

Manual of Professions

A Dungeoneer's Guide to Aeronautics

By Seann McAnally and Randall Munden

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A Dungeoneer's Guide to Aeronautics

A new class, the Aeronaut, and basic airship combat for 1st Edition AD&D



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Contents

Introduction	5
I. The Aeronaut.....	5
Airship Operation & Repair.	5
Aerial Tracking.	6
Damage Bonus vs. Aerial Creatures.	6
Followers.	6
Aeronaut Skills.	6
II. Airships & Airship Combat	7
Disclaimer & Assumptions.....	7
Types of airships.	7
Magic and Flying craft	10
New spells for use with Airships	10
Propel Airship (Alteration).....	10
Buoyancy (Alteration)	10
Protect balloon (Abjuration)	10
Protect hull (Abjuration)	11
Escape (Alteration).....	11
Conclusion	11
Aeronaut Table 1: Aerial Tracking.....	6
Aeronaut Table 2: Aeronaut Skills	7
Aeronaut Table 3: Level Advancement	7
Airship Table 1: Airship Statistics.....	9
Airship Table 2: Combat Matrix	9
Airship Table 3: Hull Damage	9

Introduction

The Advanced Dungeons and Dragons game provides ample opportunity for flight - be it on a flying carpet, a *broom of flight*, or the back of a griffin, it's likely that at some point, player characters will take to the skies.

For those Dungeon Masters who wish to add large flying vessels to their campaign however, there are fewer options - the most noteworthy being "spelljamming." This method of flight, like those mentioned above, relies solely on magic to keep ships aloft. While everything about AD&D requires suspension of disbelief, mage-powered ships may not be necessary; a slightly more "realistic" view - "fantastic technology" as opposed to magic - can prove interesting. This article looks at just one of many ways vessel-based flight can become a part of an AD&D campaign.

In the real world there were many ingenious ideas for non-magical flight (Leonardo da Vinci's being the most famous) long before there were machines of adequate capacity to power them. By 1783, the Montgolfier brothers, Jacques Charles and others had successfully launched large balloons. Scientists known for their rigid scepticism (Carl Sagan for one) have insisted that da Vinci's designs would have worked, had they a strong enough power source. Balloon technology that stunned onlookers in the late 1700s utilized (for the most part) nothing that was wholly alien to earlier epochs. If

I. The Aeronaut

Aeronauts are daredevils who ply the skyways in primitive, lighter-than-air flying machines. Airships are unstable and dangerous, and aeronauts are considered almost as unstable. In a world of fireballs and gargantuan flying monsters, who else but a madman would defy the gods and take to the skies?

Aeronauts serve as pilots, first mates and captains on ships of war, trade and exploration. They may operate small mail flyers, distributing news and information more quickly than earthbound deliverers can. Aeronauts may smuggle illicit goods into a region, well over the snooping noses of customs officials. In every case, however, the risk an aeronaut takes is extraordinary, so it is not surprising that many take up a life of adventure - it is in their blood.

The aeronaut must have strength and intelligence of not less than 12, and dexterity and constitution scores of 13 or greater. If the aeronaut has a dexterity of 15 or greater, he receives a 10% bonus on earned experience.

we can posit strong magics that keep windjammers aloft (and sailing through a vacuum, no less) it is surely no great extrapolation to posit a technology slightly accelerated from that of the real world, resulting in airships that combine elements of da Vinci's designs with early balloon and derigible technology. Such airship technology, while at least partially dependant upon magic in some scenarios, is an interesting departure from the flying ships of the 1980s TSR mold.

Granted, we're still talking about fantasy here - but we're talking about fantasy technology, which is something that is by no means alien to AD&D, but it has never been a major part of the game. There are many reasons why airships might be desirable in a campaign - practical considerations such as quick trade and travel are a few. Perhaps the best reason of all, though, is the opportunity for swashbuckling adventure. A boarding action, after all, is far more exciting when conducted a mile and a half off the earth's surface!

What follows are some home-brewed methods we have used in the Gonen's World campaign to introduce aeronautics to our games. The article is divided into two parts - the first details a new character class, the Aeronaut. Since it is impossible to separate these "sky rangers" from their ships, a second section provides a simple classification and combat system for battles between airships.

Aeronauts attack and save on the appropriate matrices for fighters. They gain proficiencies and attacks per round as fighters as well. Aeronauts use 8-sided hit dice. Like rangers, they get two, rather than one, hit dice at first level, and may accumulate 11 rather than 9 total hit dice.

Aeronauts possess the following special abilities.

Airship Operation & Repair.

