check. While the trader does not have to sell his goods to the merchant to whom he lost the check, he suffers a cumulative -2 circumstance penalty when attempting to sell the same goods to another merchant in the same market. Word gets around, and other traders do their best to take advantage of a trader down on his luck.

A single merchant can buy enough goods to fill the market's needs for the particular category of the negotiation. This is limited by the purchasing power of the market, however, as no market buys more trade goods than allowed by its size and wealth.

Once a trader has sold off the goods in the cargo hold of his airship, he's ready to start the process all over again, traveling to another market to buy up some cheap goods to ship off to another community.

Trade Goods

People want and need a great many things, and cities are no different. This section provides information about several general classes of trade goods and their values, as well as the needs to which those trade goods are applicable. Note that the categories provided below are very broad and comprise a great many individual items. Example items are presented for each category of trade good, but do not feel restricted only to those mentioned. Rice can be a simple substitute for many other types of grain, for instance, while rubies could take the place of diamonds. What is important is not an accurate accounting of every type of item aboard a merchant airship, but general information about the types of goods on the airship and their overall value.

Trade Good Categories Descriptions

This section explains what sorts of items are in each of the trade good categories. The categories should serve as a handy starting point for a trading campaign. While the GM is the ultimate arbiter of which items fall into which categories,

Table 7.2—Trade Goods Categories

Category	Unit Size/ Weight	Unit Cost	Buy/Sell DC	Price Variance	Availability
Alcohol	Ton	1,000 gp	20/20	2d6%	60%
Armor, Heavy	Ton	8,000 gp	25/15	1d6%	30%
Armor, Light	Ton	1,000 gp	15/15	1d6%	40%
Armor, Medium	Ton	3,000 gp	20/15	1d6%	35%
Beverages	Ton	750 gp	20/20	1d10%	50%
Cloth, Common	Ton	700 gp	15/20	1d8%	70%
Cloth, Exotic	Pound	2,000 gp	25/20	1d8%	30%
Cloth, Rare	Ton	1,000 gp	20/20	1d8%	40%
Construction Materials	Ton	1,000 gp	15/15	1d4%	60%
Gems, Precious	Pound	10,000 gp	30/25	2d10%	10%
Gems, Ornamental	Pound	2,000 gp	30/25	2d10%	25%
Gems, Semi-Precious	Pound	5,000 gp	30/25	2d10%	15%
Magic Items	By Item	By Item	By Item	By Item	By Item
Meats, Exotic	Pound	1,500 gp	30/25	2d6%	20%
Meats, Rare	Ton	700 gp	25/20	2d4%	30%
Metals, Common	Ton	2,500 gp	20/20	1d4%	50%
Metals, Precious	Pound	7,500 gp	30/20	1d4%	10%
Metals, Refined	Ton	5,000 gp	25/20	1d4%	25%
Scribing Materials	Ton	1,000 gp	20/20	1d4%	30%
Spell Components	Pound	100 gp	20/20	1d6%	40%
Spices, Common	Ton	500 gp	20/15	3d4%	40%
Spices, Exotic	Pound	1,200 gp	30/15	2d6%	15%
Spices, Rare	Pound	750 gp	25/15	2d6%	30%
Staple Foods	Ton	500 gp	15/25	1d10%	60%
Supplies, Basic	Ton	600 gp	20/25	2d6%	60%
Supplies, Exotic	Ton	2,000 gp	25/15	2d8%	20%
Supplies, Rare	Ton	1,000 gp	20/20	2d8%	25%
Weapons, Exotic	By Item	8,000 gp	25/15	1d6%	15%
Weapons, Martial	Ton	5,000 gp	20/15	1d6%	25%
Weapons, Simple	Ton	3,000 gp	15/15	1d6%	50%

Category: The type of good you are purchasing or selling.

Unit Size/Weight: Different categories of goods are measured in different ways, with the two most common measurements being pounds and tons. A ton of goods is not its weight, but rather the amount of that cargo category that can be safely loaded into one ton of cargo space on an airship.

Pounds are units of weight—a pound is a pound is a pound. In general, you can put up to 500 pounds of an item measured by the pound into a single ton of cargo space. This includes the addition of any packing materials or storage vessels needed to hold the materials.

Buy/Sell DC: When attempting to buy goods at less than the market value where you are purchasing the item, you must engage in a contested Profession (Trader) skill check against the trader or supplier of the goods (who may choose to use an appropriate Profession or Craft skill based on the items being purchased). The same is true when you attempt to sell goods for more than the current market value in the location in which you are selling the goods.

The DCs found in this column, however, may be used in lieu of contested skill checks to reduce the amount of die rolling needed and to cut down on the number of NPC statistics needed by the GM. The first number is the DC for all Profession (Trader) skill checks made while purchasing items, and the second is for selling the goods.

Price Variance: This is the percentage by which the price of goods is increased or decreased, based upon the success of your Profession (Trader) skill checks. (See Buy Low/Sell High below for more details.)

Availability: This is the percent chance you are able to find one ton (or pound) of a good in the local area. This chance is based on a moderate sized town of average wealth (see Markets, below). Note that availability of goods should only be checked once per month, as it takes some time for the selection of saleable goods in the market to change.

allowing players to do some of the categorization work can be a boon—all those involved in the trading business should work together to determine a list of goods and the categories to which they belong. Similarly, be sure to add categories native to your campaign to this list, personalizing it for your game.

Alcohol: Including everything from ale to rotgut whisky to the finest liqueurs, this category is a steady and reasonably profitable seller. While most taverns sell local brews, imports tend to catch on quickly, and drinking is one hobby of fantasy worlds that doesn't ever seem to die down.

Armor, Light: Light armors made from leather and other natural materials is very common in small villages threatened by goblinoids, and amongst irregular troops stationed in frontier areas. Barbarian tribes, especially, pay well for expertly crafted suits of light armor.

Armor, Medium: Most of this armor is sold to mercenaries and other military organizations without a government or other backer to keep them supplied with armor. This armor cannot be sold without a permit or license in many areas.

Armor, Heavy: Almost always sold to very wealthy mercenary units or elite military units, sales of heavy armor can be very high during times of war. Unfortunately, the armor's durability and the care taken in maintaining it generally means there are few repeat customers.

Beverages: This category includes all nonalcoholic beverages, particularly those made from fruit juices. While beverages are not necessary for survival, most cities provide a reliable (if not terribly profitable) market for such items.

Cloth, Common: Any material worn by the common folk of the area falls into this category. Linen and cotton are the best examples, but this category could also include silk or other materials based on how common they are in a given market area.

Cloth, Rare: Rare cloths can be produced in the market area, but are quite expensive or difficult to obtain. Silk usually falls into this category, as does velvet and other fine materials typically reserved for nobility.

Cloth, Exotic: These materials cannot be found in the market area at any price and are generally rare, even in the markets where they originate. Spider silk rendered useful for clothing falls into this category, as do cloth-of-gold and other extremely costly materials.

Construction Materials: Items such as wood and plaster are used just about everywhere cities are constructed, and even good quality stone can find a market in places. These materials are available locally, but perhaps not in the quantities needed or not in ready-to-use format (trees instead of planks or beams, for example).

Gems, Ornamental: These gems tend to have relatively low values, and include such stones as agates, bloodstones, carnelians, and sard.

Gems, Semiprecious: Ranging from amber to aquamarines, these gemstones are used quite often in jewelry, and are highly sought after by jewelers and other craftsmen. Because they are often difficult to obtain in bulk, merchants can make a good profit from these items, though the risks (as with precious metals) can be great.

Gems, Precious: Jewels in this category are the flashy, well-known types seen in exquisite ornamentation and priceless jewelry. Diamonds, rubies, emeralds, and jacinths all fit into this category, which is one of the most dangerous to transport. Pirates pay very well for information about shipments of precious gems and spare no expense in taking airships known to transport such high value items.

Magic Items: This category actually does include individual items and is one of the riskier trades to become involved with. A merchant must find a supplier who can create the items for considerably less than market price and then must find a buyer for specific items that may not be needed or wanted in the market area. While the profits on such items can be large, few merchants are able to maintain a steady supply of these items, and those that can tend to be wizards themselves, who might make a tidy profit just by opening a shop in their home city. For the daring, though, or those who are sure of the demand for a particular type of magical item in an area, this can be a very lucrative type of trade good.

Meats, Rare: Of better quality and perhaps from different creatures than the meat found in staple foods, rare meats include fine steaks as well as the flesh of game animals not native to the market area. Ostrich meat, for example, is rare in most of the modern United States, and a fine porterhouse steak aged to perfection costs enough to qualify for this category, as well.

Meats, Exotic: This type of meat is taken from monsters, extraplanar creatures, or other beings that are not typically used for food. Meat taken from sentient creatures also fits into this category, though anyone who traffics in such items is certainly working toward an alignment change to Evil.

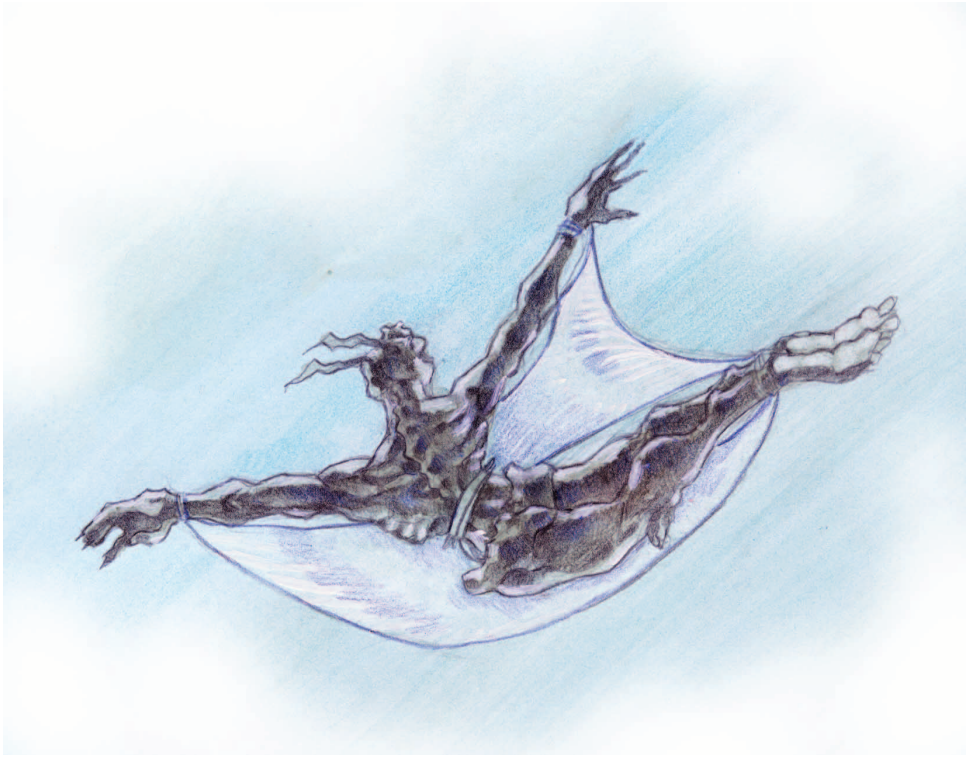
Metals, Common: Iron, bronze, lead, and other metals that are used for common ornamentation and the creation of tools are found in this category. Most common metals are available in any given area, though perhaps not in the same quantity or purity as imported metals.

Metals, Refined: Metals such as silver, steel, and electrum fall into this category. Most of these metals are used by the common people in both jewelry and tools, and are familiar to most smiths in the area.

Metals, Precious: Gold, platinum, mithral, and other metals that are either very rare or particularly valuable fit into this category. While a great deal of profit can be made in the precious metals business, the risks of piracy, crew theft, and general larceny are grave enough that most airship captains do not traffic in these metals.

Scribing Materials: This includes inks, pens, and various types of parchment, paper, or vellum. While the demand for these supplies in rural or frontier areas is virtually nonexistent, large, lawful cities burn through reams of paper and gallons of ink each day as the laws, mercantile transactions, and legal proceedings are recorded by dutiful scribes.

Spell Components: This category includes all spell components worth less than 100 gp. From pearls used for *identify* spells to the purest bat guano for those *fireballs*, spell components are a trade good that consistently sells well and offers a decent profit. Because wizards tend to accumulate wealth and *need* these components, the providers can easily make a good living in larger cities.



Spices, Common: Any spice available in the market area and used in day-to-day cooking falls into this category. This is a category that changes rapidly based on location—the chilies that are so common in the south are definitely more prized in the north, where they are most likely considered rare, or even exotic.

Spices, Rare: These spices are available in the market area, but only in limited quantities. These food additives are prized by chefs for the wealthy and are one good way to turn a quick profit in a market.

Spices, Exotic: These spices do not grow within 1,000 miles of the market and are not typically used in the area. While the demand for these spices is not high (given the lack of familiarity local chefs have with them and their uses), they do fetch a hefty price from those who do purchase them.

Staple Foods: Grains, vegetables, and meat are the staples of life in most areas and no market can long go without them. Grains such as wheat and corn, and produce such as beans and turnips are by far the most common staple foods, but areas with domesticated livestock or plentiful game may be used to meat on their plates every day. Staple foods are not a big seller (except for in times of drought, famine, or war), but they are reliable. This category also includes potable water, but not other types of drink.

Supplies, Basic: Ropes, simple farm implements (such as hoes), and basic crafted items (such as wagon wheels) comprise this category. The majority of items in this category can be found locally, so a merchant needs to have a cheap source if he wishes to compete with the community's producers.

