
A & A GAME ENGINEERING PRODUCT SUPPORT

PERFIDIOUS ALBION

RULES SUPPLEMENT

WAR IN THE AIR

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This supplement is extracted from previous editions of the rules,
and are not widely used.

They work with all editions of the rules from 6th Edition onwards.

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A — WAR IN THE AIR

A.1 – Introduction to Aeronautics

These rules were inspired by the science fiction of H G Wells and Jules Verne and allow the use of flying machines, as imagined by those authors in the period covered by the main rules. Flying machines are divided into two types:

AIRSHIPS

These are large vessels comparable in length to ships either of the traditional zeppelin type or else similar to Robur's Albatross, which was supported by multiple helicopter style rotors. Airships are represented by models - (Navwar make a 1/3000 scale zeppelin) and their plans are drawn on cards in the same way as ships. An airship's record card has tracks showing the current lift (whether derived from gas bags or rotors) and the load of guns, bombs, embarked aircraft and engines. Crew quality is either a single value, or divided as described earlier into 4 qualities: Airmanship, Morale, Gunnery (which includes bomb-aiming) and Damage control. Each airship is treated as a squadron of one. Airships should be mounted on bases 1" wide and 3" long.

FLYERS

These are one or two man aircraft, either similar to historical first world war types, or more exotic machines such as ornithopters. Flyers are represented by 3/4" square counters, each representing a squadron. All flyers must be organised in squadron from 3 to 6 strong. Each squadron has a record card showing the crew quality (which is not subdivided into different qualities), the speed of the flyer when climbing and otherwise, any weapons or special abilities.

COMMANDERS

Airships and flyers have commanders whose competence is diced for in the usual way. One must be nominated as the overall air commander. They are located in an airship control car or in the number 1 flyer on a squadron record card.

A.2 – Height levels

For game purposes there are 4 height levels.

- Surface is sea level and low lying land
- Low is the normal attack height for flyers when bombing moving targets. In some scenarios hills or cliffs will extend up to low level and obstruct movement. Quickfirers on ships may fire at low level targets.
- Medium is the maximum altitude for flyers without a supercharged engine, and the normal operating altitude for airships.
- High is the altitude at which cold and oxygen starvation begin to reduce crew and engine efficiency. All crew ratings are reduced by 1. Aircraft require a supercharger to go to high altitude.

Airships and flyers must have a counter placed by them showing their height. If none is placed they are assumed to be on the surface.

A.3 – Morale

Airships test their morale when half of their lift has been lost, squadrons when half their number have been shot down. If morale is failed the airship or squadron must try to leave the table by the safest route. Squadrons embarked on airships will return to the mother ship if it is not currently under attack, and still airborne. Squadrons armed with bombs or torpedoes will jettison these if they fail a morale test.

A.4 – Movement

Flying machines move after ships. The opposing air commanders roll for initiative and the winner decides who moves first. If a natural double is rolled the weather may change, unless it already has during that move. The following sequence is used:

- First All airships on one side move
- Then All airships on the other side

Finally players alternate in moving one flyer squadron at a time. If a squadron is contacted by an enemy flyer before it has moved it is "pinned" and an additional attack is made against it if it moves away.

Airships move and turn in the same way as ships. They may not go astern or make emergency turns. Airships may change height by 1 level each move, but if their lift is less than their current load they must drop one level. They may speed up by half their remaining maximum speed and slow down by any amount per move.

Before moving, airships may jettison bombs or gun armament and launch embarked aircraft. After moving, they can attempt to bomb any surface target whose base is overlapped by or in contact with their base, and pick up aircraft designed to be retrieved which are at the same height level and in contact.

Airships at the same height may collide if one moves across the other's base. Test as for ships but the collision dice is altered by +/- for each 10 speed units available. Airships forced to the surface collide automatically. When airships collide with airship the rammer loses all levels in its foremost section and the target all levels in the section hit.

If airships hit the ground they are wrecked automatically.

