

A & A GAME ENGINEERING PRODUCT SUPPORT

Product Support sheets come in the following types:

- Clarifications – these are more general clarifications about game play in response to questions from players.
- Corrections and Amendments – these include corrections to errors in game data, typing errors, and mistakes in game play that have come to light. These may come in two alternatives:
 - applicable to the most recent edition.
 - applicable to previous editions. These items will all have been incorporated into the latest edition on sale.
- New Rules – These rules will have been developed in response to requests from players. They may also have been developed from House Rules (see below).
- House Rules and player suggestions. House rules that are tested and work well may be incorporated into the basic rules if the author(s) approve.

The content of the sheets follows the same order as the rules in the book and the first sheet shows a summary of these sections and indicates those that are affected by the current sheet.

SCRAMBLE

RULE CORRECTIONS TO EDITIONS UP TO 3.1.1

DATE: 25 OCTOBER 2004

UPDATED 31 MARCH 2005

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Diving Half Loop (4.12)

When making a diving half loop the rules say that the dive is limited to 4 ALT. This value should be replaced by the Steep Dive value if using the Variable Dive Rates, and this should also be combined with the Pilot Skill Roll being modified by the Aerobic Modifier.

Revised Critical Hit table

A new table with different effects was introduced in the 3rd Edition to incorporate damage to the AB modifier. It also made the table slightly less bloody. The table is shown elsewhere in this update.

There is a typo in the first line of the revised table, which should show in result D10: 1 / D6: 6 the result AB -3.

The corrected table is shown below.

Ground Defences against Air Attack (8ff)

Added 31 March 2005. These rules have been reviewed and a replacement page is part of this update sheet.

Weapon Alignment (10.4)

Further tweaks added on 31 March 2005 are marked *.

There is a slight mistake in the rules here, which allow a single gun to be converged. This is clearly not correct. The rules are changed as follows:

* Add a new first bullet point:

- Single guns of different calibres cannot be converged, and a single gun alone can never be treated as converged.

* Bullet point 3 in the original text should be expanded with the additional sentence:

“...If they are converged, then ALL the wing guns must be converged.”

Current bullet points 4 and 5 should start with

...A pair of...

Current bullet points 6 and 7 should be deleted.

Data Corrections

Following a recent exchange of ideas and problems with one of our readers we discovered some errors in the numbers applied to late war German aircraft. While crunching the data we had used the engine HP including the effects of methanol boosts used at takeoff. This produced some rather excessive DV values. The numbers have been recalculated and the changes are reproduced below. While examining these numbers we also discovered some other items that were worth correcting at this time.

The review also looked other aircraft with DV in excess of 20. Many late Japanese aircraft have high DVs as do jets. In the case of the Japanese aircraft you have to live with this because they are very light and made extensive use of turbochargers which made them very manoeuvrable in combat, hence the high DV. There are some new OPTIONAL rules posted elsewhere on the website to cope with this issue.

For simplicity the following data only shows the corrected values. Other values are not changed. Aircraft marked with an * are those that appear in the current edition of Angels 15 (3.1). The aircraft data that is updated will be corrected in the next print run.

Critical Hit Table		D 6 roll for effect. 1 to 5 causes extra damage, 6 causes another CRIT		
D 10	Area hit	1,2,3	4,5	6
1	Controls	AB -1	AB -2	AB -3
2	Wings	ST +1	ST +2	ST +3
3	Wings	MVR +1	MVR +2	MVR +3
4	Tail	Climb +1	Climb +2	Climb +3
5	Airframe	DV -1	DV -2	DV -3
6	Engine cooling & RPM	Radiator hit: DV -1 & AS -1	Oil line ruptured: DV -2 & AS -2	Engine Overheats: DV -3 & AS -3
7	Structure and fuel	1D6 extra damage	2D6 extra damage	3D6 extra damage
		Any 6s rolled cause CRITs (not damage) in the usual manner		
8	Crew	1 (random) crewman dazed. Requires PSR or GSR to come round (roll when aircraft is activated next turn)		
9	Crew	1 (random) crewman wounded: deduct D6 from each skill	1 (random) crewman wounded: deduct D10 from each skill	1 (random) crewman killed
10	Smoke and Flames	A Smell of Burning ! Aircraft is ON FIRE. mark the model with a tuft of white smoke. Pilot must pass a PSR when aircraft is activated every turn. If you succeed the fire is extinguished. If you fail take 1 CRIT immediately.	Fire Raging ! Aircraft is ON FIRE. mark the model with TWO tufts of white smoke. Pilot must pass a PSR when aircraft is activated every turn. If you succeed ONE fire is extinguished. If a fire is still burning take 1 CRIT immediately.	BIG FIERY BOOM !: Direct hit on fuel/ordnance: The aircraft is destroyed and all crew killed.