Supplies, Rare: Rare supplies are either those requiring a great deal of expertise to create (such as silk rope or glass) or that are not produced locally. A good example is an isolated town full of wizards who need a few hundred daggers with which to arm their undead army—though the goods are not terribly difficult to find in most places, no one in the town has the ability to produce enough daggers to meet the need. This category also includes items such as alchemist's fire and thunderstones, which are available in many cities but require expertise to create.

Supplies, Exotic: These supplies are not only made of materials that are rare or difficult to manufacture, they also require a great deal of expertise and skill to create. This includes things such as mirrors or lenses, as well as specialized items like lockpicks or the types of inks and papers needed by wizards for scribing scrolls.

Weapons, Simple: Any weapon in the Players' Handbook that is classified as simple falls into this category. These weapons are most commonly sold to villagers and frontiersmen who have little real weapon training but need a means to protect themselves.

Weapons, Martial: This category is made up of weapons that are defined as Martial weapons in the Player's Handbook. Almost always sold to adventurers or military organizations, these weapons also see a brisk trade with revolutionaries and troublemakers of all stripes. In most cases, selling martial weapons in a city may require a permit, or at least some carefully handled bribes.

Weapons, Exotic: Again, this category contains only those weapons that are defined as Exotic in the Player's Handbook (or other sources). These weapons are often tied to martial arts styles or cultures that have their own techniques for battle. While most markets do not snap these weapons up, it may be possible to make a small but steady stream of profit from weapons collectors or fighters in the market area.

Piracy

One of the great dangers of aerial commerce is piracy. Airship pilots and navigators must stick to established trade routes (even if those routes are ones they discovered themselves and do not share) or risk becoming lost. If the route a trader follows becomes known (and all do, eventually) he must take measures to protect himself or risk having his ship raided by pirates. There are no hard and fast rules for when pirates strike, but it must generally be worth their while and the risk to their airship before they'll make an attempt. In general, it's a safe bet that any cargo worth more than 20,000 gp attracts the attention of pirates.

Aerial Characters

The men, women, and creatures that make their homes in the skies have developed a culture and style all their own. From their flashy clothing to their martial arts, those who live in the sky set themselves apart from the groundlings at every opportunity. In this chapter you will find a selection of new skills, feats, and prestige classes ready for use in your campaign world.

Professional and Craft Skills

Virtually all of the special skills needed by the crew of an airship can be categorized as either Profession or Craft skills. These are summarized below, with a brief explanation of how they are used.

Profession (Air Sailor): This is the basic skill used by all members of the airship crew. It covers such mundane tasks as tying up lines for the rigging, lashing down cargo, and the other myriad duties necessary while an airship is underway. Note that this skill does not cover any of the more specialized abilities needed by pilots, navigators, and captains.

This skill can be used as a replacement for the Balance skill while the airman is aboard an airship, as a representation of his 'air legs.'

Profession (Airship Navigator): This skill covers the navigation of an airship using the methods found in Chapter 5: Aerial Overland Travel. This skill allows the use of any of these methods of navigation.

Profession (Airship Pilot): This skill gives a character the ability to pilot an airship. Characters with a significant number of ranks in this skill are in high demand, as competent pilots are very valuable to merchant houses and military organizations.

Profession (Engineer): This demanding skill is used in the maintenance of airship engines. An airship without an engineer is likely to find itself in a great deal of trouble, as the engines require care and maintenance throughout a journey to avoid damage to their components. Having six or more ranks in this skill provides a +2 synergy bonus to any Craft (Airship Engine) skill checks.

Craft (Airship): Creating and repairing airships are the domains of this skill. Engineers with ranks in it oversee the design and construction of all airships, offering their knowledge and expertise to guide the laborers and supervisors.

Craft (Airship Engine): This skill is used to create and repair airship engines and is most often possessed by characters with the Profession (Engineer) skill. Having six or more ranks in this skill provides a +2 synergy bonus to any Profession (Engineer) skill checks.

Aerial Feats

The feats in this section provide aerial characters with the edge they might need to survive in the oft-times hostile domain high above the ground. Note that these feats may be taken by any character, provided they have they meet the prerequisites. Only Weapon Proficiency (Airship), Aerial Tactics, and Rigging Combat can be taken as bonus feats by fighters, and only one feat, Engine Savant, is considered a bonus metamagic feat for wizards.

Aerial Balance [General]

You are skilled at maintaining and regaining your feet during the worst conditions while airborne.

Prerequisite: —

Benefit: You receive a +4 bonus to any Balance (or Profession (Air Sailor)) skill check made to keep your feet as a result of extreme aerial maneuvers or the effects of an attack aboard an airship.

Aerial Command [General]

You know airships inside and out and are able to get the most from your crew.

Prerequisite: Profession (Air Sailor) 10+ ranks

Benefit: This feat is only effective when taken by a ship's Captain or Lieutenant. While you are on the deck, your crew receives a +2 morale bonus to any skill checks directly related to the piloting, navigation, or general operation of the airship. This bonus does not apply to attack or damage rolls made by airship weapons crews, but does apply to any skill checks made during ramming attempts. Only one officer on a given ship may use this feat at a single time. This bonus stacks with the standard Captain bonus.

Aerial Tactics [General]

You are skilled at knowing when and where to attack airships and are able guide others.

Prerequisites: Base Attack Bonus +5, Weapon Proficiency (Airships)

Benefit: You are able to direct a number of airship weapons crews equal to one-half your level if they are within earshot of you. During each round in which you spend a full-round action coordinating these attacks, every attack made by the weapon crews under your direction receives a +2 insight bonus to attack and damage rolls. This feat can be employed by several characters at once, but it must be directed at different sets of weapons crews. This bonus stacks with the standard Captain bonus.

Engine Savant [Metamagic]

When constructing airship engines, you are able to tweak the design to surpass the normal power factor limits.

Prerequisites: Craft (Airship Engine) +10 ranks

Benefit: You may take this feat twice, if you desire, increasing the maximum number of power factors the engine may possess by 50, each time.

Normal: Airship engines are normally limited to 100 power factors. Taking this feat once allows you to create airship engines with up to 150 power factors; taking this feat twice allows you to create airship engines with up to 200 power factors.

Instinctive Navigation [General]

You have an inborn skill for navigation that not only allows you to become lost less frequently, but also to find routes that are more efficient than others.

Prerequisites: —

Benefit: You receive a +2 insight bonus to all Profession (Airship Navigator) skill checks you make. In addition, you reduce the fuel consumption for an airship by 10% each day, provided you spend at least one shift as the ship's navigator during that day. This bonus does not apply if you do become lost, however.

Natural Pilot [General]

Your skill while piloting airships is legendary, from your ability to control the airship in a storm to your talent for helping the weapons' crews to line up their shots.

Prerequisites: Wisdom 15+

Benefit: You receive a +2 insight bonus to any Profession (Airship Pilot) skill checks you make. In addition, any round in which you succeed by 5 or more on a Piloting skill check, the airship weapons crews in one quadrant (your choice) of your airship receive a +2 circumstance bonus to any attack rolls they make against other airships.

Rigging Combat [General]

You know how to fight from the rigging of an airship with greater proficiency than most.

Prerequisites: Base Attack Bonus +7, Aerial Balance, Mobility

Benefit: You are able to reduce the penalty for attacking from the rigging (as discussed in Chapter 4: Aerial Combat) to -2.

Normal: Attacking from the rigging of an airship normally carries a -4 penalty to all attack rolls made during the round.

Weapon Proficiency (Airship Weapons) [General]

You know how to load, aim, and fire the weaponry found aboard airships.

Prerequisites: Base Attack Bonus +3

Benefit: This skill provides proficiency with all of the weapon types found aboard airships.

Prestige Classes

The prestige classes found in this section are designed for use in an aerial campaign, but could be adapted for a land-based campaign as well.

Airship Saboteur

Sometimes, it's easier to deal with an enemy airship by getting a small group of stealthy killers aboard to do the dirty work, rather than trying to blast the thing apart with ballistae and catapults. The airship saboteur is a master of this type of mission, using his natural abilities and expert training to get from one airship to another. Once aboard an airship, the saboteur works his way toward the engine and uses his natural talents on it, then escapes before it can explode while he's aboard. The most skillful saboteurs not only get aboard the vessel to damage the engine, but pride themselves on their ability to identify and neutralize officers and other key personnel.

While a saboteur is not terribly effective in a stand-up fight, he is able to cause a great deal of damage to an enemy airship and to the enemy's morale. Given a few minutes of time and the right tools, the saboteur is a dangerous opponent and one that is more than able to wreak havoc against his targets.

Hit Die: d6

Requirements

Balance: 6 ranks
Disable Device: 10 ranks
Disguise: 8 ranks
Move Silently: 6 ranks
Alchemy: 4 ranks
Feats: Alertness

Class Skills

The airship saboteur's skills (and the key ability for each skill) are Alchemy (Int), Balance (Dex), Craft (Int), Disable Device (Int), Disguise (Cha), Hide (Dex), Jump (Str), Move Silently (Dex), Open Lock (Dex), Profession (Wis), Search (Int), Spot (Wis), Use Magic Device (Cha), Use Rope (Dex)

Skill Points at Each Level: 4 + Int Modifier

Class Features

All of the following are class features of the airship saboteur prestige class.

Weapon and Armor Proficiency: The airship saboteur is proficient with all simple and martial weapons but receives no additional proficiency with armor she is not already familiar with. In addition, many of the airship saboteur's skills suffer penalties if he wears armor heavier than light armor.

Wing Use (Ex): Saboteurs are masters at using airman wings (see Chapter 6: Aerial Equipment). The airman is able to increase the range of his wings, falling a mere 5 feet for every 20 feet traveled, rather than 5 feet per 10 feet.

Aerial Hiding (Ex): While flying using airman wings, the saboteur may hide from those on a specific airship. This is done by either flying below the airship, or by getting above the airship and flying so that the saboteur remains hidden by the bright light of the sun. This ability does not work at night, unless the saboteur is hiding below an airship. This is treated the same as a standard check for the Hide skill and is opposed by the Spot skill of anyone looking for the saboteur.

Explosives (Ex): With 8 hours of work and a successful Alchemy skill check

Table 8.1—Airship Saboteur Progression

Class Levels	Base Attack	Fort. Save	Ref. Save	Will Save	Special
1	+0	+0	+2	+0	Wing Use
2	+1	+0	+3	+0	Aerial Hiding
3	+2	+1	+3	+1	Explosives
4	+3	+1	+4	+1	Locate Officer
5	+3	+1	+4	+1	*Feather Fall*
6	+4	+2	+5	+2	Sneak Attack +1d6
7	+5	+2	+5	+2	*Fly*
8	+6	+2	+6	+2	Engine Wrecker
9	+6	+3	+6	+3	Take Down
10	+7	+3	+7	+3	Ship Killer

(DC 20), the airship saboteur is able to concoct an explosive that causes severe hull damage when mounted on an airship's hull. This explosive costs 500 gp per application, and causes 3d8 hull points of damage per application when properly placed.

To place the explosive, the saboteur must be in contact with the exterior hull of the airship for 5 minutes. At the end of this time, he makes an Alchemy skill check (DC 25) to put the explosive into place. The explosive detonates 2d4 rounds later, and, if mounted properly it causes the above damage. If improperly mounted, the explosive makes a colorful blast of light and throws debris around, but causes no hull damage.

This explosive may be detonated on the ground or the deck of an airship, causing 2d6 hit points of damage to all creatures within a 10-foot radius, with a Reflex save (DC 15) needed to avoid half the damage from the explosive.

Locate Officer (Ex): A successful Wisdom check (DC 12) allows an airship saboteur to locate an airship officer on the deck if within 100 feet of the officer. This does not require an action and is an automatic ability that functions anytime the saboteur is within range of an officer. This ability does not tell the saboteur what the officer's rank is, only that he is an officer.

Feather Fall (Sp): The saboteur has learned to cast the *feather fall* spell once per day as if he were a 10th-level wizard. Note that the saboteur actually casts this spell, though he may not augment the spell with any metamagic feats.

Sneak Attack +1d6: The saboteur gains a 1d6 sneak attack that works identically to a rogue's sneak attack ability. If the saboteur has an existing sneak attack ability, another 1d6 is added to the damage caused by that sneak attack ability.

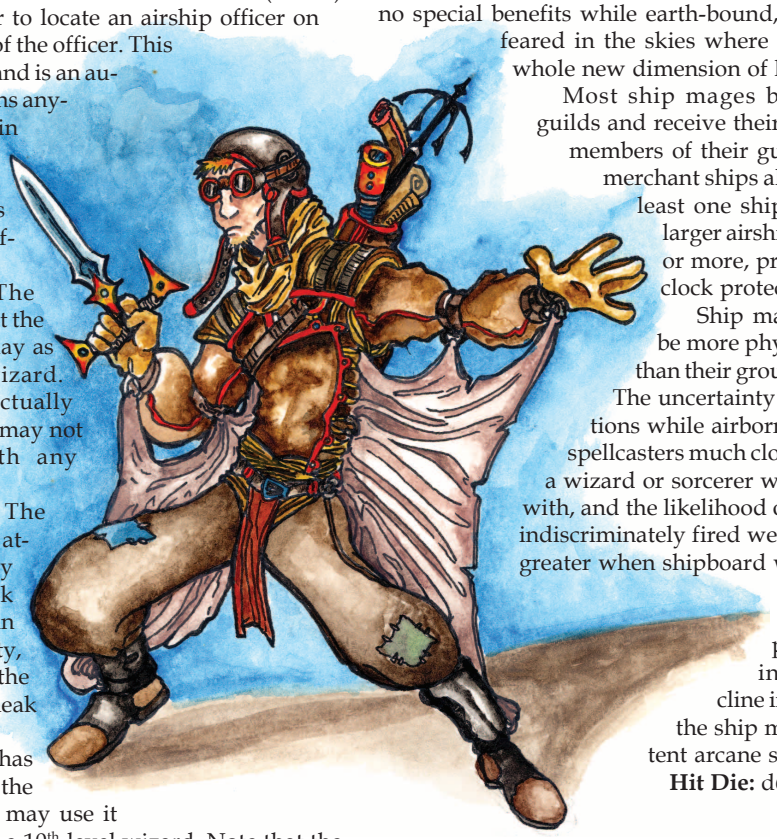
Fly (Sp): The saboteur has mastered the ability to cast the *fly* spell at this level, and may use it once per day as if he were a 10th-level wizard. Note that the saboteur actually casts the spell, though he may not augment the spell with any metamagic feats.