Flyers have two speeds: Level Flight / Dive and Climb. The latter speed is used when changing height upwards. In all other circumstances use Level Flight/Dive. They may move at any speed up to the appropriate maximum. They may only change height up or down by 1 level per turn. They do not have a turning circle and may move in any sequence of directions desired. They move past intervening airships without risk of collision, and may never be pinned or rammed by airships.

It is never possible to move further than the current visibility.

A.5 – Effects of weather

In storms, all air movement is at half speed. No attacks may be made. Roll one D6 for each airship and airborne flyer squadron.

Flyers:	The appropriate numbered aircraft is lost (There is no effect if that numbered aircraft is either absent or already destroyed).
Airships:	1 = Rotate the model about its centre 90° left
	2 = Rotate the model 90° right
	3 = Move up one level if possible (even if load>lift)
	4 = Move down one level, may crash if forced to contact the surface
	5 = Lose 1 gas lift unit (rotor craft unaffected)
	6 = Lightning strike destroys a random section level

A.6 – Air attacks

Shooting and bombing takes place during the ship gunnery sequence - a squadron of flyers or an airship may attack instead of a squadron of ships. All aerial weapons can bear in any direction. There are 3 types of aerial attack:

- **Gunfire:** Flyers may be armed with rifles or machine guns. These may be fired at any target in base to base contact, and at the same height level. Airships may carry machine-guns or Quickfirers. Quickfirers have the same range as those on ships and may fire at targets on the same level or one below. Ships may fire Quickfirers at low level air targets. Ships may fire their normal guns against Airships at sea level.
- **Bombing:** Flyers may carry one bomb salvo (representing one large or several small bombs). Airships may carry a number of salvos. Bombs may be dropped on any surface target whose base is touched or overlapped by the airship or flyer base. Some flyers may carry a single torpedo.
- **Fabric rip:** This is a weapon designed to cut an airship's envelope using grappling hooks, darts or sword, and let out gas. It can only be fitted to flyers, which must be in contact at the same height to use it.

A.7 – Hit resolution

The base chance to hit per flyer or per weapon is shown below. This is modified by the same factors as ship gunnery. When bombing, read bombsight technology for gun technology.

Gunnery	
Quickfirer	100%
Machine-gun	50%
Rifle	20%
Bombing	
High	0%
Medium	10%
Low	30%
Fabric rip	30%

Hits on airships are resolved by rolling a D6 and a D10 for the section level hit except where a fabric rip attack is made when the attacker chooses one undamaged gas section level to be destroyed. Hit on flyers are resolved by rolling a D6, the corresponding numbered aircraft is shot down.

Dive Bombing

Aircraft which dive from medium to low height in the move in which they attack may make a dive bombing attempt, which adds 20% to the hit chance, giving a basic 50%.

Strafing attacks by aircraft

Aircraft armed with machine guns may carry out a strafing attack. Airships cannot make strafing attacks, nor can they be strafed.

The squadron counter is moved at low altitude down the length of the target ship and ends its move in base to base contact at the far end. One automatic straddle is scored per machine gun mounted. Roll a D10 only (do not modify for raking). The highest level containing part of the ship's structure is hit. If the section level only contains a funnel, the next level down is hit.

Machine guns cannot destroy the ship's hull or guns, but can kill the crew. If the section level contains an unarmoured conning tower

or unprotected guns or torpedo launchers, draw a ring round it on the ship plan. The gun cannot shoot during its next opportunity to fire, and a conning tower is out of action for one move. Roll a D6 for any commander present. If the roll exceeds his competence plus 2, he is killed.

Strafing attacks occur as part of the normal fire sequence, so if a squadron does not shoot first, the Quickfirers on the ship may eliminate some of the aircraft. Combined attacks can be made by sending in fighters and bombers simultaneously.

Torpedoes

Flyers at low level may drop their torpedoes at the same time as ships launch torpedoes. Only short range torpedoes may be carried. Since the torpedo warhead is smaller than the conventional, when dicing for effect, adjacent sections are devastated on a roll of 4+. When making a torpedo attack with aircraft, the double width torpedo attack marker used.

A.8 – G & H Guns

These are high velocity 3.4" to 4.1" guns (88mm to 105mm), with a performance between the existing Q and F guns. G guns are low angle anti-torpedo boat weapons that are capable of firing at surface or low level air targets. H guns are their equivalent as high-angle weapons that can only fire at low and medium level air targets. They are not interchangeable, and are not "dual purpose".