Germany

*Focke-Wulf Fw 190A-4

DVL: 17
DVC: 19
Points value: 45

Focke-Wulf Fw 190A-4/R6

DVL: 16
DVC: 17
Points value: 60

*Focke-Wulf Fw 190A-4/U1

DVL: 13
DVC: 17
Points value: 47

*Focke-Wulf Fw 190A-5/R6

DVL: 16
DVC: 17
Points value: 60

*Focke-Wulf Fw 190A-5/U8

DVL: 15
DVC: 17
Points value: 60

*Focke-Wulf Fw 190A-6

DVL: 16
DVC: 17
Points value: 56

*Focke-Wulf Fw 190A-7

DVL: 16
DVC: 17
Points value: 57

*Focke-Wulf Fw 190A-8

DVL: 16
DVC: 17
Points value: 57

*Focke-Wulf Fw 190F-2

DVL: 16
DVC: 17
Points value: 56

*Messerschmitt Bf 109G-10/R1

DVL: 17
DVC: 19
Points value: 45

*Messerschmitt Me 309 (Heavy)

DVL: 19
DVC: 19
Dam 18
Points value: 66

*Messerschmitt Me 309 (Light)

DVL: 19
DVC: 19
Dam 18
Points value: 59

Great Britain

de Havilland DH.98 Mosquito F.B. Mk XVIII (Ro)

Points value: 175

*de Havilland DH.98 Mosquito F.B. Mk XVIII (Bo)

Points value: 123

Italy

Piaggio P.109B

The guns operated by the pilot and co-pilot are rear firing barbettes. The arcs of fire are limited so that they actually only fire to Rear Left and Rear Right arcs, being restricted by the fuselage. The pilot's gun should be marked Rear L and Co-Pilot's gun Rear R.

Japan

Kawasaki Ki.102b "Randy"

Points value: 103

Nakajima Ki.44-Ib Shoki "Tojo"

MvL: 3
MvC: 3
DVL: 21
DVC: 21
Dam 14
Points value: 42

Nakajima Ki.84-II Hayate "Frank"

MvL: 3
MvC: 3
DVL: 21
DVC: 21
Points value: 61

Russia

There is a typo in the name of one producer which should read Yakovlev.

*Polikarpov I-153BS

MvL: 2
MvC: 2
DVL: 18
DVC: 19
Dam 10
Points value: 28

*Polikarpov I-153P

MvL: 2
MvC: 2
DVL: 18
DVC: 19
Dam 10
Points value: 28

United States

We re-examined the data for this unusual experimental aircraft which had normal propeller propulsion, but had a jet added to gain speed. The original data was probably much too good and in reality the aircraft would have only used the conventional engine for most of the time.

*Ryan FR-1 Fireball (Prop)

Points value:	75
AS:	12
St:	4
MvL:	4
MvC:	4
Cli:	2
Ceil:	35
DVL:	12
DVC:	12
Dam	24
Dive:	
Sh:	2
StP:	4
Pwr:	5
Vert:	6
AB mod:	
ABL:	0
ABC:	0

*Ryan FR-1 Fireball (Prop+Jet)

Points value:	89
AS:	17
St:	5
MvL:	4
MvC:	4
Cli:	1
Ceil:	31
DVL:	15
DVC:	15
Dam	24
Dive:	
Sh:	3
StP:	5
Pwr:	7
Vert:	9
AB mod:	
ABL:	2
ABC:	2

Special Rules:

If using the aircraft in a game you have to decide whether you will use the "propeller only" version, or the "propeller plus jet" version each turn. Changing from one to the other requires a successful normal pilot skill roll (not a VPSR). If you fail then the change is not permitted.

New Aircraft

In response to a recent request we have added the Petlyakov Pe-8 to the aircraft data in Scramble from Edition 3.1.2.

Petlyakov Pe-8 (TB-7)

1940	11	3	6	5	5	15	7	8	120	353
Dive:	2	3	4	5		AB Mod:		-2	-2	

Note 9

Pilot		Unarmed
Co-Pilot		Unarmed
Bombardier	Nose	18 BPs (D6 x 1-3 damage/hit)
Gunner 1	Front	2 7.62mm ShKAS
Gunner 2	360°	1 20mm ShVAK
Gunner 3	Rear	1 20mm ShVAK
Gunner 4	Rear L	1 12.7mm Beresin UBS
Gunner 5	Rear R	1 12.7mm Beresin UBS

Note 9:

The Gunners 4 and 5 are located under the wings at the rear of the inner engine nacelles and shoot into the rear arc, but this is restricted by the fuselage to rear left and rear right.

8 — GROUND DEFENCES AGAINST AIR ATTACK

In addition to his aircraft the Defender can also purchase Anti Aircraft installations from his starting points. The costs are shown in the table below. Any of these installations is a potential target in any mission type, but can only be damaged by a Ground Attack. The costs of AA guns take into account their damage potential. AA installations that are destroyed give the Attacker VPs equal to their purchase price.