Engine Wrecker (Ex): By spending one round working on an airship engine, the saboteur is allowed to make a Disable Device skill check (DC equal to the Repair DC of the engine). If this check succeeds, the saboteur may cause 1d8 hull points of damage to the engine.

Note that this ability may be used more than once on a single engine. When used, the damage is held in waiting—the saboteur may decide to have it delayed by one minute per level of this prestige class. When the time expires, all accumulated damage is applied at once.

Take Down (Ex): This attack must be made during a surprise round. It is resolved as a standard melee attack that, if successful, immediately inflicts enough subdual damage to the target to render him unconscious. This attack only works against targets that are normally affected by sneak attacks. Due to the intense concentration needed to execute this attack, the saboteur is left exposed during the round immediately following its use and is denied his Dexterity bonus while he attempts to regain his bearings.

Ship Killer (Ex): Similar to *engine wrecker*, but one round of work is enough to completely disable a single engine, reducing its hull points to zero if the skill check is successful. If the skill check fails, however, the engine immediately suffers 1d6 hull points of damage and the saboteur suffers 1d4 hit points of damage per lift factor as the engine blasts flares of energy from its surface.



Ship Mage

Airships are magical creations, so it is only natural to find wizards aboard. The ship mage is a master at the art of magic, gifted with the ability to tailor her spells to better aid her allies and hinder her enemies. Though the ship mage gains no special benefits while earth-bound, she is a force to be feared in the skies where her spells take on a whole new dimension of lethality.

Most ship mages belong to merchant guilds and receive their training from other members of their guild. Because of this, merchant ships almost always have at least one ship mage aboard, and larger airships tend to have three or more, providing around-the-clock protection for the airship.

Ship mages are required to be more physically fit and active than their groundling counterparts. The uncertainty of the combat situations while airborne often places these spellcasters much closer to the action than a wizard or sorcerer would be comfortable with, and the likelihood of being struck by an indiscriminately fired weapon becomes much greater when shipboard weapons are hurling fire and darts into the air. Though this physical conditioning causes some decline in spellcasting ability, the ship mage is still a competent arcane spellcaster.

Hit Die: d6

Requirements

Profession (Air Sailor): 5 ranks
Scry: 5 ranks
Feats: Alertness, Empower Spell, Maximize Spell
Spellcasting: Ability to cast at least 4th-level arcane spells.

Class Skills

The Ship Mage's class skills (and the key ability for each skill) are: Alchemy (Int), Balance (Dex), Concentration (Con), Craft (Int), Intuit Direction (Wis), Knowledge (arcana) (Int), Knowledge (religion) (Int), Profession (Wis), Scry (Int), Speak Language (None), Spellcraft (Int), Use Rope (Dex)

Skill Points at Each Level: 2 + Int Modifier/level

Class Features

All of the following are class features of the ship mage prestige class.

Table 8.2—Ship Mage Progression

Class Levels	Base Attack Bonus	Fort. Save	Ref. Save	Will Save	Special	Spells Per Day
1	+0	+0	+2	+2	Weapon Guidance	
2	+1	+0	+3	+3		+1 Level
3	+2	+1	+3	+3	Maneuverability Witchery	
4	+3	+1	+4	+4		+1 Level
5	+3	+1	+4	+4	Resilient Aura	
6	+4	+2	+5	+5		+1 Level
7	+5	+2	+5	+5	Retaliation	
8	+6	+2	+6	+6		+1 Level
9	+6	+3	+6	+6	Engine of Destruction	+1 Level
10	+7	+3	+7	+7		+1 Level

Weapon and Armor Proficiency: The ship mage is proficient with all simple weapons but receives no additional proficiency with armor she is not already familiar with.

Spells Per Day: The ship mage receives spells per day as if she had gained a level of a previous arcane spellcasting class (the ship mage must choose which class to gain a level in whenever this ability is gained). She does not gain any other benefits a character of that class would have gained (bonus feats and so on).

Weapon Guidance: By working closely with the crew of a single weapon, the ship mage is able to provide magical guidance to any projectile fired from that weapon. Note that this ability does not provide a bonus of any type to indirect fire weapons.

When this ability is used, the ship mage must choose a number of hit points to sacrifice and adds this number as an attack and damage bonus to the next attack made with the designated weapon. Using this ability is a full-round action, during which time the ship mage must be in constant contact with the airship weapon she is guiding. This means she must actually be touching the weapon when it is fired and must remain in contact with the weapon for the entire round.

Maneuverability Witchery: This special ability allows the spellcaster to sacrifice spell slots in order to increase the maneuverability of his airship or decrease the maneuverability of an enemy airship. When this ability is used to increase maneuverability, the target must choose what level of spell slot to sacrifice. For every level of the spell slot, the ship mage increases the airship's maneuverability by 1 for one round *or* increases the duration of this ability by one minute.

Thus, sacrificing a 5th-level spell slot allows the airship mage to either increase the airship's maneuverability by 5 for one round, or 4 for one minute, 3 for two minutes, 2 for three minutes, or 1 for four minutes.

When used to decrease the maneuverability of an enemy airship, this ability is much more difficult to use. The enemy airship is entitled to a Fortitude save to resist the ability entirely (DC determined as if this ability were a spell of level equal to the spell slot sacrificed to use the ability). If the save fails, the airship's maneuverability is reduced by 1 for every two spell levels of the spell slot (rounded down) for one round. One spell level of the slot can be expended to increase this duration to one minute, but the duration cannot be further increased. Range of this ability is long (400 ft. + 40 ft. per level).

Resilient Aura: By linking herself to her airship with a simple ritual, the ship mage is able to increase the vessel's resistance to damage from magic. Unfortunately, doing so takes a terrible toll on the ship mage, reducing her health each time a harmful spell targets the airship.

Activating this ability requires a single round of concentration by the ship mage. Once completed, the ability remains active for a number of rounds equal to the total of her highest arcane spellcasting class level and her levels of this prestige class, or until the ship mage is rendered unconscious.

While this ability is active, the airship receives a +2 bonus to all Reflex and Fortitude saves to resist hostile spells. Whether the save is successful or not, the ship mage suffers a number of hit points of damage equal to the level of the spell cast at the airship. The ship mage may choose to end this ability at the end of any round.

During any round in which this ability is active, the ship mage may take her full number of normal actions, including spellcasting. The damage caused by this ability to the ship mage does not require a Concentration check if it occurs while the ship mage is casting a spell.

No more than one ship mage may use this ability for the airship during a given round.

Retaliation: Any spell cast at the airship while it is affected by the *resilient aura* ability creates a mental 'tag' in the mind of the ship mage maintaining the resilient aura. This forges a bond between the ship mage and the caster, through which the ship mage may cast a single spell, after which this bond is destroyed. The ship mage need not be able to see the target to cast a spell at him through the bond. The spell must be cast during the round immediately following the round in which the spell that forged the bond was cast, or the bond grows too weak to provide the necessary link.

Any spell cast through the bond is treated as if it were cast by a spellcaster two levels higher than the ship mage, with attendant increases in damage and all other level-dependent elements of the spell. Spells cast through the bond also have their range increased by one category (from close to medium, for example), though touch spells never have their range increased in this way.

Engine of Destruction: This powerful ability allows the ship mage to draw upon the power available in his airship's engine to increase the power of spells she casts. Using this ability temporarily reduces the airship's power by 10 power factors, lowering its energy for 1d4 rounds per level of the spell they are used to power.

The ship mage may then cast any spell as if it is a maximized, empowered version of the same spell. However, this spell must be applied against an enemy airship and does not directly affect that airship's crew. The mage must be in contact with a ship to draw upon its power.

Table 8.3 –Ship Theurge Progression

Class Levels	Base Attack Bonus	Fort. Save	Ref. Save	Will Save	Special	Spells Per day
1	+0	+2	+0	+2	Airship Channel, +1 focusing	
2	+1	+3	+0	+3		+1 Level
3	+2	+3	+1	+3	Divine Shield, +1 focusing	
4	+3	+4	+1	+4		+1 Level
5	+3	+4	+1	+4	Healing Current, +1 focusing	
6	+4	+5	+2	+5		+1 Level
7	+5	+5	+2	+5	Faith's Armor, +1 focusing	
8	+6	+6	+2	+6		+1 Level
9	+6	+6	+3	+6	+1 focusing	+1 Level
10	+7	+7	+3	+7	Divine Ram	+1 Level

Ship Theurge

Airships are massive investments by their owners, who wish to keep their vessels in the air as long as possible. A ship theurge is uniquely trained to do just that, using their divine powers to repair damage to the airship and protect it from attacks.

Ship theurges are able to channel the power of their gods into the airship itself, providing the vessel with benefits and bolstering the crew against damage and enemy spell effects. Unfortunately the strain of doing so leaves the theurge weak and weary, drawing upon his personal energies as well as the ability of the divine.

Hit Die: d10

Requirements

Constitution: 12+
Concentration: 10 ranks
Feats: Enlarge Spell, Extra Turning
Spellcasting: Ability to cast 3rd-level divine spells.

Class Skills

The Ship Theurge's class skills (and the key ability for each skill) are: Balance (Dex), Climb (Str), Craft (Int), Diplomacy (Cha), Heal (Wis), Knowledge (arcana) (Int), Knowledge (religion) (Int), Knowledge (nature) (Int), Profession (Wis), Spellcraft (Int), Spot (Wis)

Skill Points at Each Level: 2+ Int Modifier

Class Features

All of the following are class features of the ship theurge prestige class.

Weapon and Armor Proficiency: The ship theurge is proficient with all simple weapons but receives no additional proficiency with armor she is not already familiar with.

Spells Per Day: The ship theurge receives spells per day as if she had gained a level of a previous divine spellcasting class (the ship theurge must choose which class to gain a level in whenever this ability is gained). She does not gain any other benefits a character of that class would have gained (improved chance of turning or rebuking undead and so on).

+1 Focusing: The ship theurge gains an additional turning/rebuking attempt each day at this level. This attempt may only be used to pay the turning/rebuking cost for one of this class's special abilities (see below).

Airship Channel: The ship theurge is able to cast any of the *cure* spells (*cure light wounds*, *cure serious wounds*, etc.) on his airship, healing one-half the normal number of hit points as hull points. When determining the number of hull points healed, roll the dice normally and divide by one-half, rounding down. Each use of this ability requires the use of one of the theurge's turning or rebuking attempts for the day.

Divine Shield: Using this ability requires one of the theurge's turning or rebuking attempts for the day and the sacrifice of one of his hit points for each level he has in this prestige class.

When used, this ability provides a divine bonus equal to the theurge's levels in this prestige class to the airship's Fortitude or Reflex saves against the next spell that requires such a roll. The divine shield remains in place for one day, or until it is used.

Healing Current: Using this ability requires one of the theurge's turning or rebuking attempts for the day and the sacrifice of a number of hit points.

When used, the healing current ability sends a stream of divine energy through the frame of the airship. All crew members on the airship (as well as any officers or guests aboard the airship) automatically recover 1 hit point of damage per the theurge's levels of this prestige class each round that this ability is active. This ability does not heal the theurge, who suffers one hit point of damage per person healed each round until he chooses to discontinue it. This damage cannot be healed until at least one minute after this ability is ended. Those not wounded do not receive healing. If this ability would kill the theurge in any given round, it fizzles out instead.

Faith's Armor: Using this ability requires one of the theurge's turning or rebuking attempts for the day.

Faith's Armor provides a +1 divine bonus to an airship's Armor Class per level of this prestige class possessed by the activating theurge. This ability remains active for one round per level of this prestige class possessed by the activating theurge, who also suffers one hit point of damage per level of this prestige class during each round the ability is active. This damage may only be healed once this ability is no longer active.

Divine Ram: Using this ability requires one of the theurge's turning or rebuking attempts for the day and the sacrifice of one of his hit points for each level he has in this prestige class.

While active, this ability increases the damage of any ramming attack made by the airship by one point per level of this prestige class possessed by the activating theurge. In addition, the damage suffered by the ramming ship during a

ramming attack is reduced by the same amount. This ability remains active for one minute per level of this prestige class possessed by the activating theurge.

Sky Slayer

The sky slayer is a killer of the air. His skill at arms has earned him a reputation amongst the crews with which he shares the skies, and he is more than ready to show others that this reputation is well-deserved. Though quick to anger and even quicker to draw steel during leave time, a sky slayer is a consummate professional while on duty. He is not merely good at what he does—he thoroughly enjoys it and it shows in his rabid ferocity and cold efficiency.

Though there are groundling warriors who share a sky slayer's love of battle and his single-minded determination to become the best in his field, none of them have learned how to read the vagaries of the air or to use the motion of an airship to their advantage. While the sky slayer is decent in combat on the ground, he only really shines when he can move through the air, sliding around and above his opponents in an aerobatic dance of death.