G and H guns are only available at Gun Technology 1 and 2, and the to hit charts already take this into account.

To hit chances at Technology Level 1 for G and H guns firing at Air Craft. Add 10 for Technology level 2				
Target	6"	12"	18"	24"
Surface (G guns only)	50	30	10	0
Low (G or H guns)	40	20	0	
Medium (H guns only)	20	0		

A.9 – Damage effects

Bombs can penetrate any armour. Roll a D6 and a D10 for hits on ships or use the land bombardment rules. Hits on ships destroy the section level hit and all the levels above it on the same section.

Hits on airships only take effect if they hit a gas section or one containing one of the systems referred to in the table overleaf.

A.10 – Damage control

An airship crew may try to repair the steering, propulsion or elevators by rolling their damage control value or less on 1D6.

A.11 – Barrage Balloons

These may be present in some scenarios, either towed behind ships or used to defend land bases. Ships may carry one captive balloon. When deflated it is stored in the highest hull level of the furthest aft hull section. The ship must begin a scenario with the balloon already inflated if it is to be used.

A barrage balloon is a low altitude obstacle. Airships automatically collide with them; flyers moving through them have to make a crew test per aircraft using the Airmanship skill to avoid hitting them.

Barrage balloons have bases $\frac{3}{4}$ " wide and $1\frac{1}{2}$ " long. They are shot at as if they are airships, and have Hydrogen as lifting gas, unless they are American in which case Helium may be used. Ships towing a barrage balloon may not trace a line of sight through it, though an enemy may do so. Since an aircraft that ends its move at low altitude cannot pass through the balloon's base without risk, a number of ships in echelon or line abreast formation all towing

barrage balloons can present an obstacle to attacks.

When shot down, barrage balloons are jettisoned and removed from play.

A.12 – Float Planes

To lower float planes onto the sea and recover them requires the parent ship to be stationary and to be equipped with at least one crane. In calm sea conditions it takes one turn to pick up or lower one aircraft. A crew may also attempt to handle aircraft during rough sea conditions and this requires a successful Crew Test.

Float planes cannot be handled during heavy seas or storm conditions

If using the detailed crew skills, aircraft handling is covered by Seamanship, re-arming uses Gunnery.

Hits on hangars destroy any planes inside them and automatically add 1 to the fire level.

A.13 – Recovering and Re-arming Aircraft

If planes are designed to carry bombs or torpedoes, these are stored in the ship's magazine and reloads are available at no extra cost in weight.

Aircraft carried in a hangar on an airship can be reloaded as long as the magazine has not been destroyed.

To rearm any aircraft requires a successful Crew Test.

Aircraft fitted with a sky hook can be retrieved by Airships to be rearmed.

<i>Damage Effects on Airships</i>		
GAS	Gas section	Lose 1 lift. A second hit in the same place causes no further loss of lift but starts a fire.
STG	Steering gear	When all are lost, as for ships
ELE	Elevators	When all are lost, roll Airmanship or below on D6 to change height voluntarily.
CON	Control car	The same as a Conning Tower hit on ships. The bombsight is destroyed
PROP	Propulsion	When these power rotors, lift is lost. Otherwise horizontal speed is lost as shown on the record card.
MAG	Magazine	If hit in the magazine the Airship explodes.
GUN	QF + MG	Can no longer fire. They can be jettisoned to save weight.
HAN	Hanger	Any embarked aircraft are lost. Previously launched aircraft cannot be recovered
FIRE	Fire	Roll immediately for the location. Fires in a hydrogen gas section (whether previously hit or not) will cause the airship to explode, otherwise the section level affected is destroyed. Any flyers in contact must roll their crew rating or less on 1D6 to survive.
ROT	Rotor unit	Lose 1 unit of lift

B — DESIGN RULES FOR AIRSHIPS AND AIRCRAFT

B.1 – Airship Design Rules

Points values and technology levels

Airships are designed with a lift of between 2 and 21, which represents the payload of engines, bombs, guns and aircraft that can be carried. Lift is provided by either gas or rotors. In our time-line, only the USA may employ Helium.

