STRINGBAGS !

CALCULATION ALGORITHMS FOR

STRINGBAGS

WARGAMES RULES FOR AERIAL COMBAT

1915 – 1918

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GAME ALGORITHMS

For those who would like to work out their own Stats for aircraft not included in the tables, these are the algorithms used to prepare the game data.

The results of the formulae shown should be rounded to the nearest whole number, with 0.50 being rounded up. Some results give a negative figure, in which case a fraction of – 0.5 or lower is rounded away from zero:

– 1.50 is – 2, while – 1.49 is – 1.

Some formulae need to use the unrounded results of another calculation.

Algorithms

1 Damage (Hit Points):
(Take off Weight Lbs minus weight of bombs) ÷ 115

2 Airspeed:
Max Speed mph ÷ 8.3333

3 Stall Speed:
Max Speed mph ÷ 25

4 Shallow Dive Limit:
Max Speed mph ÷ 25

5 Steep Dive Limit:
Max Speed mph ÷ 12.5

6 Power Dive Limit:
Max Speed mph ÷ 8.3333 PLUS Max Speed mph ÷ 25

7 Vertical Dive Limit:
(Max Speed mph ÷ 8.3333) x 2

8 DV Clean:
(Total horsepower for aircraft ÷ (take off weight – bomb weight)) x 160

9 DV Loaded:
(Total horsepower for aircraft ÷ take off weight) x 160

10 MV Clean *(see note below)*:
((Take off weight – bomb weight) x square root of (wing span in feet x length in feet)) ÷ 14000

11 MV Loaded *(see note below)*:
(Take off weight x square root of (wing span in feet x length in feet)) ÷ 14000

12 Climb:
If data shows a climb rate then use:
27.4 ÷ time in minutes to climb to 10000 feet.
If a lower height is shown then you will have to calculate *pro rata* using the height shown, which may not be actually correct but is usable.

If no climb data is shown, then use:
(DV Clean (*rounded result from step 8*) x 0.2079) – 0.6685

13 Operational Ceiling:
Ceiling (feet) / 100

14 Aerobatic Modifier Clean *(see note below)*:
Max Speed mph ÷ 25 – *unrounded* MV Clean

15 Aerobatic Modifier Loaded *(see note below)*:
Max Speed mph ÷ 25 – *unrounded* MV Loaded

16 Firepower factor:
This is used as part of the points value calculation and depends on the weapon type and feed system, and is the total value for each weapon on the aircraft. *This figure is NOT rounded*:
Vickers, Spandau, Marlin: 1.0
Parabellum, Schwarzlose: 0.8
Lewis, Hotchkiss, Revelli: 0.6

17 Bomb points:
Bomb weight lbs ÷ 100

18 Points value:
Damage x (Airspeed + DV Clean + 10 x Firepower factors + 10 x Climb rate + 10 x Bomb value) ÷ (10 x MV Loaded*)
* If the MV loaded is greater than the Airspeed then use Airspeed instead in this part of the calculation.

Note regarding MVR and Aerobatic Modifiers:

Unwieldy aircraft rules (Rules note 5) apply if the MVR is greater than the Airspeed AND equal to or less than 1.5 x the Airspeed.

If the MVR Airspeed is greater than 1.5 x the Airspeed then the aircraft is unmanoeuvrable (Rules note 6).