Hit Die: d10

Requirements

Dexterity: 13+
Balance: 8 ranks
Tumble: 6 ranks
Jump: 6 ranks
Feats: Aerial Balance, Shot on the Run

Class Skills

The Sky Slayer's class skills (and the key ability for each skill) are: Balance (Dex), Bluff (Cha), Climb (Str), Craft (Int), Intimidate (Cha), Jump (Str), Profession (Wis), Spot (Wis), Tumble (Dex), Use Rope (Dex)

Skill Points at Each Level: 2 + Int Modifier

Class Features

All the following are class features of the sky slayer prestige class.

Weapon And Armor Proficiency: Sky slayers are proficient with all simple and martial weapons, but with no armor beyond that which they are already familiar with.

+1 Melee Attack Bonus: The first melee attack a sky slayer makes each round receives a +1 competence bonus, provided he is aboard an airship (or airborne) when that attack is made. This bonus is cumulative, increasing by +1 each time it is gained.

+1 Ranged Attack Bonus: The first ranged attack a sky slayer makes each round receives a +1 competence bonus, provided both he and his target are aboard airships (or otherwise in the air) when the attack is made. This bonus is cumulative, increasing by +1 each time it is gained. This bonus can be applied to airship weaponry.

Deck Fighting: A sky slayer knows how to use the motions of an airship to his advantage while fighting. He may make an opposed Bluff skill check (as a partial action opposed by his enemy's Sense Motive) against any target with which he is involved in melee combat. If this check succeeds, all the slayer's attack rolls receive a +1 circumstance bonus against the target during the following round, and the critical threat range of his weapon is increased by 1 for the first attack made during the following round against the target.

Component Breaker: If a sky slayer gets on board an enemy airship, it's all over for them. A sky slayer understands how to do the most damage to airship components in the least amount of time. The hardness of all components is reduced by 2 against any melee attacks made by a sky slayer.

Officer Sniper: The sky slayer is skilled at locating and attacking the officers of other airships from the deck of his own airship. By making a Search skill check (DC 20) he is able to locate any single officer on the deck of any one airship within 200 feet of his current location. If he makes a ranged attack against the detected officer (using his own weapons, not those of an airship), he receives a +4 insight bonus to the attack roll.

Knock Overboard: When a sky slayer scores a critical hit against a target in melee combat, he may choose to push that target back rather than inflicting additional damage. The target must be no more than one size larger than the slayer, who must be using a weapon that is at least medium in size. To knock the opponent back, make an opposed Strength check, to which the slayer may add one-half the damage dealt by the attack itself. If the slayer succeeds, his opponent is pushed back 5 feet. If this moves the target off the deck of an airship, he is not allowed a desperation grab (See Chapter 4: Airship Combat for more information).

Swooping Death: Any critical threat the sky slayer causes while attacking from the rigging does not have to be confirmed. In addition, against any target with 5 fewer levels or hit dice than himself, the slayer's critical threat range is doubled when attacking from the rigging.

Table 8.4—Sky Slayer Progression

Class Levels	Base Attack Bonus	Fort. Save	Ref. Save	Will Save	Special
1	+1	+0	+2	+0	Deck Fighting
2	+2	+0	+3	+0	+1 melee attack bonus
3	+3	+1	+3	+1	Component Breaker
4	+4	+1	+4	+1	+1 ranged attack bonus
5	+5	+1	+4	+1	Officer Sniper
6	+6	+2	+5	+2	+1 melee attack bonus
7	+7	+2	+5	+2	Knock Overboard
8	+8	+2	+6	+2	+1 ranged attack bonus
9	+9	+3	+6	+3	+1 melee attack bonus
10	+10	+3	+7	+3	Swooping Death

Magic in the Air

Spells are an integral part of the airship experience. Without magic, the airship doesn't fly, and without spells, most pilots and navigators would have a much more difficult time doing their jobs. In this chapter, you will find information on how existing spells can be used in conjunction with airships and how they can affect aerial movement and combat. At the end of the chapter, a selection of new spells and magical items can be found.

Existing Magical Spells

New uses for existing magical spells are listed below. The name of the spell is listed in the heading and, unless otherwise specified, all other aspects of the spell remain the same. The information found in this section should be regarded as an expansion of the effects of the spells, or in some cases, simply further explanation for ways in which existing effects interact with airships.

Acid Fog: Once cast, the fog cloud remains in the square into which it was cast, even if an airship passes through the cloud. The pilot of any airship that begins a round in a square affected by the acid fog spell suffers a -1 circumstance penalty to any Piloting skill checks made during the round.

Any airship of size medium or smaller loses 10 mph of speed each time it passes through the *acid fog's* area of effect. Larger airships are not affected by the acid fog in any way, though the pilots of such vessels do suffer the penalty listed above. While normal weapons suffer the standard penalties to attack and damage rolls against any airship passing through, or within, the spell's area of effect, shipboard weapons suffer no such penalty (though those firing them may be hindered by the inability to see targets).

Acid fog causes its normal damage to all crew members on the deck of any airship that passes through the *acid fog's* area of effect at a speed of 20 mph or less.

Air Walk: Any creature affected by this spell may suffer extreme damage from high winds. When caught in winds stronger than 20 mph, the affected creature must make a Balance check (DC equal to 15 + 2/10 mph of the wind) or be tumbled over. Tumbled creatures must spend a full-round action recovering their equilibrium before they may take any other actions.

If the winds are faster than 50 mph, the affected creature must make a successful Fortitude save, or suffer 1d6 hit points of damage for every 10 mph of the wind's speed over 50 mph.

Creatures standing on the deck of an airship while affected by this spell are treated as if exposed to wind traveling at the airship's current speed. This makes it an ideal spell for incapacitating an enemy crew member—a pilot targeted by this spell will be unable to take any action during any round in which he is tumbled, which is quite likely to occur during fast-moving airship combats.

Animate Objects/Animate Rope: When cast on the rigging of an airship, these spells can either have a positive or negative affect. If intended as a boon, the airship's rigging becomes much more responsive to the needs of the pilot, providing a +1 circumstance bonus to any Piloting skill checks made by the pilot of the affected airship while the spell is active.

If cast maliciously, the airship's lines tie themselves into knots, tangle around the legs of sailors, and otherwise create havoc. This inflicts a -2 circumstance penalty to any Piloting skill checks made by the affected airship while the spell is active.

Antilife Shell: Any creature which impacts this shell while flying or on the deck of an airship suffers 1d6 hit points of damage (regardless of speed, as the shell has some give) and has its speed reduced to 0 immediately.

Antimagic Field: If the engine of an airship is caught in a field of this type, it is stopped while within the field. Rigid and semi-rigid dirigibles are unaffected. A stopped engine immediately resumes functioning when the *antimagic field* is removed, though the airship must regain speed normally.

Augury: The navigator of an airship can use this spell to verify his course for the day. This spell can only be used once per day for such a purpose, as additional questions about the plotted course are treated as if the same question were asked twice. When the spell is used to verify a course, the navigator receives a +4 insight bonus to his first Navigation skill check, provided that skill check occurs within one half-hour of the time the spell was cast.

Banishment: This spell can be used to cripple an elemental engine by sending the elementals trapped within it back to their home plane.

Clenched Fist/ Crushing fist: While the hand can be used to attack normally, it can also be used to prevent the use of shipboard weapons or to snarl the rigging and sails of an enemy airship. If directed to grab a shipboard weapon, the hand can prevent the weapon from being aimed—the crew of the weapon can attempt an opposed Strength check against the Hand (Strength 33, or 35 for a crushing hand), but are unlikely to be able to wrest it free from the magical fist.

When directed against the sails or rigging of the airship, the clenched fist is able to impose a -5 circumstance penalty to all piloting checks against Tiny airships, but this penalty is reduced by 1 for every size category larger than Tiny. When the Crushing hand is used, this penalty begins at -7 for Tiny airships and is reduced by 1 for every size category larger than Tiny.

Interposing Hand: If this spell targets an airship, the pilot receives a -1 circumstance penalty to all Piloting checks required if he attempts to turn toward the hand. Also, if a shipboard weapon is targeted by this spell, it is unable to fire in a 90-degree arc centered on the caster of the spell.

Blade Barrier: This spell can be cast into the air where it remains in position for its full duration. The pilot of any airship traveling through a square containing a *blade barrier* must make a successful Piloting skill check (DC 20) to avoid the barrier. The pilot suffers a -1 circumstance penalty to this check for every size category his airship is larger than Medium.

If the check succeeds, the airship avoids the *barrier* with no ill effect. If the check fails, 50% of the time the airship impacts the *barrier*, otherwise the *barrier* slides along the deck, wreaking havoc with the crew.

If an airship impacts the *blade barrier*, it suffers normal damage from the barrier, but its Hardness is reduced by 1 point for every full 20 mph of its current speed for purposes of resolving damage.

If the *blade barrier* slides across the deck, 5d10% of the crew on deck slide through the *barrier* and suffer damage as normal.

Blasphemy: This spell can be used to banish or kill the elementals in an elemental engine, much the same as the *banishment* spell.

Bless Weapon: This can be used on shipboard weapons, just as standard weapons.

Break Enchantment: This spell, if successfully cast, can free any creatures imprisoned in the engines of an airship. This allows the creature to act as they wish, which is often violent, and involving a great deal of damage to the airship.

Call Lightning: If cast within a cloud or storm front, this spell causes an additional 2d10 hit points of damage to any target within the same cloud or front.

Cloudkill: The poisonous vapors created by this spell drift earthward if cast while airborne. The vapors spread out to the limits of the spell, then begin dropping 50 feet (one altitude band) per round until they reach the ground. If any airship passes through the drifting cloud, all exposed crew members (those on deck) are affected by the spell.

Commune With Nature: A navigator who uses this spell can instantly identify his location on any chart he possesses. If the navigator is lost, he immediately knows this fact and is able to begin correcting his course.

Confusion: This spell is most often used against airmen in the rigging of an enemy airship or the crews of shipboard weapons. Any target of this spell that wanders has a 30% chance each round of simply wandering off the boat or falling out of the rigging, and suffers damage accordingly. *Confused* creatures attacked by shipboard weapons do not automatically target the crews of those weapons or airships during the next round as they are unable to really understand what has happened.

Control Weather/Control Wind: These spells are often used to either aid an airship (by providing either a steady wind or a thermal) or to hinder a pursuing or attacking vessel. The conditions caused by this spell behave exactly as natural effects, and are detailed in Chapter 5: Travel by Air.

Darkness/Deeper Darkness: These spells are often cast on ballista bolts or catapult shot, which are then coated in clay. The clay blocks the effects of the spell, allowing weapon crews to load and handle them without being blinded. When the clay-coated weapons strike a boat, the clay is shattered, and the *darkness* immediately takes effect.

Delayed Blast Fireball: The battle wizards of military airships favor these fireballs, as they allow the target to drift some distance before the *fireball* detonates. When cast at an enemy airship, the bead of power remains on the deck until the delay time has expired, during which time the airship is likely to be moving. When the delay expires, the *fireball* detonates.

Demand: This spell is useful for making an enemy pilot do something very, very stupid or very, very dangerous. If the pilot fails his saving throw, he can be ordered to drive into dangerous winds, to cut the engines of his airship, or to perform some other stunt that leaves the airship in a precarious position.

Dictum: This is another spell useful for banishing elementals within elemental engines. Commandos who wish to cripple a ship without immediately destroying it favor the *dictum*.

Disintegrate: This powerful spell is one way to severely damage an enemy airship. A 10-foot cube is exactly one ton on an airship. Besides losing the material, the airship loses one ton of hull points (see Table 1.3). If the airship makes its Fortitude save, the it suffers 5d6 points of hull damage, which is not reduced by its hardness.

Dismissal: Another spell that is commonly used against ships with elemental engines, *dismissal* is able to simply send the elementals back to their home, sending the affected airship plummeting to earth.

Dispel Magic: While this spell seems as if it could spell the end for any airship it affects, this is rarely the case. For starters, most of an airship is not magical—unless a component specifically notes that it is magical, it is not affected by *dispel* magic in any case. The size of an airship makes it unlikely that an area *dispel* catches more than a single item in its area of effect, forcing spellcasters to use targeted *dispels*. Because even the magical components of an airship are items, not simply spells, they are only suppressed by a *dispel magic* and therefore regain functioning in 1d4 rounds. Given the level of the spellcaster required to create an engine or most other components, it is unlikely that even a targeted dispel affects the airship's components.

Divination: Navigators love the *divination* spell, because it allows them to verify their navigational choices for the day. If this spell is cast after a Navigation skill check is made, the airship navigator can immediately discover if he has made the correct choice. If the *divination* reveals an improper change in course, the navigator is allowed a second Navigation skill check against the same DC, with a +5 insight bonus. No more than one *divination* attempt may be made concerning a single Navigation skill check.

Enlarge: Small ships, or those ships that need to conserve space for cargo, often stock their ammunition for catapults and ballista with smaller versions, sometimes as much as 50% smaller. Then, when the ammunition is needed, the spellcaster uses *enlarge* to bring the bolts or boulders up to the appropriate size and the crew loads them up.

Entropic Shield: This spell provides its normal protection against shipboard weapons.

Black Tentacles: When cast upon the deck of an airship, this spell can create a great deal of confusion and kill a large number of the crew. Favored by pirates because of its ability to kill crewmen without damaging the airship, this spell is memorized by most shipboard wizards and sorcerers, if only to have it ready to counter its hostile use.

Faerie Fire: Spellcasters most often use this spell to illuminate officers of enemy airships, or enemy spellcasters, allowing their allies to focus their attacks on important members of the opposing crew. Combined with *scry* or *clairaudience/clairvoyance*, this spell gives a spellcaster the ability to pinpoint their enemies with great accuracy.