Type	Damage	DV	Cost / VPs
20mm Light FLAK (twin)	12	18	25
20mm Light FLAK (quad)	14	16	31
25mm Light FLAK (Japanese, triple)	14	16	28
Medium FLAK up to 40 mm (twin)	16	14	34
Medium FLAK up to 40 mm (quad)	18	12	47
Heavy FLAK 3" to 4.1"	40	12	52
Heavy Flak 128 mm and over	45	12	63
Searchlight	10	15	15

8.1 – Anti Aircraft Batteries

Anti-aircraft batteries may be represented by small card stock counters about 2 in diameter which mark their position on the table. You could also use small models as well. Batteries are made up of a varying number of weapons, depending on calibre. A battery represents between four to eight actual weapons together with a command post, and can shoot all round.

Heavy Batteries are guns of 3" and over, such as the 88 mm or 4.5", and have a slower rate of fire shooting heavy shells in an area barrage. 4 such weapons represent one battery.

Medium Batteries are slower firing direct fire guns, such as the 2pdr "pom-pom", 40mm Bofors or 37 mm FLAK M42, which could theoretically destroy a small aircraft with a single hit. 6 such weapons represent one battery.

Light batteries are direct fire light weapons such as 20 mm Oerlikon or 20 mm FLAK 30, which were often multi-barrelled, usually with a high rate of fire. Normally 8 such weapons represent one battery. In the case of Japanese triple 25 mm AA batteries on ships, 12 such weapons represent a battery but these attack at +1 for triple mounts cancelled by a penalty of -1 because of the calibre, doing 4 dice of damage.

Determining the number of batteries

This is normally of interest if creating an historical target, especially a ship. In this case you calculate the number of barrels in the size being determined, divide this number by 4, 6 or 8 (12 for Japanese 25mm) rounding to the nearest whole number, the result is the number of batteries. In the case of light and medium Flak these are twin (triple) mounts. In the case of twin mounts you may choose to swap two twins for a quad mount. This will be cheaper

Maximum horizontal range / Vertical range for FLAK	
20mm (3D6), 25mm (4D6)	16 / 1 to 5 ALT
37mm, 40mm, 2pdr "pom-pom" (7D6)	32 / 1 to 10 ALT
75mm, 76.2mm, 3" (1D6)	80 / 10 to 25 ALT
85mm, 88mm, 90mm, 105mm, 3.7", 4", 4.1"(1D6)	100 / 10 to 25 ALT
128 mm, 4.5" and larger (2D6)	120 / 10 to 48 ALT

but will reduce the number of targets you can engage.

Effect of range

Altitude increases the effective range to the target. Add 2 to the actual range to the target point for each Altitude.

When shooting at a target at 20,000 ft, the maximum horizontal range of an 88 mm Flak battery is reduced by 40 to 60. When setting up Flak positions, bear in mind the BRL used by bombers.

A light bomber at Altitude 8 and 17 units away from a 37 mm Flak gun is out of range being the equivalent of 33 units away.

8.2 – Heavy batteries

Heavy AA batteries have a horizontal range which depends on the height of the target. They cannot engage targets in certain positions because of fusing and safety considerations, so they have a minimum altitude restriction of Altitude 10 OVER LAND and a minimum range of 20 (including ALT modification). The maximum effective Altitude that the guns can shoot to is 25.

At the end of the shooting phase, place a heavy flak burst marker for each battery anywhere on the table within its range and altitude capability, marked with its ALT for the centre of the burst. In the next shooting phase, the damage caused by heavy Flak is resolved first. Roll 1 or 2 D6 for damage to every aircraft, both enemy and friendly, within 3 horizontally and 2 Altitude of the flak burst. Scores of 1 to 5 do small amounts of shrapnel damage, however each score of 6 means that a direct hit has occurred. Roll on the Critical Hit table adding 3 to the D6 score. The score, after modification, on the D6 denotes additional damage scored (i.e. from 4 to 9 damage) and a roll of 6 means an additional Critical Hit is scored, though this extra hit is rolled as normal (without adding 3 to the D6).

8.3 – Light and Medium batteries

Each battery fires and causes damage in the normal sequence, exactly like an aircraft, using a Gunnery Skill determined for the nationality involved. To save time in setting up and to add uncertainty, dice for the skill of each battery as it is needed. Note that as in the normal firing rules the "to-hit" score is for a twin-barrelled mount. Triple and Quadruple mounts only roll 1 die to hit but get a "to hit" bonus as shown below.

Light and medium AA batteries have modified target priorities. If they shoot, they must shoot at the closest target in range (regardless of whether it is a friend or an enemy!). A hint for novice players: DO NOT GET IN A DOGFIGHT NEAR YOUR OWN FLAK. It was in fact worse in real life, because Flak always fired if there was a target in range until told to cease fire!

Tactical modifiers for Light and Medium FLAK	
Triple Barrel	+1
Quadruple Barrel	+2
25 mm calibre	-1
37 mm, 40mm calibre, 2pdr "pom-pom"	-2
Target aspect Head-on	-2
Target aspect into tail arc	+2