The primary function of an aeronaut is to pilot various sorts of lighter-than-air craft. However, such contraptions are complex and finicky beasts - it takes years of experience for the aeronaut to become wholly proficient in their use (note: many of the terms found in this section are explained in *Airships & Airship Combat*, below).

At the first level of experience, the aeronaut has the ability to pilot sprite-class airships - light fliers, flitters, mail packets, and the like.

At the third level of experience, the aeronaut gains

The Aeronaut

the ability to repair rigging and hull damage. Time taken is d10 turns minus the level of the aeronaut, for a minimum of 1 turn, or a greater amount of time as determined by the DM.

At 7th level the aeronaut gains the ability to pilot airtroll-class vessels (trade cogs, cruisers, etc.).

Upon reaching the 9th level of experience, the aeronaut gains the ability to diagnose and repair propeller drive systems, be they mechanical, magical or manual.

At 10th level, the aeronaut gains the ability to pilot wardreg-class airships (large trade vessel, battleship, et al).

Aerial Tracking

Aeronauts possess the uncanny ability to track a flying object or creature's course based on its last known trajectory, small amounts of debris, disturbances in the air and clouds, knowledge of weather patterns, and an innate "sixth sense" in the sky. In order to track, the aeronaut must have observed the object or creature to be tracked within 3 turns (30 minutes) of the commencement of tracking and must begin tracking in the same general area the creature or object was last observed.

Aeronaut Table 1: Aerial Tracking

Quarry's Action	Chance to Track
Similar altitude/speed	65 %
Increases altitude/speed	55 %
Decreases altitude	45 %
Pass through cloud cover	35 %
Hides in Clouds (as aeronaut ability)	15 %
In heavy rain or fog	-15 %

Chance to track increases by 10 % at the 7th level of experience and a further 10 % at 10th level.

Damage Bonus vs. Aerial Creatures

When fighting aerial creatures, aeronauts add 1 hp for each level of experience of the aeronaut when calculating damage.

Followers

At 10th level, the aeronaut attracts 3-30 followers. The followers will include one 7th level aeronaut and two fighters of the fifth level with missile weapon specialization. The remaining followers will be zero-level artillerists or pushmen (see Airships and Airship Combat, below).

Aeronaut Skills

In addition, aeronauts have the following skills: *Climb Rigging*, *Predict Weather*, *Repair Leak*, *Hide in Clouds* and *Avoid Collision*. These are analogous to thieving skills in terms of advancement (see Table 2).

Climb Rigging: As the thief ability *climb walls*. The aeronaut may scamper with relative ease among the rigging and balloon surface of his airship.

Predict Weather: The aeronaut may predict the weather for the next d20 + 4 hours. The DM may prefer to keep this roll secret, and give the aeronaut misleading information if the roll is failed.

Repair Leak. The aeronaut may repair rips and punctures in the airship's balloon to arrest leakage. Time taken is d10 rounds minus the level of the aeronaut, with a minimum of 1 round or greater amount of time as determined by the DM.

Hide in Clouds. Similar to the thief's *hide in shadows* skill. The aeronaut may quickly manoeuvre his airship into cloud cover to avoid detection or pursuit. Success indicates that the craft is completely hidden – but another aeronaut will have a chance to find him (see *Aerial Tracking*, below).

Avoid Collision: The aeronaut's lightning-quick instincts and intimate knowledge of his craft gives him a chance to quickly manoeuvre an airship out of the way of an impending collision. Unless the aeronaut states otherwise, the airship dives 10" below the colliding obstacle.

Aeronaut Table 2: Aeronaut Skills

Level of Aeronaut	Climb Rigging	Predict Weather	Repair Leak	Hide in Clouds	Avoid Collision
1	85 %	15 %	20 %	10 %	30 %
2	86 %	21 %	25 %	15 %	35 %
3	87.5 %	27 %	30 %	20 %	40 %
4	88 %	33 %	35 %	25 %	45 %
5	90 %	40 %	40 %	31 %	50 %
6	92 %	47 %	45 %	39 %	55 %
7	94 %	55 %	50 %	43 %	60 %
8	96 %	62 %	55 %	49 %	65 %
9	98 %	70 %	60 %	56 %	70 %
10	99 %	78 %	65 %	63 %	80 %
11	99.1 %	86 %	70 %	70 %	90 %
12	99.2 %	94 %	75 %	77 %	100 %
13 +	99.3 %	99 %	80 %	85 %	105 %

Aeronaut Table 3: Level Advancement

Experience Points	Level	d8 for accumulated hit points	Level title
0-2,500	1	2	Pushman
2,251-4,500	2	3	Flyer
4,501-10,000	3	4	Mate
10,001-20,000	4	5	First Mate
20,001-40,000	5	6	Pilot
40,001-90,000	6	7	Aeronaut
90,001-150,000	7	8	Second Officer
150,001-225,000	8	9	First Officer
225,001-325,000	9	10	Captain
325,001-650,000	10	11	Sky Ranger
650,001-975,000	11	11 + 2	Sky Marshall
975,001-1,300,000	12	11 + 4	Sky Admiral

325,000 xp per level for each additional level above the 12th.