Fear: Even more deadly when cast in the air than on the ground, *fear* has a 20% chance of causing a creature to leap overboard if it is on the edge of the deck. Given its cone effect, this spell can devastate an enemy airship's crew, or drive them all away from the ship's weapons, making it a potent tool in any airship captain's arsenal.

Feather Fall: All spellcasters aboard an airship are expected to keep this spell memorized, and many have wands charged with the spell. Useful for saving falling crew members, feather fall is also used frequently as an attack.

Up to three medium-sized creatures can fit into the cup of a standard catapult, though they are only thrown one-half the normal distance of a standard catapult shot because they tend to flail and flop about when fired. If *feather fall* is cast upon these creatures, they can float down onto the deck of an enemy airship, allowing them to board it quickly. It is not uncommon for pirates to open with this sort of attack, flinging a band of raiders into the air, and then launching a flurry of ballista shots to soften up the enemy crew. Such raiders then storm aboard and kill the crew or, if things are going badly, attempt to loot what they can before throwing themselves overboard to be picked up later.

Fireball: Fire is a devastating force on an airship, and *fireballs* are doubly so for their explosive nature and ability to set flammable items alight. For all their effectiveness, *fireballs* are not commonly used, except in military campaigns where the destruction of an enemy airship is more important than its capture.

Firestorm: This spell creates a swath of devastation, but has the advantage of not burning the airship onto which it is cast. Most often, the firestorm is targeted on the deck of a vessel so that it burns the crew. It can also be cast into the air in front of an airship, forcing the vessel to detour around the blazing fire or risk incinerating its airmen.

Fire Trap: Rarely used in the air, *fire traps* are sometimes put to use guarding the latches on a covered airship.

Flame Strike: Another effective anti-personnel spell, *flame strike* can wipe out an enemy crew in short order, but does not run the risk of setting their airship on fire. This also allows the spell to be used defensively to repel boarders.

Flaming Sphere: Combined with catapulted jugs of pitch or other flammable oils, *flaming spheres* can be used to set fire to enemy ships, or simply to harass their crews.

Flare: Most often used as a signaling device, *flares* launched from the deck of an airship can be seen by any airship within 20 miles.

Fly: Don't leave home without this spell—it's the only reasonable way to conduct aerial combat if you are not on the deck of an airship. Crack squads of archers are often the targets of *fly* spells, allowing them to soar ahead of an enemy airship and pick off any officers they see, or to harass enemy spellcasters.

Fog Cloud: This is treated as thick fog, per Chapter 5: Aerial Overland movement. The cloud remains in the square in which it was cast, and obscures the vision of any vessel within the square or having a line of sight through the square.

Forbiddance: The ultimate method for keeping boarding parties off an airship, *forbiddance* can easily ward an entire ship from invasion. Given its permanent nature, this spell is cast often to protect the investment represented by an airship, and merchants pay quite well for any spellcaster willing to ward their vessels.

Foresight: When cast upon the pilot of an airship, this spell provides a +2 insight bonus to any Piloting skill checks or Reflex saves necessary for the airship to avoid damage from an enemy attack or aerial maneuver.

Gaseous Form: When used in very windy weather, this spell can be dangerous. Gaseous creatures might suddenly find themselves blown overboard when heavy winds kick up—and they will, given the ability of so many airship spellcasters to cast *control wind*.

Glyph of Warding: Blast glyphs are commonly inscribed on the railing of airships as a means to repel intruders.

Grease: This spell is deadly when cast on the deck of an enemy airship. Any creature that slips (that is, fails its Reflex save against this spell) within 5 feet of the edge of a vessel or a gangplank must immediately make a Balance check (10 + 1/10 mph of the airship's speed) or fall over the edge. Railings on the airship provide a +5 circumstance bonus. If a ship heels over while its deck is *greased*, any creature that slides through the affected area automatically falls overboard.

Hallucinatory Terrain: Clever spellcasters often use this spell to make the tops of mountains or other obstructions disappear. While the area affected by the spell is not enormous, it can be enough to convince an enemy Pilot to crash his airship into the side of a cliff or onto the slopes of a mountain.

Helping Hand: Most often used in airborne rescues, this spell helps stranded flying creatures to find their way back to their airships. After heated battles, it is not uncommon for several flying creatures to be left behind, and this spell helps recover those who might otherwise be lost.

Ice Storm: Note that the hail created by this spell is powerful enough to cause damage to exposed crew members, but does not cause any damage to vessels passing through its area of effect.

Know Direction: This spell provides a +4 circumstance bonus to any dead reckoning Navigation skill checks made during its effect.

Make Whole: This spell is not able to repair all the damage done to an airship, but it can repair some hull points, up to 2d8 + the caster's level per casting.

Mending: While not as effective as *make whole*, the *mending* spell can repair 1d4 hull points per casting.

Mirage Arcana: Pirates love to use this spell to conceal their ships within banks of illusory clouds. When their prey stumbles into the area, the pirates launch from their hidden locations to crash down upon their enemies. *Mirage Arcana* is also used by spellcasters to tactically separate enemy vessels from one another with thick clouds of fog that prevent communication and coordination.

Prismatic Wall: This spell can be cast so that it hovers in midair and creates a hazard for airships flying through its square. The pilot of any airship passing through the square occupied by the *prismatic wall* must make a successful Piloting skill check (DC 15) to avoid the wall. If the airship does not avoid the wall, it simply slides through it, with all exposed crew suffering the *wall's* effects.

Programmed Image: Military and merchant houses often use this spell as a way to guide airships through hazardous areas. The images are programmed to appear when a password is shouted. Once activated, the image presents navigational information and guidance to the crew of the airship. This provides a +5 insight bonus to any Navigation skill checks made for the next 8 hours following the activation of the image.

Project Image: Airships often insist their spellcasters take this spell, which allows them to create shadowy duplicates of themselves on the decks of enemy ships. These duplicates then cast spells to cause maximum damage against the crew of the ship, leaving it ripe for boarding.

Protection from Arrows: This spell not only protects from the danger of normal-scale ranged weapons, it also removes the automatic critical hit factor of ship-based weapons. Though a character still suffers a lot of damage from such an attack, he does not have to fear instant death from a lucky ballista shot.

Pyrotechnics: This is a favorite of airship sorcerers charged with creating confusion on enemy vessels. The caster either waits for an enemy weapon crew to light a ballista or catapult ammunition (this requires a Spot check DC 10 + 1 per 50 feet of distance between the caster and the crew) and then casts the spell, or charges the archers of his own ship with launching a few flaming arrows onto the enemy deck. The smoke or blinding light is enough to disable much of the

crew on a deck, allowing the caster's allies to capitalize on the confusion. The spell can also be used to put out a fire on one's own vessel.

Quench: Druids often find work on military airships for this spell alone. The ability to suddenly and completely extinguish any fire in a given area is so useful that airship captains are happy to have anyone aboard who can cast the spell.

Rainbow Pattern: This spell is excellent for stopping boarding crews. The caster simply drops the pattern somewhere along the boarding ramp's length and, even if not all of the boarders are affected by it, those who are affected block the progress of their fellows. Cruel wizards cast this spell, then order the boarding plank overturned to send the captivated boarders to a hurtling death.

Telepathic Bond: This spell is often used prior to combat to allow captains to converse with the captains of allied airships and their own crews.

Repel Metal or Stone: Another favorite of airborne druids, this spell allows the repulsion of flying boarders or enemy warriors who are charging up boarding planks or down drop lines. It can also be used to quickly clear the decks of enemy fighters, who are roughly shoved back and over the railing.

Repel Wood: This spell is a powerful way for druids to quickly shove boarding planks away from their airships. A single casting of the spell is often enough to blast the boarding planks away from an entire side of the airship, allowing the druid to not only keep boarders from gaining the deck of his airship, but also likely throwing several boarders to their death as their planks are tossed into the void. Characters within 10 feet of the edge of the plank can make a desperation grab (see Chapter 4: Aerial Combat, for more information).

Repulsion: Yet another spell useful for keeping boarders off an airship, *repulsion* is most often used as a *protection from* spell.

Reverse Gravity: While this does not affect airships in any way, the *reverse gravity* spell can be used to hoist the crew of an airship off the deck. Because airships move so rapidly, this often leaves those affected by the spell falling high into the sky with no airship below them. This spell is a primary reason why *arcane tethers* were created (see new magic items below).

Scrying: Another powerful tool for keeping tabs on the officers and crew of an enemy ship, the *scrying* spell allows a wizard to immediately report to his own captain or officers what the plans of their enemies are at any given moment. This provides the captain and pilot with a +2 insight bonus to any skill checks that are opposed by the enemy's officers. If both sides in a battle are using the *scrying* spell to keep tabs on each other, these benefits still exist, but are canceled out because both sides in the battle gain the same bonus.

Sculpt Sound: The effects of this spell can be powerfully disrupting to the officers of an enemy airship. While the spell is in effect, all officer skill checks (including Piloting or Navigation) suffer a -1 penalty during airship combat as none of the officers can make sense of what the others are saying.

Shout: Used as a way to temporarily deafen enemy crews (so they cannot hear the commands of their officers), this spell is also useful as a way to signal one's allies. The shout can be heard up to one mile from its origin during calm weather, but the range is reduced quickly by high winds or bad weather.

Silence: Yet another spell used to prevent a captain or other officer from talking to his crew, *silence* is also used to prevent enemies from hearing boarding attempts coming from below the boat or the sound of an enemy assault boat dropping down from above an unsuspecting merchant vessel.

Sleep: Perhaps the most effective way to stop a boarding party is simply to make them all fall asleep. Creatures on a gangplank or dropping down a boarding line when affected by this spell immediately fall if they fail their saving throw—*sleeping* creatures aren't known for their balance.

Sleet Storm: If an enemy airship passes through the area of effect of a *sleet storm*, it's rigging becomes slick, as if it had passed through a severe storm. See Chapter 5: Aerial Overland Movement.

Solid Fog: While this affects creatures as normal and blocks line of sight, it is not powerful enough to fully stop an airship. Any airship passing through a solid fog suffers a reduction in speed of 10 mph an hour for every 50 feet of the fog it passes through in a given round.

Spider Climb: When ships pass near one another, airmen with this spell cast upon them are able to leap from one ship to the side of another without fear of falling to their doom. Once attached to the surface of an enemy airship, an airman is then able to move around on the outside of the ship and cause all manner of trouble, from sabotaging the rudder to mangling the exhaust vents of the ship's engine.

Stinking Cloud: The cloud created by this spell does not drop in altitude, but hangs in the same square in which it was created.

Telekinesis: This spell is used to lift enemy airmen off their decks and drop them to the ground below, but can also be used to move boiling oil over an enemy airship or to transport boarders to an airship's deck.

Unhallow: Evil ships often use this spell to give them an edge should anyone attempt to board their vessel.

Unseen Servant: The *unseen servant* can take the place of a single crewman for a shipboard weapon. The *servant* does nothing more than load the weapon, over and over, allowing the other crewmen to focus on the task of aiming and firing the weapon.

Wall of Fire: Another excellent way to prevent boarders is to cast a *wall of fire* over their boarding planks or into the area in which they are attempting to land. This wall can be placed at the edge of a deck so that its heat washes away from the vessel, but any other placement may result in a fire breaking out on the deck. The *wall of fire* may also be summoned into the air, floating as a curtain of deadly sparks.

Wall of Ice: This spell is sometimes used to form quick and dirty gangplanks that can be crossed. Of course the surface of a wall of ice is treated as if affected by the *grease* spell if anyone attempts to cross or fight upon it. Wearing ice cleats can counteract this problem.

Wall of Iron: A *wall of iron* can be used to crush boarders as they leave their gangplank, and it is sometimes also used to crash through gangplanks (a *wall of iron* summoned onto a gangplank certainly cracks the plank in half unless it is specially reinforced). More commonly, the *wall* is used to block off areas of a deck during combat, protecting those behind it from arrows and other line of sight attacks.

Web: While difficult to time properly, a spellcaster who makes a Spellcraft check (DC 20) can ready an action until such a time as two airships are close enough together for a *web* spell to stick the two of them together. If this is successful, the spell is cast and counts for 5+1d4 grapples attached to the airship. The enemy airship continues to move, but its speed is reduced by 10 mph per grapple equivalent of the web spell. If this is not enough to stop the airship completely, it has torn free of the web.

Whirlwind: The cyclone created by this spell has a speed of 150 mph and creates difficulties for airship navigation within its area of effect just as a natural wind of this speed, in addition to its other effects.

Wind Walk: This spell is sometimes used by clerics to move from one airship to another, but the risk of being caught in a windstorm makes it unsuitable for use during military maneuvers. For every 10 mph of the surrounding wind speed, creatures using this spell suffer 1 hit point of damage, which increases to 1d6 hit points of damage for every 10 mph above 60.

Wind Wall: Airships traveling through this wall are treated as if hit from the side by a wind of 80 mph, in addition to any other effects the spell causes.

Wood Shape: This is another spell that is perfect for wrecking boarding planks and other structures. One casting of this spell can curl a plank into a useless ball, sending it and its boarders crashing to the ground below.

New Spells

The spells in this section were specifically developed for use aboard airships, though many are also quite useful while on the ground. Any spellcaster worth his fee is going to know at least a few of these spells, or he probably won't have much place on an airship.

Becalm

Abjuration
Level: Air 4, Drd 3, Sor/Wiz 4
Components: V, S
Casting Time: One round
Range: Touch
Target: One airship of up to 10 tons per caster level.
Duration: Concentration
Save: No
Spell Resistance: No

When cast, this spell shields a single, touched airship from the destructive forces of the wind, forming a pocket of perfectly still air around the vessel. This protects the airship from any dangers posed by the wind and provides a +1 circumstance bonus to any Profession (Airship Pilot) skill checks made for the duration of the spell. Note that this also prevents the airship from taking advantage of thermals or lifts, a tradeoff most captains are only too willing to make.

