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# **Model Heron UAV in *FlightGear***

|  |  |  |  |
| --- | --- | --- | --- |
| **STT** | **Model** | **Parameter** | **Thumbnail** |
| 1 | Noratlas | Wingspan: 32.5 m  Length: 21.96 m  Height: 6.0 m  Empty mass: 13,075 kg  Engine: 2× SNECMA-manufactured Bristol Hercules 738/739 radial engine, 2,040 hp (1,520 kW) each  Max speed: 405 km/h |  |
| 2 | Northrop-P61 | Wingspan: 20.12m  Length: 15.11m  Height: 4.47m  Empty mass: 10,637 kg  Engine: 2 Pratt & Whitney R-2800-65W Double Wasp radial engines, 2250 hp each  Max speed: 589 km/h at 6095 m  Aileron, Elevator, Rudder |  |
| 3 | P-38-Lightning | Wingspan: 15.85m  Length: 11.53m  Height: 3.3m  Empty mass: 5800kg  Engine:  Max speed: 667km/h at 7620m |  |
| 4 | K-7 | Wingspan: 53m  Length: 28m  Height: 9.4m  Empty mass: 24400kg  Engine:  Max speed: 225km/h |  |
| 5 | Lockheed-P38 | Wingspan: 15.85m  Length: 11.53m  Height: 3.91m  Empty mass: 5800kg  Engine:  Max speed: 715km/h at 8530m |  |
| 6 | Bleriot-125  (Yasim) | Wingspan: 29.40m  Length: 13.83m  Height: 4m  Empty mass: 4440kg  Engine: 2 x Hispano-Suiza 12Hbr (550 hp each)  Max speed: 200km/h |  |
| 7 | Nord-2502  (Yasim) | Wingspan: 32.5m  Length: 21.96m  Height: 6m  Empty mass: 13075kg  Engine:  Max speed: 440km/h |  |
| 8 | Hughes-XF11  (Yasim) | Wingspan: 30.89m  Length: 19.94m  Height: 7.09m  Empty mass: 16800kg  Engine: 2 Pratt & Whitney R-4360-31 28 cyl. (3000 hp) (3000 hp)  Max speed: 724km/h |  |
| 9 | Fokker-G1  (Yasim) | Wingspan: 17.16m  Length: 10.87m  Height: 3.8m  Empty mass: 3325kg  Engine:  Max speed:475km/h at 4100m |  |
| **10** | **Cessna337**  **(JsbSim)** | **Wingspan: 11.5m**  **Length: 9.07m**  **Height:**  **Max mass: 2041 kg**  **Engine: piston**  **Max speed:** |  |
| 11 | Burnelli-CBY-3  (Yasim) | Wingspan: 26m  Length: 16.4m  Height: 6.3m  Empty mass: 7675kg  Engine:  Max speed: 382km/h |  |
| 12 | Fairchild-C119  (Yasim) | Wingspan: 33.3m  Length: 26.37m  Height: 8.08m  Empty mass: 18000kg  Engine:  Max speed: 491km/h at 4730m |  |

# **Appendix**

## **Noratlas**

**General characteristics**

Crew: 4-5

Capacity: 45 soldiers, 36 paratroopers, 18 patients with medics, or cargo

Length: 72 ft 1 in (21.96 m)

Wingspan: 106 ft 8 in (32.5 m)

Height: 19 ft 8 in (6.0 m)

Wing area: 1089 ft² (101.2 m²)

Empty weight: 28,825 lb (13,075 kg)

Useful load: 18,647 lb (8,458 kg)

Max takeoff weight: 48,500 lb (22,000 kg)

Powerplant: 2× SNECMA-manufactured Bristol Hercules 738/739 radial engine, 2,040 hp (1,520 kW) each

**Performance**

Maximum speed: 251 mph (405 km/h) under full load

Cruise speed: 199 mph (320 km/h) at 1,500 meters

Range: 1,550 mi (2,500 km)

Service ceiling: 23,300 ft (7,100 m)

Rate of climb: 1,080 ft/min (5.5 m/s)

Empty weight 13300 kg

Gross weight 21700 kg

Max speed 405 km/h at 1500 m

Cruise speed 320 km/h at 1500 m

Ceiling 7100 m

Climb 6 m/sec

Take-off field 810 m

Landing field 420 m

Engines 2 SNECMA-Bristol Hercules 738/739/758/759 of 2040 hp each

## **Northrop-P61**

## **P-38-Lighning**

**General characteristics**

**Crew: One**

Length: 37 ft 10 in (11.53 m)

Wingspan: 52 ft 0 in (15.85 m)

Height: 9 ft 10 in (3.00 m)

Wing area: 327.5 ft² (30.43 m²)