Aeronauts gain 2 hit points per level after the 10th.

II. Airships & Airship Combat

Disclaimer & Assumptions.

The following notes can provide a simple, quick-playing system for determining the outcome of aerial battles between airships - it is by no means a serious simulation, and many factors (such as updrafts/downdrafts) have been ignored in favor of playability. This system has been made as generic as possible, suitable for a campaign in which aeronautics exist as a background element, rather than a major focus of play, and individual DMs should be able to modify it or expand it as necessary to make it fit their campaigns. The system also assumes the presence of a propeller-driven propulsion system, but this could be of either mechanical (gnomish, magical) design or

operated by pushmen, the galley-slaves of the skies. Likewise, the system assumes the existence of "guns" - which could be anything from small-bore cannon to ballista or catapult, depending upon the tech level of the campaign. Balloons are assumed to be armored with connected plates of thin metal, designed to deflect missiles; balloons are also made up of many small air pockets to avoid massive, total deflation. DMs may wish to adjust damage and hit points depending on what sort of weapon is desired. It is also no great task to customize airships or create new types. A few tweaks on the tables below, and almost any variant is possible.

Types of airships.

Airships can be grouped into three broad classes - wardreg, airtroll, and sprite. The wardreg is the largest and rarest of airships, juggernauts of the

skies capable of much destructive power. Airtrolls are about half the size, packing a higher punch but having greater maneuverability. Finally, sprite-class

airships are the smallest, most maneuverable sort, but they have little or no destructive capability. All airships must be as light as possible, therefore they are relatively small compared to ocean-going vessels, with crew, weaponry and cargo crammed into as tiny an area as is practical. Crew quarters are simply hammocks strung up wherever space is available. Ship structure is light and open - usually made with timber sparing covered by cuir bouilli 'scales'. There are generally four decks - a ballast level (ballast is water, easily obtained and released at need), cargo/pushmen/propeller mechanics level, gun deck, and an open top "steerage" deck, which usually holds some sort of fore or aft structure on larger airships. Where allowed, decks are open to one another. The goal of combat is assumed to be the slow deflation of an enemy balloon, keeping the airship body intact for purposes of capture.

A note on terminology: "Guns" refers not only to the number of weapons on a craft, but the mass or inertia - perhaps even the volume - of the craft regardless of the presence of guns. For example, a 10-gun airship (wardreg class) could be a cargo ship, the corvette of an ambassador, a troop carrier, or some other type, and need not necessarily carry 10 guns. The classification merely refers to the number of guns an airship could carry at need and is a convenient way of referring to ship size. The (") symbol denotes the standard outdoor measurement of 10 yards.

Playing surface. This system can be played in the abstract, but it is easier if airship locations are marked on a hex grid, extended into three dimensions in the imagination. The grid can be to any scale, but one hex = 1" seems sufficient for most purposes. Counters, miniatures or even pencil marks will suffice to represent individual airships. A plus or minus designation next to an airship is a good way to remember how high or low it is in relation to other ships.

Initiative. Each side in an airship encounter rolls d6 for initiative - sprites gain +2 to this roll; airtrolls gain +1. Actions occur in descending order, from highest score to lowest.

Movement. Rates are listed in Airship Table 1: Airship Statistics. Airships enter combat at ¼ maximum speed unless determined otherwise by the DM. Ships may accelerate at their given value. Deceleration is figured likewise until the ship reaches a "dead" stop (drifting with no propulsive power). Attitude (vertical alignment) is adjusted by the given rate per round if the airship plans to climb or dive to a different altitude. Pivot is the ship's horizontal alignment and is important when figuring the number of guns that can be brought to bear upon a target (see Combat, below). When

determining degrees and facing, the illustration on page 52 of the Dungeon Masters Guide is a good guide. Ships may fire at any time during movement, subject to a penalty (see Firing, below).

Ramming & Collisions. Most airships are equipped with frontal rams used for puncturing balloons and, more rarely, causing damage to the hull. To ram, the airship simply moves into contact with another - if the balloon is targeted, the attacking ship must be 1" above the defending ship. No to hit roll is required, but the defending ship's aeronaut may roll to avoid collision (see Aeronaut Table 1, Aeronaut Skills). A ramming action does # of guns x d10 damage. If the attacking ship is moving at maximum speed, modify damage by a further d10. If two ships collide when ramming was not intended, the difference in gun # rating for each ship is compared, and each ship takes the difference x d10 in damage with a minimum damage of 2d10.