This spell only persists as long as the caster concentrates upon maintaining it, however. Any lapse in concentration collapses the pocket of air and subjects the airship to the ravages of the winds once again. If the caster is ever removed from the airship, this spell ends as well, as the connection between the magic and its caster must be maintained.

Call Thermal

Conjuration (Creation)
Level: Air 5, Drd 5, Sor/Wiz 6
Components: V, S, F
Casting Time: 1 minute
Range: Long (400 ft. + 40 ft./caster level)
Area: 200 ft. diameter circle per caster level
Duration: 10 minutes per caster level
Save: None
Spell Resistance: No

This spell conjures an artificial thermal centered at any point designated by the caster within the spell's range. The area covered by the spell dictates the thermal's size at its upper end. As a thermal's diameter at any given point is always equal to the point's elevation, this also dictates how high the thermal rises. For example: Yaro is a 15th-level wizard and decides his airship needs a lift. He can create a thermal that is 3,000 feet across, which means the thermal is also 3,000 feet tall.

An airship caught in the area of the called thermal is treated as if it had just entered the thermal (see Chapter 5: Aerial Overland Travel, for more information).

Material Focus: A bit of dark colored stone.

Earthen Conversion

Transformation
Level: Drd 5, Earth 6
Components: V, S, DF
Casting Time: 1 action
Range: Touch
Target: One Ballista Bolt
Duration: 1 round/level
Save: None
Spell Resistance: No

This spell imbues a ballista bolt with a strong connection to the earth and a powerful antipathy for the air. Any airship struck by the affected bolt, while the spell is active, immediately increases in tonnage by an amount equal to its current speed (in MPH) divided by 10. The power of the bolt actually transforms velocity into mass, eschewing the air while attempting to drag the airship it affects closer to the earth.

This increase in tonnage vanishes as soon as the spell's duration ends, but it can be devastating when targeted against small vessels (with small engines) or those airships that are already stretching the limits of their engines.

If the tonnage of an airship is ever increased beyond the power factors of its engine, it immediately begins to fall toward the earth at a rate each round equal to one altitude band per ton by which the airship's tonnage exceeds its engines' power factors. If the bolt is somehow removed from the ship, the effect ceases.

Engine Jolt

Transformation [Electricity, Fire, Force]
Level: Sor/Wiz 3, Travel 3
Components: V, S
Casting Time: 1 action
Range: Touch
Target: One airship engine
Duration: One minute per level
Save: None
Spell Resistance: No

Used to eke every last bit of performance out of an engine, this spell infuses the magic used to create the engine with a sudden spike in power. The engine immediately suffers 1d10 hull points of damage, but also gains double this amount in lift factors as it strains to its utmost.

While this spell cannot be used often, its judicious application can help an airship escape pursuers or to temporarily overcome the effects of spells such as *earthen conversion*.

Harvest of the Winds

Conjuration (Calling)
Level: Brd 2, Clr 2, Drd 2, Rgr 2, Air 2
Components: V, S, M
Casting Time: Ten minutes
Range: Personal
Area: A 10 sq. mile area.
Duration: 1 hour
Save: None
Spell Resistance: No

The caster of this spell calls to himself all the birds of the air in the spell's area of effect. These birds arrive, land in a circle around the caster, and then allow themselves to be killed. If the birds are not killed by the end of the spell's duration, they return to the sky and are otherwise unaffected by the spell. Only natural birds having no more than one hit die each are affected.

If this spell is cast while on land, it calls enough birds to the area to feed 1 human per caster level for one day. If cast on an airship moving at 10 mph to 30 mph, it calls enough birds to the airship to feed 10 humans per caster level for one day. Note that if this spell is cast on an airship traveling more than 30 mph, the birds of the area simply cannot keep up with the airship and are not able to land to be eaten.

Material component: A handful of breadcrumbs, which are thrown into the air as the spell is cast.

Pyrrhic Withdrawal

Evocation [Death, Fear, Fire, Force, Teleportation]
Level: Clr 9, Destruction 9, Sor/Wiz 9, War 9
Components: V, S
Casting Time: 1 minute
Range: Touch
Target: One airship, which the caster must be aboard
Duration: Instantaneous
Save: Fort partial (see text)
Spell Resistance: No

This last-ditch spell is used to utterly destroy an airship (and its crew) while enabling the officers and other important passengers to escape. To cast this spell, the caster must be in physical contact with the airship's engine, which serves as the catalyst for the spell. When the spell is cast, the energy contained within the engine is turned into a horrific maelstrom of swirling energy and fire that sweeps out to destroy everything in its path.

For every power factor of the engine used as the catalyst, this spell causes 1d10 hull or hit points of damage to every airship or creature within 100 ft. per caster level. Note that this spell does not create a globe of energy, but a disc that only affects creatures and airships in the same altitude band as the caster. A Fortitude save allows creatures and airships to resist half of the damage from this spell.

As the blazing ball of fire and force rips out of the airship engine, the caster and up to one other creature per caster level are whisked away to any familiar location on the same plane.

Raptor's Wings

Enchantment [Force]
Level: Sor/Wiz 3
Components: V, S
Casting Time: 1 action
Range: Medium (100 ft. + 10 ft./caster level)
Target: One Airship of up to 10 tons/caster level
Duration: 1 minute/caster level
Save: None
Spell Resistance: No

When maneuverability is needed, this spell can be the key to success. The targeted airship receives an immediate +2 increase to its maneuverability and is able to make an additional turn during each round in which it also descends by at least one altitude band.

For the duration of the spell, large, semi-opaque wings seem to sweep back from the sides of the airship at regular intervals.

Storm Prow

Abjuration [Electricity, Force]
Level: Clr 7, Drd 6, Sor/Wiz 6, War 6
Components: V, S
Casting Time: 1 round
Range: Close (25 ft. + 5 ft./2 caster levels)
Target: One airship up to 10 tons per caster level
Duration: 1 minute/caster level or until discharged
Save: None
Spell Resistance: No

Calling upon the power of lightning, this spell sheathes the prow of the target airship with a crackling field of electricity. If this airship makes a successful ram attack while the spell is active, it inflicts an additional 1d4 hull points of electrical damage per caster level to the struck airship. However, the ship upon which *storm prow* was cast also suffers 1 hit point per caster level as the electricity blasts away from its prow with a deafening, thunderous blast.

Magical Items

While airships are, themselves, items of wondrous magical power, there are items of lesser power that are also quite useful to airmen and others who make their living in the skies. This section presents a small collection of magical items for inclusion in any aerial campaign.

Arcane Tethers: While tool tethers and the airman's harness are all fine and good, there are many airmen who feel uncomfortable with all of that equipment strapped to their bodies. Those who come from a sailing background, in particular, are very leery about the weight of the safety harness and the restrictions of the safety line. Arcane tethers were made to combat such resistance to safety gear. No more intrusive than wearing a ring, the arcane tether is designed to prevent fatal falls while allowing airmen freedom of movement.

If, while wearing an arcane tether, an airman falls more than 2 feet, the tether immediately triggers. At this point, the airman begins descending toward the deck at the rate of 20 feet per round. If the airman is still airborne after the initial descent, he may choose to increase his altitude by 20 feet per round, but may never rise higher than the altitude from which he fell.

More importantly, the arcane tether pulls the wearer toward the deck of the boat to which it is attuned. For every 20 feet by which the airman descends, he moves 10 feet closer to the deck of the airship. If he descends lower than the current altitude of the airship, the airman begins ascending 20 feet each round, and also moves 10 feet per round nearer to the deck of the airship. The tether always keeps an airman moving at the exact same rate as the ship to which he is attuned.

When an arcane tether is created, it is attuned to an airship and only operates while it is within 500 feet of that airship. This allows airmen to use the tethers to move from airship to airship, but prevents them from high-tailing off with the ring and selling it. Unfortunately, this also means that any airman whose airship moves more than 500 feet from his current location begins falling at his normal rate of speed as the ring ceases to function.

Caster Level: 3rd; *Prerequisites:* Forge ring, *levitate*; *Market Price:* 5,000 gp

Incense of Navigation: When lit, this stick of incense creates a colorful, surprisingly wind-resistant plume of smoke. If concentrated upon for a full round, this smoke begins wafting in the direction of any single destination familiar to the individual concentrating upon the smoke. If this smoke can be seen by a pilot, he is able to follow the smoke to the selected destination. Once the destination is chosen, it cannot be changed.

Incense of navigation may not be extinguished and relit at a later time—once it begins emitting smoke it either burns for 8 hours or until extinguished. In either case, the incense becomes nonmagical and ceases to function.

Caster Level: 7th; *Prerequisites:* Craft Wondrous Item, Extend Spell, *locate creature, locate object*; *Market price:* 1,925 gp; *Weight:* 1 lb.

Lightning Canister: Fired from lightning bombards, this cylindrical container is most often marked with all manner of warning symbols, especially around the slightly rounded clay top. A small ring marked with regularly-spaced runes encircles the canister near the bottom. The weapon crew uses this ring to calibrate the canister to detonate at a certain distance from where it is fired.

When fired from a lightning bombard, the canister becomes super-charged and able to produce a much greater blast than it would otherwise be capable of generating (see Chapter 1: Airship Construction for information about Lightning Bombards).

Sample Airships

In this chapter, you will find a selection of airships and deck plans for use in your campaign. These represent only the tip of the iceberg as far as the types of airships that can be constructed, but are useful models for airships of different sizes and purposes.

Note that a ship's tonnage measures its enclosed volume; most ships have additional deck space that can be used to store cargo and other items. This deck space is open to the air, and items stored here must be secured to the deck, and are exposed to the wind and weather. Available cargo and deck space has been calculated and noted for each ship.

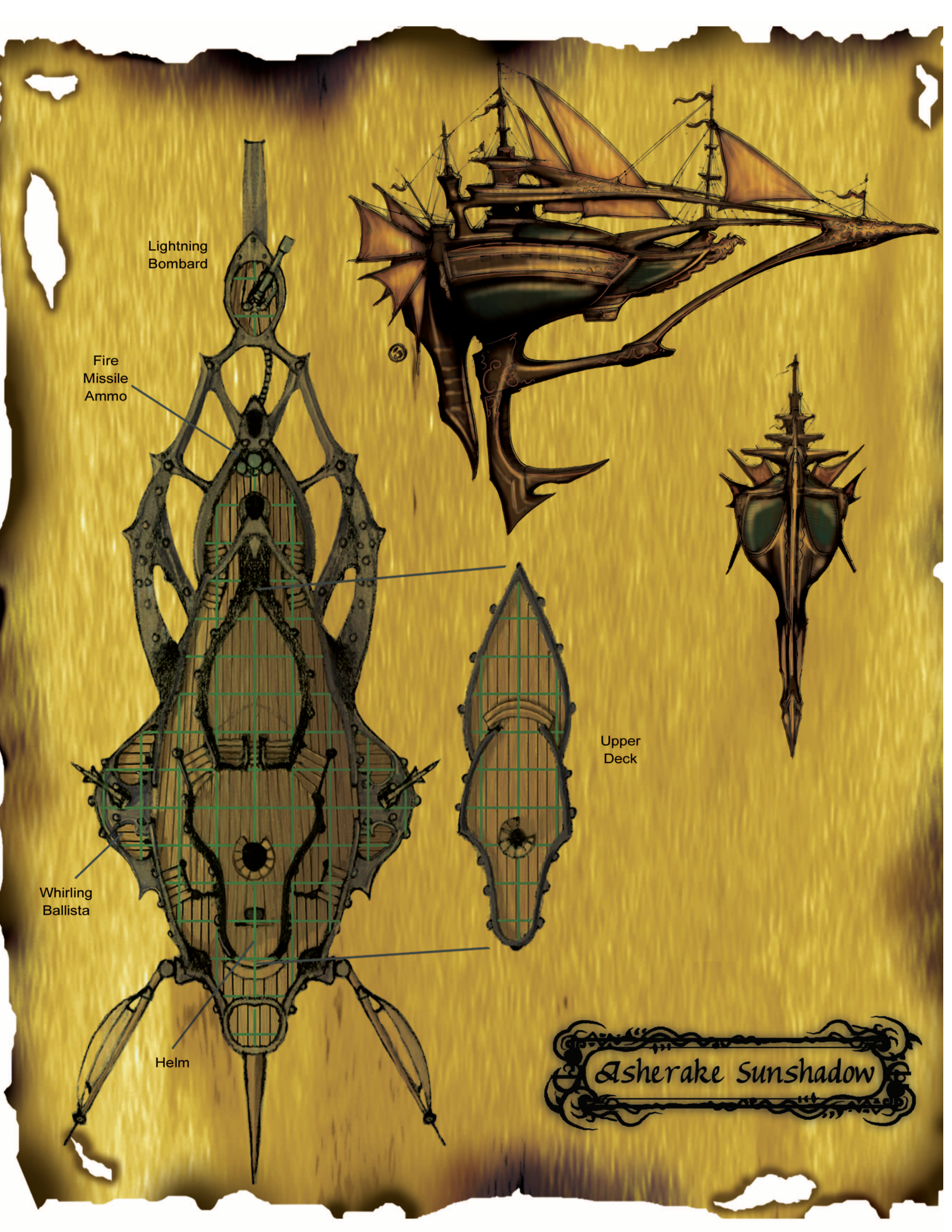
A Note On Costs

The costs for these airships are those you would pay if you purchased them preconstructed from a shipyard. If you would like to add other preconstructed airships to your campaign, simply disregard labor costs and pay the market value for all items. For example, a 75 ton hull made of wood costs 37,500 gp. Preconstructed airships are sometimes cheaper than airships constructed to specifications, as they can be built from existing hull forms and plans.