Airfoil: NACA 23016 / NACA 4412

Empty weight: 12,780 lb (5,800 kg)

Loaded weight: 17,500 lb (7,940 kg)

Max takeoff weight: 21,600 lb (9,798 kg)

Powerplant: 2× Allison V-1710-111/113 (143/-145) liquid-cooled turbosupercharged V-12, 1,600 hp (1,194 kW) each

Zero-lift drag coefficient: 0.0268

Drag area: 8.78 ft² (0.82 m²)

Aspect ratio: 8.26

**Performance**

Maximum speed: 414 mph at 25,000 ft (667 km/h at 7,620 m) (360 kt)

Stall speed: 105 mph (170 km/h) (91.24 kt)

Range: 1,100 mi combat, 2,600 mi ferry (1,770 km / 3,640 km)

Service ceiling: 44,000 ft (13,400 m)

Rate of climb: maximum: 4,750 ft/min (1,448 m/min)

Wing loading: 53.4 lb/ft² (260.9 kg/m²)

Power/mass: 0.16 hp/lb (0.27 kW/kg)

Lift-to-drag ratio: 13.5

**Armament**

1x Hispano M2(C) 20 mm cannon with 150 rounds (2 AP, 2 tracer and 2 HE ammo belt composition) and 4x Colt-Browning MG53-2 0.50 in (12.7 mm) machine guns with 500 rounds per gun. The rate of fire was about 650 rounds per minute for the 20x110 mm cannon round (130 g shell) at a muzzle velocity of about 880 m/s, and for the 12.7x99 mm MGs (43-48 g), about 850 rpm at 840 m/s velocity.

4x M10 three-tube 4.5 in (112 mm) rocket launchers or:

10x 5 in (127 mm) HVAR's (High Velocity Aircraft Rocket) and/or:

either 2x 2,000 lb (908 kg) or 2x 1,000 lb (454 kg), 4x 500 lb (227 kg) or 4x 250 lb (114 kg) bombs

## **K-7**

**General characteristics**

Crew: 11 (2 pilots, navigator/bombardier, radio operator/gunner (nose 20mm cannon), flight engineer, 4x gunners (twin DA machine-guns in four gondola positions), 2x gunners (20 mm cannon in tail boom tips)

Capacity: (120 passengers / 7,000 kg (15,432 lb) cargo, in civilian configuration)

Length: 28 m (91 ft 10 in)

Wingspan: 53 m (173 ft 11 in)

Height: 12.4 m (40 ft 8 in) (estimated to top of engine nacelle)

Wing area: 454 m2 (4,890 sq ft)

Aspect ratio: 6.2

Airfoil: root: TsAGI R-II (22%) ; tip: TsAGI R-II (19%)[8]

Empty weight: 24,400 kg (53,793 lb)

Gross weight: 38,000 kg (83,776 lb) normal

42,400 kg (93,500 lb) maximum bombload

Max takeoff weight: 46,500 kg (102,515 lb)

Fuel capacity: 9,130 L (2,410 US gal; 2,010 imp gal) in wing tanks

Powerplant: 7 × Mikulin AM-34F V-12 liquid-cooled piston engines, 560 kW (750 hp) each

Propellers: 2-bladed fixed-pitch propellers

**Performance**

Maximum speed: 225 km/h (140 mph, 121 kn)

Cruise speed: 180 km/h (110 mph, 97 kn)

Range: 1,600 km (990 mi, 860 nmi)

Service ceiling: 4,000 m (13,000 ft)

Wing loading: 84 kg/m2 (17 lb/sq ft)

Power/mass: 0.084 kW/kg (0.051 hp/lb)

**Armament**

Guns:

3x 20 mm (0.79 in) cannon (at least)

8x 7.62 mm (0.30 in) machine guns (at least)

Bombs: maximum 19,000 kg (42,000 lb) of bombs

## **Lockheed-P38**

**General characteristics**

Crew: 1

Length: 37 ft 10 in (11.53 m)

Wingspan: 52 ft 0 in (15.85 m)

Height: 12 ft 10 in (3.91 m)

Wing area: 327.5 sq ft (30.43 m2)

[Aspect ratio](https://en.wikipedia.org/wiki/Aspect_ratio_(aeronautics)): 8.26[[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

[Airfoil](https://en.wikipedia.org/wiki/Airfoil): root: [NACA 23016](https://en.wikipedia.org/wiki/NACA_airfoil); tip: NACA 4412[[168]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-Selig-173)

Empty weight: 12,800 lb (5,806 kg) [[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

Gross weight: 17,500 lb (7,938 kg) [[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

Max takeoff weight: 21,600 lb (9,798 kg)