Firing. Basic chance to hit is figured using Airship Table 2: Combat Matrix. The attacking ship must specify whether it has targeted the ship's balloon or hull. When attacking, a ship fires a volley at its target - simply cross reference the number of guns the attacking airship can bring to bear on a target with the range between attacker and defender - the resultant number or higher must be rolled on a d20 for a successful hit. Unless otherwise noted by the DM, guns are equally placed along either side of a ship - therefore the # of guns brought to bear will almost always be ½ the gun # rating noted in Airship Table 1. If allied ships are in communication - magic, semaphore, whatever - they can combine their available guns in an attack on one target and resolve the action in one roll. All modifiers for both attacking airships are cumulative. Ships may fire at any time during their movement if they so choose - but attack rolls are at a minus 2 to hit (cumulative with other modifiers) if the pilot chooses to accelerate or decelerate in the same round. If the defending airship is at short range and greater than 1" below the attacking airship, the attacker may only target the defender's balloon.

Damage. Roll 2d10 for each gun involved in a successful attack and apply it to either the hull or balloon hit points, whichever was targeted. Consult Airship Tables 3 & 4 - when hit points reach a certain percentage of the total the indicated result occurs.

Crew Death. If the existence of airships are assumed, one can also assume the existence of some sort of parachute, parawing or other escape device...DMs may wish to allow crew a saving throw to avoid death by falling. If PCs are manning guns, and hull damage indicates a gunner's death,

the PC may save vs. wands to avoid this fate, taking instead 2d10 damage.

Optional Rule: If the DM wishes, airship crews can be considered green, hardened, veteran, or elite, and as such will be subject to the modifiers listed

in Airship Table 2. How crews progress through the ranks from green to elite is up to the individual DM. One method is to allow crew to progress to the next level after 5 - 10 battles (if they live that long!). In the case of PC crews, crews progress based upon every five levels of experience.

Airship Table 1: Airship Statistics

	Wardreg	Airtroll	Sprite
# of guns	10	4 (5)	(2)
Minimum crew	29*	11*	1-4*
Acceleration**	2"/round	3"/round	5"/round
Deceleration	1"/round	2"/round	4"/round
Attitude	30°/round	60°/round	90°/round
Pivot	30°/round	60°/round	90°/round
Max Speed	15"/round	30"/round	44"/round
Zero to Max	7.5 rounds	6 rounds	5 rounds
Hull hit points	200	175	150
Balloon hit points	250	150	100

*Airship propellers are driven by either mechanical (gnomish, magical, etc.) means or by "pushmen" operating cranks. If an airship is powered by pushmen, add 2 crew per gun.

**Cumulative per round until max speed is reached.

Airship Table 2: Combat Matrix

# of Guns	Short 5-30	Medium 31-20	Long 121-300	Extreme 301 +
1	16	17	18	19
2-4	14	15	16	17
5-10	12	13	14	15
11-20	10	11	12	13
21 +	8	9	10	11

Note: Targets under 5" away are hit automatically unless the "to hit" score is 1..

Modifiers (cumulative):

- If pilot is aeronaut level 7 or higher, + 1 to hit bonus.
- If airship is moving, attack rolls are at -2.
- Green crew suffers a -1 to hit penalty.
- Veteran crews gain a + 1 to hit bonus.
- Elite troops gain a + 1 to hit bonus.
- Elite crew fires an extra volley every other round.

Airship Table 3: Hull Damage

% hp	Wardreg	Airtroll	Sprite	Result
75	150	131	113	30% chance the ship loses one random gun and crew on side facing enemy.
60	120	105	90	Statistics in Table 1 go down by ½" or 10°.
50	100	88	75	50% chance the ship loses one random gun and crew on side facing enemy.
30	60	53	45	Statistics in Table 1 go down by a further 1" or 10° (total of 1½" or 20°)
25	50	44	38	75% chance the ship loses one random gun and crew on side facing enemy.
0	0	0	0	The airship is a drifting hulk. If the balloon is at less than 60% of its hit points, there is a 75% chance that the hull detaches and plummets toward the ground.

Airship Table 4: Balloon Damage

% hp	Wardreg	Airtroll	Sprite	Result
60	150	90	60	Airship begins involuntary descent at rate of 10" per round.
30	75	45	30	Airship descends at rate of 30" per round.
0	0	0	0	Uncontrolled fall. Airship destroyed, crew dies unless a save is allowed.