Each ship comes preloaded with minimal ammunition. Catapults, ballistae, and fire throwers have 20 shots each. Razor launchers, lightning bombards, and dart launchers have 10 shots each. Fire missiles have only two shots each. Additional ammunition may of course be purchased at the standard prices. This minimal ammunition supply is small enough in size that it is not counted against the ship's cargo capacity. The ammo is tucked away here and there nearby the weaponry. If more ammunition is purchased, storage space must be provided for it.

Some of these ships are not armed. It is easy to convert them to military use by simply adding weapons. In general, one airship weapon takes up 1 open ton of deck space. Just add the weapon to the deck, and then add weapon's price and crew usage to the ship's totals.

Additional ship plans and extra materials for ***Airships*** are available as a free download at the Bastion Press website.


Lightning Bombard
Fire Missile Ammo
Upper Deck
Whirling Ballista
Helm
Asherake Sunshadow

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain
Glory	Sunshadow	Asherake	Von Herring

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed
18	M	5	7	42	92 mph

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates
Wood	5	150	10	+5	+5	None

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price
0	11	20	11	155,620 gp

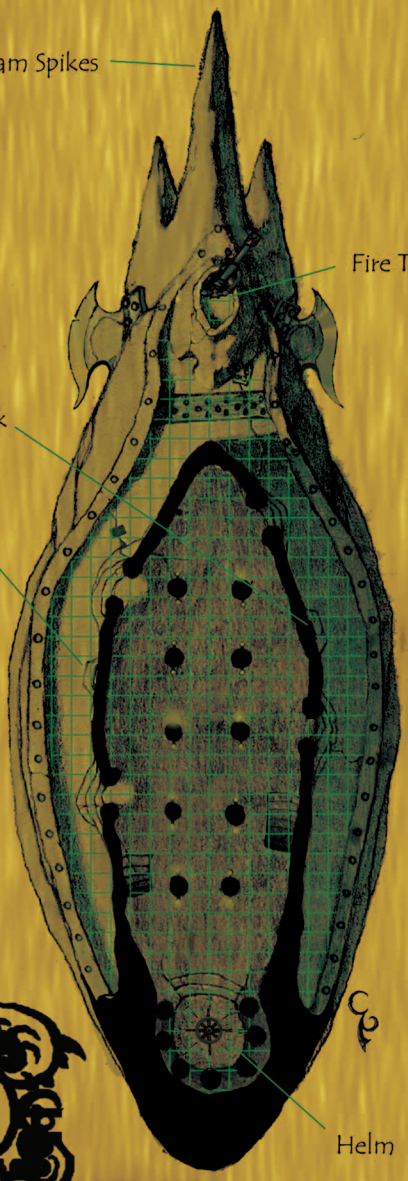
Engines & Weapons

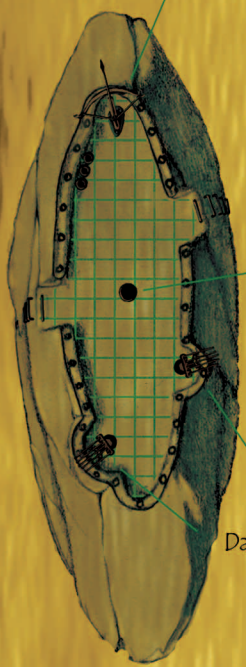
Engines	Type	Weapon 1	Atk	Damage	Weapon 2	Atk	Damage
	Necrotic	Whirling Ballista		3d6	Whirling Ballista		3d6
1.	Power Factor: 50 / Hull Points: 20	Crit: 20/x3	ROF: 1	Quadrant: Port	Crit: 20/3	ROF: 1	Quadrant: Starboard
2.		Range: 200	Mount: Side		Range: 200	Mount: Side	
3.		Weapon 3: Lightning Bombard	Atk	Damage: 5d6	Weapon 4: Fire Missiles	Atk	Damage: 5d6
4.		Crit: ---	ROF: 1/3	Quadrant: Fore	Crit: 18-20/x2	ROF: 1	Quadrant: Port
Craft DC: 30 / Hardness: 5		Range: 500	Mount: Top		Range: 500	Mount: Bottom	

Pilot	Weapon 5	Atk	Damage	Weapon 6	Atk	Damage
Base Skill / Mod. Skill	Crit	ROF	Quadrant	Crit	ROF	Quadrant
Navigator	Range	Mount		Range	Mount	
Base Skill / Mod. Skill						

Table 10.1 - Sunshadow Critical Hit Table

Roll	Type	Hardness	Hull Points
01-08	Necrotic Engines	5	20
09-16	Rigging	0	40
17-25	Rudder, Flexible	0	2
26-33	Rudder, Flexible	-	-
34-41	Whirling Ballista	0	10
42-50	Whirling Ballista (2)	0	10
51-58	Lightning Bombard	0	10
59-66	Fire Missiles	0	10
67-75	Anchor	10	20
76-83	Landing Gear	5	10
84-92	Crew	0	Special
93-100	Officers	0	Special





Dwarven Waraxe

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain
Stonebreaker	Waraxe	Dwarves	Greenberg

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed
100	C	9	12	50	200 mph

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates
Stone	8	1,650	2	+10	+0	Reinforced

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price
16	85	126	21	510,270 gp

Engines & Weapons

Engines	Type	Weapon 1	Atk	Damage	Weapon 2	Atk	Damage
	Oil	Dart Launcher		3d6	Dart Launcher		3d6
	Power Factor / Hull Points	Crit	ROF	Quadrant	Crit	ROF	Quadrant
1.	60 / 2	20/x3	1/2	Port	20/x3	1/2	Starboard
2.	60 / 2	Range: 500	Mount: Deck		Range: 500	Mount: Deck	
3.	60 / 2	Weapon 3: Fire Thrower	Atk	Damage: 5d6	Weapon 4: Ram Spikes	Atk	Damage: +1d6 Ram
4.		Crit	ROF	Quadrant	Crit	ROF	Quadrant
		19-20/Fire	1	Fore	N/A	-	Fore

Craft DC	Hardness	Range	Mount	Range	Mount
60	2	50	Deck	---	Structure

Pilot		Weapon 5	Atk	Damage	Weapon 6	Atk	Damage
		Ballista		3d6			
Base Skill	Mod. Skill	Crit	ROF	Quadrant	Crit	ROF	Quadrant
Navigator		20/x3	1/3	Fore			
		Range	Mount		Range	Mount	
Base Skill	Mod. Skill	200	Deck				

Table 10.2—Waraxe Critical Hit Table

Roll	Type	Hardness	Hull Points	Roll	Type	Hardness	Hull Points
01-04	Oil-Burning Engine	5	12	51-54	Rudder, Flexible	-	-
05-08	Oil-Burning Engine (2)	5	12	55-58	Propellers	0	30
09-13	Oil-Burning Engine (3)	5	12	59-63	Propellers	-	-
14-17	Rigging	0	200	64-67	Propellers	-	-
18-21	Rigging	-	-	68-71	Propellers	-	-
22-25	Ballista	0	10	72-75	Propellers	-	-
26-29	Dart Launcher (1)	0	10	76-79	Engine Swivel	0	45
30-33	Dart Launcher (2)	0	10	80-83	Anchor (1)	10	50
34-38	Fire Thrower	0	5	84-88	Anchor (2)	10	50
39-42	Ram Spikes	0	20	89-92	Landing Gear	5	18
43-46	Rudder, Flexible	0	10	93-96	Crew	0	Special
47-50	Rudder, Flexible	-	-	97-100	Officers	0	Special


Elvish Cloudleaper

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain
Mistwalker	Cloudleaper	Elves	Sunward

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed
80	C	9	4	130	200 mph

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates
Crystalline	9	400	2	+5	+10	Aquatic

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price
57	71	24	25	583,600 gp

Engines & Weapons

Engines	Type	Weapon 1	Atk	Damage	Weapon 2	Atk	Damage
	Arcane						

	Power Factor	Hull Points	Crit	ROF	Quadrant	Crit	ROF	Quadrant
1.	200	5						
2.			Range	Mount		Range	Mount	
3.			Weapon 3	Atk	Damage	Weapon 4	Atk	Damage
4.			Crit	ROF	Quadrant	Crit	ROF	Quadrant
			Range	Mount		Range	Mount	

Craft DC	Hardness
30	5

Pilot

Base Skill	Mod. Skill

Navigator

Base Skill	Mod. Skill

Note: Elvish Cloudleapers are not armed with traditional weaponry, instead relying upon shipboard mages to serve as offense weapons.

Table 10.3—Cloudleaper Critical Hit Table

Roll	Type	Hardness	Hull Points
1-8	Arcane Engine	5	20
9-16	Arcane Engine	-	-
17-23	Rigging	0	160
24-31	Rigging	-	-
32-39	Rudder	0	8
40-46	Rudder	-	-
47-54	Rudder	-	-
55-62	Engine Swivel	0	45
63-69	Reactive Map	0	1
70-77	Anchor (1)	10	40
78-85	Anchor (2)	10	40
86-93	Crew	0	Special
94-100	Officers	0	Special

Fleshstalker

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain
Lifestealer	Fleshstalker	Undead	Malstrom

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed
55	G	8	7	70	170 mph

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates
Bone	4	200	6	+0	+5	None

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price
26	24	60	14	328,720 gp

Engines & Weapons

Engines	Type	Weapon 1	Atk	Damage	Weapon 2	Atk	Damage
	Necrotic	Dart Launcher		3d6	Dart Launcher		3d6

	Power Factor	Hull Points	Crit	ROF	Quadrant	Crit	ROF	Quadrant
1.	100	20	20/x3	1/2	Fore	20/x3	1/2	Aft
2.			Range: 500	Mount: Bottom		Range: 500	Mount: Bottom	

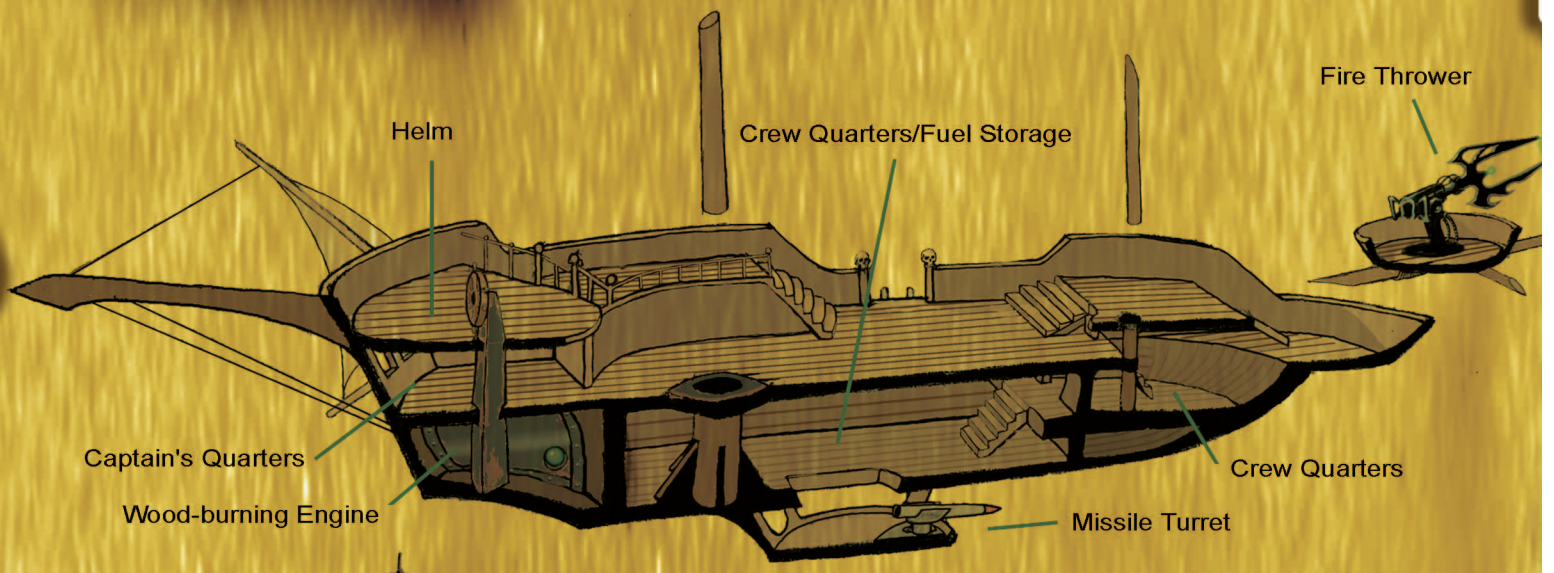
			Weapon 3	Atk	Damage	Weapon 4	Atk	Damage
3.			Whirling Ballista		3d6	Whirling Ballista		3d6
4.			Crit: 20/x3	ROF: 1	Quadrant: Port	Crit: 20/x3	ROF: 1	Quadrant: Starboard