The points value of an airship is LIFT x 1000, modified by technology in exactly the same way as ships, rounded to the nearest 100. This gives a price for Crew Quality 2. The Technology fields and modifiers are shown in the table at the foot of the page. There are no negative modifiers.

Design sequence

Choose the lift and technology to be used. This will determine the number of section levels that must contain gas or rotors. Next select the load of engines, bombs, guns, and embarked aircraft, which cannot exceed the lift available, and draw the airship plan on its record card, which is the same 10 x 6 grid used for ships, but with the Special Effect FIRE boxes on sections 1 and 10 of level 6.

Section levels containing construction components must be adjacent to at least one other section level.

Gas bag area

All gas section levels must be above level 6 and must adjoin along at least one edge. A convenient way to show gas areas is to colour that part of the card with a yellow highlighter, or edge it with a distinctive colour.

Lift is shown in the table below. Take the desired lift and gas type. The number shows the minimum number of gas bag section levels required to provide that lift.

Rotors

These are shown by a stylised propeller symbol, or ROT. Each

Lift	2	3	4	5	6	7	8	9	10	11
Hydrogen	8	10	13	15	17	19	21	23	25	27
Helium	9	11	14	17	19	21	23	25	27	29
Lift	12	13	14	15	16	17	18	19	20	21
Hydrogen	28	30	31	33	34	36	37	38	40	41
Helium	31	33	34	36	37	39	40	42	44	45

provides 1 unit of LIFT. They must be on levels above the rest of the hull and may be one above the other, representing side-by-side or contra-rotating vanes. Note that some power types will not provide sufficient lift (e.g. a steam-powered ornithopter). Rotors need an engine to power them, mounted in the same section below them.

- Steam engines will power 1 rotor each;
- Internal combustion engines will power 2 rotors each;

- Advanced engines will power 3 rotors each.

Engines

A section level below 4 may contain one or two engines, which either provide lift via a rotor, or propulsion. Engines weigh 1 each. The speed obtained is calculated by using the Propulsion calculation earlier in this volume.

Take the LIFT you need and multiply it by 1000 and treat as displacement in the calculation. Replace SPEED UNITS with the AIR SPEED IN UNITS divided by 6. The result, rounding any fraction up to the next whole number, indicates the number of propulsion boxes required. You will find that certain combinations will not work. It is permitted to fit 2 PROP in one section level if necessary due to the limited space on the card.

Smaller airships fit half propulsion rooms in the same manner as ships. You may also fit 2 x ½ PROP in one Section Level if necessary.

Magazines

An airship carrying bombs must have a magazine, which is located on level 5 or 6. Each salvo of bombs has a weight of 1.

Hangars

Airships designed to launch and retrieve aircraft have a hangar at level 5 or 6. Between 3 and 6 aircraft forming a single squadron may be carried. The total weight is found by adding up the capacity of all the aircraft, dividing this by 10, and rounding to the nearest whole number (halves round up).

Quickfirers

An airship's Quickfirers are light weight machine cannon with an equivalent effect to the more numerous but slower firing light guns on ships. A Q must be at level 5 or 6 and has a weight of 1.

Machine guns

A firing position contains two machine guns and may be on top of the hull at the highest level occupied by gas bags, or at level 5 or 6. Each firing position has a weight of 1.

Control Car

An airship has one control car in any one section from 1 to 5 at level 5 or 6. It may be in the same section level as a machine gun position, but not other systems. The control car contains the bombsight if any and does not count against lift capacity.

Steering fins and elevators

Up to 2 of each of these may be carried. They are located on the rearmost section of the hull and do not count towards the load.

Horizontal motion propellers

These are normally drawn in the same section level as the engine that powers them, but need not be so long as it is clear which engine powers what. (These are lost when their engine is destroyed.)