Magic and Flying craft

The following magic user spells can be particularly useful when used on an airship:

Level	Spell	Comments
1	Mending	This repairs 2D6 damage to the hull of a damaged craft or can repair 1D6 damage to a balloon.
3	Fireball (and similar spells)	Most Airships will be treated against fire, though the fireball spell is still very damaging, all crew within the area of effect take the normal damage from the spell. If the spell does more than ¼ of the current hit points of the hull then it will ignite causing 5D6 damage to the hull per round until the flames are extinguished.
3	Material	This spell can create enough wood to repair a craft using the Fabricate spell.
5	Fabricate	This can repair up to 1D20 points of damage to the hull of a damaged craft for every 5 levels of the magic user. This assumes there is enough material to repair it.
5	Wall of Force	A wall can be cast to defend a ship from ramming and projectiles.
7	Reverse Gravity	This spell can be used to give a sudden lift to an airship which could be used to avoid either another craft or mountains and trees etc.

New spells for use with Airships

Since the Aeronaut cannot cast spells, then it makes sense for them to have a magic user within their crew, the following spells have been developed which can be useful to the crew of an airship.

Propel Airship (Alteration)

Level: 3
Range: Touch
Duration: 1 turn / level
Area of effect: Target airship

Components: V, S, M
Casting time: 5
Saving throw: Nil

This spell allows the airship to be magically propelled should either normal propulsion not exist, as an alternative to it or to give a boost to the crafts speed. The speed of the craft is dependant on the level of the caster and the type of craft speeds are in distance (in the table) per round:

Level	Wardreg	Airtroll	Sprite
5-9	15"	30"	44"
10-13	17"	33"	48"
14-17	20"	37"	53"
18-21	24"	42"	59"
22-25	39"	48"	66"
26 +	35"	55"	74"

Buoyancy (Alteration)

Level: 4
Range: Touch
Duration: Special
Area of effect: Target airship

Components: V, S, M
Casting time: 5
Saving throw: Nil

This spell can allow an airship to continue flight for a short time, even if the balloon is destroyed, it does not allow the airship to climb, but can fly level or descend safely for the duration of the spell. The duration of the spell is dependant upon the class of the craft:

Class	Duration
Wardreg	5 segments / level
Airtroll	1 round / level
Sprite	2 rounds / level

While the craft is under the influence of this spell the caster must concentrate, and is unable to cast any other spells or enter combat, though they may move at half their movement rate and talk although seem distracted. While concentrating they can control the speed of the airships descent.

Protect balloon (Abjuration)

Level: 4
Range: Touch
Duration: 1 turn/level
Area of effect: Target balloon

Components: V, S, M
Casting time: 7
Saving throw: Nil

This spell surrounds an airships balloon with a magical barrier which prevents up to 1D6 per level of cumulative damage; the spell in effect gives the balloon extra hit points which does not take any damage until all the magical points have been removed. The spell also protects rigging surrounding the balloon and attaching the balloon to the hull of the craft. The spell is particularly

effective against archers, which may be employed on another craft to destroy the balloon. The material component for the spell is a palm sized segment of the scale of any large reptile, dragon, wyvern, hydra or similar creature.

Protect hull (Abjuration)

Level: 4	Components: V, S, M
Range: Touch	Casting time: 9
Duration: 1 turn/level	Saving throw: Nil
Area of effect: Target hull	

This spell protects the wooden hull of an airship or ocean-going vessel from impacts that would cause damage, like protect balloon there is an amount of magic hit points. This spell prevents up to 1D8 per level of cumulative damage. This spell can protect against projectiles, another craft crashing into them and even rocks which a ship may otherwise be smashed against and destroyed.

Escape (Alteration)

Level: 5	Components: V, S
Range: 0	Casting time: 3
Duration: Instant	Saving throw: Nil
Area of effect: 1" radius	

This spell is similar to the 5th level magic user spell Teleport, it transports the caster and everything they wish within the area of effect to the solid ground directly below them. If the surface is not solid such as water then the spell will automatically fail. All living creatures and objects that they are carrying will be transported, irrespective of the total weight.

Conclusion

It should be noted again that in the view of this article, aeronautics exists as a background element of the campaign, rather than serving as the major focus. If the campaign is aimed at a level where every character has an airship and the entire adventure takes place miles above ground, more detailed, expansive rules would be needed. The information here is necessarily somewhat generic (particularly in the second part) so it can be tailored to serve the specifics of an individual campaign. Playtesting has revealed some flaws that have been fixed but there is certainly room for improvement - if nothing else, we hope this article will serve as a springboard for your own creativity.