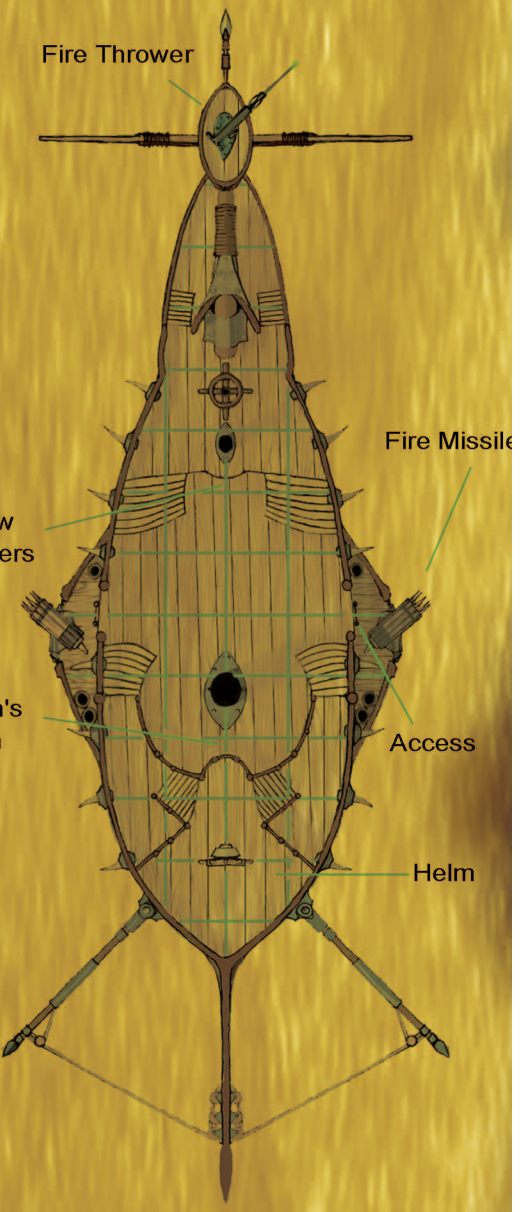
Craft DC	Hardness	Range	Mount	Range	Mount
30	5	200	Side	200	Side

Pilot		Weapon 5	Atk	Damage	Weapon 6	Atk	Damage
Base Skill	Mod. Skill	Razor Launcher		8d6			
		Crit: 19-20/x2	ROF: 1/2	Quadrant: Fore	Crit	ROF	Quadrant
Navigator		Range: 25	Mount: Deck		Range	Mount	
Base Skill	Mod. Skill						

Table 10.4—Fleshstalker Critical Hit Table

Roll	Type	Hardness	Hull Points
01-06	Necrotic Engine	5	20
07-13	Rigging	0	100
14-20	Rudder, Flexible	0	5
21-26	Rudder, Flexible	0	-
27-33	Rudder, Flexible	0	-
34-40	Dart Launcher (1)	0	10
41-46	Dart Launcher (2)	0	10
47-53	Razor Launcher	0	10
54-60	Whirling Ballista (1)	0	10
61-66	Whirling Ballista (2)	0	10
67-73	Reactive Map	0	1
74-80	Anchor	10	55
81-86	Landing Gear	5	16
87-93	Crew	0	Special
94-100	Officers	0	Special





Spindire Dragonship

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain
Ardent Fury	Dragonship	Pirates	Thalan

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed
37	H	7	3	63	153 mph

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates
Iron	10	1,050	8	+10	+0	None

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price
1	28	30	14	156,500 gp

Engines & Weapons

Engines	Type	Weapon 1	Atk	Damage	Weapon 2	Atk	Damage
	Wood-burning	Fire Missile		5d6	Fire Missile		5d6

	Power Factor	Hull Points	Crit	ROF	Quadrant	Crit	ROF	Quadrant
1.	90	2	18-20/x2	1	Port	18-20/x2	1	Starboard
2.			Range: 500		Mount: Side	Range: 500		Mount: Side

			Weapon 3	Atk	Damage	Weapon 4	Atk	Damage
3.			Fire Missile		5d6	Fire Thrower		5d6
4.			Crit: 18-20/x2	ROF: 1	Quadrant: Fore	Crit: 19-20/Fire	ROF: 1	Quadrant: Aft

Craft DC	Hardness	Range	Mount	Range	Mount
20	5	500	Deck	50	Deck

Pilot		Weapon 5	Atk	Damage	Weapon 6	Atk	Damage
Base Skill	Mod. Skill						
		Crit	ROF	Quadrant	Crit	ROF	Quadrant
Navigator							
Base Skill	Mod. Skill	Range	Mount		Range	Mount	

Table 10.5—Dragonship Critical Hit Table

Roll	Type	Hardness	Hull Points
1-8	Wood-Burning Engine	5	40
9-16	Wood-Burning Engine	-	-
17-23	Rigging	0	80
24-31	Rudder	0	4
32-39	Rudder	-	-
40-46	Fire Missiles (pt. tur)	0	10
47-54	Fire Missiles (stb. tur)	0	10
55-62	Fire Missiles (deck)	0	10
63-69	Fire Thrower	0	5
70-77	Anchor	10	40
78-85	Landing Gear	5	14
86-93	Crew	0	Special
94-100	Officers	0	Special

Airman's Lexicon

The terminology and slang of the airmen can be used to add a great deal of flavor to an aeronautic campaign, and a lexicon is provided here for your use. While many of these terms have origins in naval service, they have evolved and mutated to suit the needs of airmen.

Abeam: Any object or creature outside of the airship. This is normally used to refer to enemy soldiers or other creatures that are approaching in the air but are not yet aboard the airship.

Adrift: Any object or airman who has either fallen over the side of the airship or is in danger of being left behind. This is most often in reference to airmen who are magically flying as a result of combat or while acting as scouts, especially when the airmen is not able to catch up to his airship.

Aft: The rear of the airship.

Alongside: Any object or creature that is tethered or otherwise attached to the airship but not currently on the deck is referred to as being 'alongside the vessel.'

Astern: Behind the airship.

Beam: The width of the airship.

Bearing: The direction of any object from the airship. Normal use is by compass direction, so an object to the north of the airship would have a northerly bearing.

Belay: To secure a rope without knotting it.

Berth: An allocated spot where a crewman or passenger is designed to sleep and store his belongings. For crewmen, this is normally just a bunk and a footlocker, for the passenger it may be an entire room below decks.

Bow: The front of the airship.

Bulkhead: The partitions inside of an airship—the would-be walls in a building or on most other vessels.

Ditch: A verb meaning to throw someone over the side of an airship. While this is a common punishment aboard pirate vessels or airships crewed by evil creatures, it is very rare and reserved for the worst crimes aboard any other airships.

Furl: To roll a sail up the mast and secure it so that it no longer catches wind and is stopped.

Fore: At, near, or in the front of the airship.

Fore-mast: The mast furthest forward on an airship.

Galley: The airship's kitchen.

Gangway: Any recognized traffic route, or entrance to a traffic route, aboard an airship. While a corridor is not necessary a gangway, any busy area of the airship is given this name.

Gunwale: The upper edge or rail of the airship's deck. Airships tend to have gunwales a bit higher than a sailing ship, with the edge of the deck often rising as much as three and a half-feet above the level of the deck.

Hatch: Any opening, covered or not, in the main deck that allows access to the cargo hold or other areas below the main deck.

Heads: The toilets of an airship. While many airmen are just as happy to drop their waste over the sides of the airship and let the chips fall where they may, as it were, most captains are not so keen on this activity. It not only puts men at risk, but also stands a chance of annoying those below the airship. While sailing vessels often placed their heads at the fore of the vessel as they moved with the wind, the airship head is nearly always at the very rear of the airship, most often just below the engine room.

Heel: When an airship tilts more than 45 degrees due to an impact or the force of the wind against its sides, it is said to be 'heeling over.'

Helm: The apparatus by which the rudder is controlled. More often referred to as the Wheel aboard an airship.

Jettison: To throw overboard.

Lee Side: The side of the airship away from the direction the wind is blowing.

Log Book: These books are so treasured by pirates and other sailors that they are kept under lock and key when not in use. The log book keeps an accurate measure of everything that happens aboard the boat each day as well as a detailed accounting of the course the airship takes during its journeys. Because the log book is often very large and covers dozens of voyages by an airship, it contains critical flight information that can be used to recreate trade routes, avoid enemy airships, and generally figure out the lay of the land without every venturing into the area. Military log books are always magically protected and are destroyed by the captain if it appears they might be captured.

Mooring: To secure an airship to an airdock, usually a tower, using lines or spells to hold it in position.

Port: The left of the airship, if you are standing on the deck and looking toward the bow.

Rigging: All the ropes used for supporting the masts and controlling the sails. In airship terminology, this most often also includes the sails and masts themselves.

Ship's Company: All crewmen and officers assigned to, or working on, the same vessel.

Sick Bay: An airship's hospital, usually overseen by a cleric or trained healer during long voyages, but left unmanned for shorter trips.

Sister Ships: Vessels built to the same general design. Sometimes also used in reference to airships created by the same engineer.

Skulk: To avoid duty, usually by simply hiding while others are working.

Splice: To join two ropes together by unraveling their ends and interweaving them together. This type of work is often used as punishment aboard airships because it is both difficult and tedious.

Starboard: The right side of the airship, if you are standing on the deck and looking toward the bow.

Stern: The rear of the airship.

Airships Record Sheet

Ship Name	Ship Type	Allegiance	Captain

Tonnage	Size	Size Category	Maneuverability	Accel	Top Speed

Hull Type	Hardness	Hull Points	Armor Class	Fort Save	Ref Save	Templates

Cargo Space	Open Deck	# Crew	# Officers	Total Market Price

Engines & Weapons

Engines	Type	Power Factor	Hull Points
1.			
2.			
3.			
4.			

Craft DC	Hardness

Weapon 1	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Weapon 2	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Weapon 3	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Weapon 4	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Weapon 5	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Weapon 6	Atk	Damage
Crit	ROF	Quadrant
Range	Mount	

Pilot

Base Skill	Mod. Skill

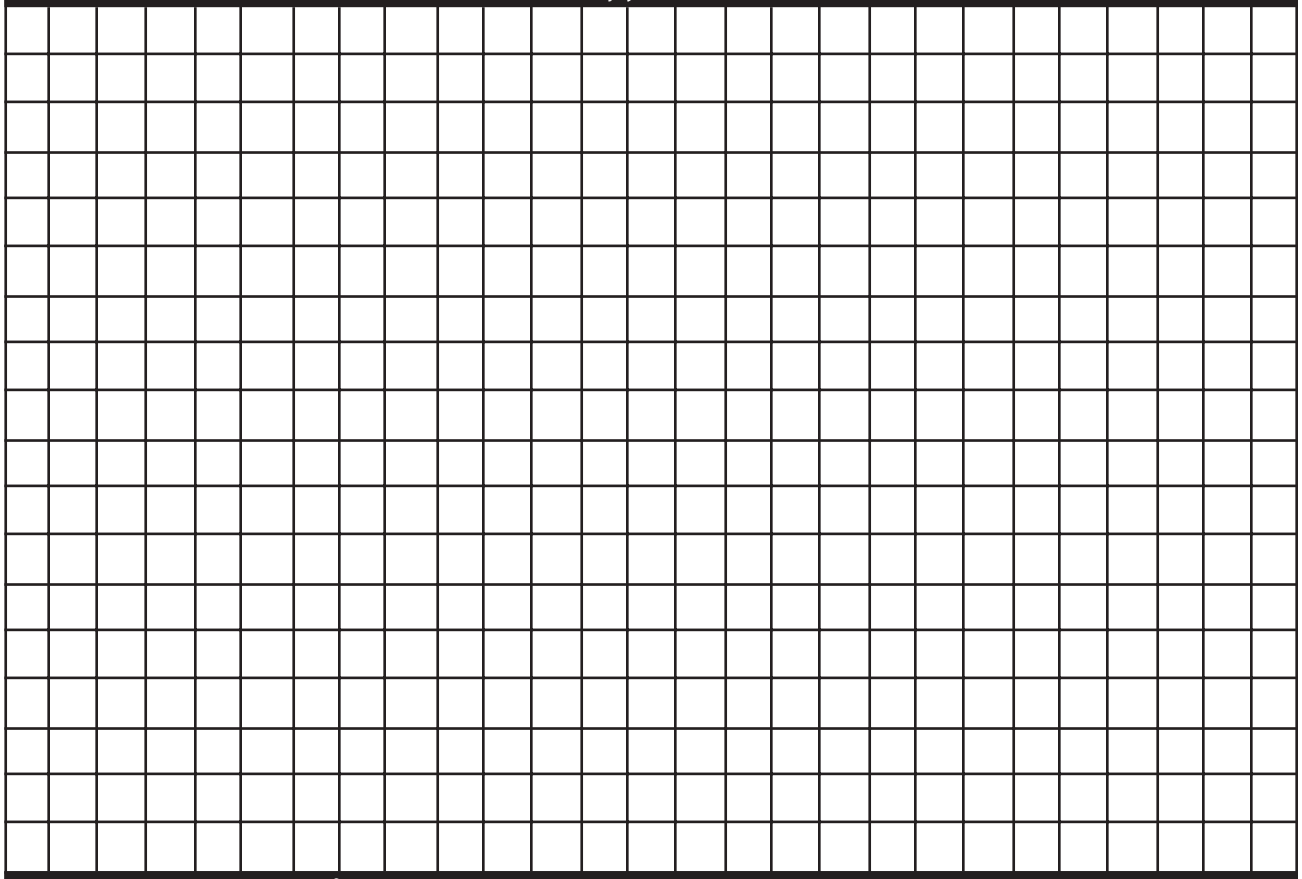
Navigator

Base Skill	Mod. Skill

Ship Components

Item	Space Req.	Deck	Crew Req.	Crit Spaces	Hard.	HP	Man. Bonus	Nav. Bonus	Accel. Bonus	Misc. Bonus	Cost
Hull											
Engine											
Totals											

Ship Diagram



Critical Table

Roll	Component	Hardness	HP

Officers

Rank	Name	HD	HP	Salary

Crew

Rank	#	HD	Atk	Cost
Landsmen				
Airmen				
Veterans				