Airship Technology Fields					
Technology Level	Lift maximum + 10% per level	Lifting method + 10% per level	Bombsight + 10% per level	Aircraft transport + 10% per level	Propulsion + 10% per level
Basic level 0	6	Hydrogen gas	Eyeball	None	Steam
Level 1	12	Helium gas	Telescopic	Launch	Internal combustion
Level 2	21	Rotors	Calculator	Launch and recover	Advanced

B.2 – Aircraft Design Rules

Aircraft are classed by their capacity, which represents the weight of all the fittings and crew, apart from the basic airframe, pilot and controls. The points value of a single aircraft is its capacity x 10, modified by technology in the same way as a ship, then rounded to the nearest 10 points. This assumes that the Crew is level 2.

A squadron is purchased at a cost equal to the aircraft points times their number, then modified by the crew quality, again rounded to the nearest 10 points.

A skyhook is a device allowing aircraft to be recovered by airships after launch.

A supercharger allows the aircraft to operate at high altitude.

Float equipped planes can operate from ships.

Aircraft Technology levels and modifiers are shown in the table below. There are no negative levels.

Design sequence

Choose the capacity, engine technology and speed. This will give the capacity used up by the engine. Other equipment and crew can then be added up to the capacity maximum.

Engine performance table

The figure to the left of the slash in the table below is the capacity occupied by a basic engine, that to the right the capacity of an improved engine.

The speeds shown in Speed Units are for Level Flight or Dive/Climb.

Capacity of Aircraft						
Speed	6	8	10	12	16	20
30/15	2/2	3/2	4/3	5/4	6/5	7/5
35/20	3/2	4/3	5/4	6/5	7/5	8/6
40/25	4/3	5/4	6/5	7/5	8/6	9/7
45/25	5/4	6/5	7/5	8/6	9/7	10/8
50/30	—	7/5	8/6	9/7	10/8	11/8
55/30	—	—	9/7	10/8	11/8	12/9
60/35	—	—	—	11/8	12/9	13/9
65/35	—	—	—	—	13/9	14/10

Crew and equipment

All aircraft require a pilot to fly the plane. He can operate one weapon per turn and does not count against capacity, though his weapon will do. Extra crew can be carried, each of whom is able to operate one weapon.

Weapons and other fittings use the following capacity:

Examples of Aircraft Construction

Equipment	Weight
Extra crew (per man)	2
Rifle and ammunition	1
Machine gun and ammunition	2
Fabric Ripper	1
Bomb salvo	4
Torpedo	8
Skyhook	1
Floats	1
Supercharging	1

The basic Wright Flyer with a rifle for the pilot and nothing else using basic technology gives an Airspeed of 45 units and a cost of 60 per aircraft.

Going to the other extreme a large bomber with again basic engines and 3 salvos of bombs has a speed of 30 and costs 260 points per aircraft. It has capacity 20 =200 points, increased by 20% for the size of airframe and 10% for the ability to drop bombs (e.g. 200 x 130%).

A fast interceptor with speed 60 and a machine gun for the pilot requires capacity 12, the engine size with improved propulsion is 8, the machine gun takes 2, and we will carry a fabric ripper and a skyhook, each taking 1 capacity. the basic cost is 120, increased by:

- 10% for size
- 20% for machine gun technology
- 20% for the skyhook technology
- 10% for the propulsion

making a total of 60%. 120 x 160% comes to 192, which is rounded to 190 points.

A Drachenflieger with a capacity of 8 fitted with a machine gun and a skyhook. It has a basic engine which gives it a speed of 40 and costs 110 points. (80 points plus 20% for machine gun and 20% for skyhook technology.)

The same aircraft fitted to carry one bomb salvo instead of the machine gun is slowed to 30 units (a lower powered engine needs to be fitted to get the bombs in). The cost is 80 basic plus 10% for the bombing ability and 20% for skyhook technology. This comes to 104, rounding to 100.

Aircraft Technology Fields					
Technology Level	Capacity Maximum + 10% per level	Weapon + 10% per level	Bomb type + 10% per level	Landing gear + 10% per level	Propulsion + 10% per level
Basic level 0	8	Rifle	None	Wheels	Basic
Level 1	12	Fabric Ripper	Bomb	Floats	Improved
Level 2	20	Machine-gun	Torpedo	Skyhook	Supercharger