Powerplant: 2 × [Allison V-1710](https://en.wikipedia.org/wiki/Allison_V-1710) (-111 left hand rotation and -113 right hand rotation) V-12 liquid-cooled turbo-supercharged piston engine, 1,600 hp (1,200 kW) each [WEP](https://en.wikipedia.org/wiki/War_emergency_power) at 60 inHg (2.032 bar) and 3,000 rpm

Propellers: 3-bladed [Curtiss](https://en.wikipedia.org/wiki/Curtiss) electric constant-speed propellers (LH and RH rotation)

**Performance**

Maximum speed: 414 mph (666 km/h, 360 kn) on Military Power: 1,425 hp (1,063 kW) at 54 inHg (1.829 bar), 3,000 rpm and 25,000 ft (7,620 m)[[169]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-FOOTNOTECrosby200396-174)

Cruise speed: 275 mph (443 km/h, 239 kn)

Stall speed: 105 mph (169 km/h, 91 kn)

Combat range: 1,300 mi (2,100 km, 1,100 nmi)

Ferry range: 3,300 mi (5,300 km, 2,900 nmi)

Service ceiling: 44,000 ft (13,000 m)

Rate of climb: 4,750 ft/min (24.1 m/s)

Lift-to-drag: 13.5

Wing loading: 53.4 lb/sq ft (261 kg/m2) [[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

[Power/mass](https://en.wikipedia.org/wiki/Power-to-weight_ratio): 0.16 hp/lb (0.26 kW/kg)

[Drag area:](https://en.wikipedia.org/wiki/Zero-lift_drag_coefficient) 8.78 sq ft (0.82 m2)[[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

[Zero-lift drag coefficient](https://en.wikipedia.org/wiki/Zero-lift_drag_coefficient): 0.0268[[167]](https://en.wikipedia.org/wiki/Lockheed_P-38_Lightning#cite_note-NASA._Quest,_Appendix_A,_Table_III-172)

**Armament**

Guns:  
1× [Hispano M2(C) 20 mm](https://en.wikipedia.org/wiki/Hispano-Suiza_HS.404) cannon with 150 rounds

4× [M2 Browning machine gun](https://en.wikipedia.org/wiki/M2_Browning_machine_gun) [0.50 in (12.7 mm)](https://en.wikipedia.org/wiki/.50_BMG) machine guns with 500 rpg.

Rockets: 4× M10 three-tube 4.5 in (112 mm) [M8 rocket](https://en.wikipedia.org/wiki/M8_(rocket)) launchers; or:

Bombs:

Inner hardpoints:

2× 2,000 lb (907 kg) bombs or drop tanks; or

2× 1,000 lb (454 kg) bombs or drop tanks, plus either

4× 500 lb (227 kg) bombs or

4× 250 lb (113 kg) bombs; or

6× 500 lb (227 kg) bombs; or

6× 250 lb (113 kg) bombs

Outer hardpoints:

10× 5 in (127 mm) [HVARs](https://en.wikipedia.org/wiki/HVAR) (High Velocity Aircraft Rockets); or

2× 500 lb (227 kg) bombs; or

2× 250 lb (113 kg) bombs

## **Bleriot-125**

**General characteristics**

Crew: two pilots and one navigator

Capacity: 12 passengers

Length: 13.83 m (45 ft 4 in)

Wingspan: 29.4 m (96 ft 5 in)

Height: 4.0 m (13 ft 1 in)

Wing area: 100.0 m2 (1,076 sq ft)

Empty weight: 4,440 kg (9,789 lb)

Gross weight: 7,260 kg (16,006 lb)

Powerplant: 2 × [Hispano-Suiza 12Hbr](https://en.wikipedia.org/w/index.php?title=Hispano-Suiza_12H&action=edit&redlink=1) , 410 kW (550 hp) each

**Performance**

Maximum speed: 220 km/h (137 mph, 119 kn)

Range: 1,000 km (621 mi, 540 nmi)

## **Nord-2502**

**General characteristics**

Crew: 4-5

Capacity: 45 soldiers, 36 paratroopers, 18 patients with medics, or 8,458 kg (18,647 lb) cargo

Length: 21.962 m (72 ft 1 in)

Wingspan: 32.5 m (106 ft 8 in)

Height: 6 m (19 ft 8 in)

Wing area: 101.2 m2 (1,089 sq ft)

[Aspect ratio](https://en.wikipedia.org/wiki/Aspect_ratio_(aeronautics)): 10.5

Empty weight: 13,075 kg (28,825 lb)

Max takeoff weight: 20,603 kg (45,422 lb)

Fuel capacity: 5,090 L (1,344.6 US gal; 1,119.6 imp gal)

Powerplant: 2 × [SNECMA](https://en.wikipedia.org/wiki/SNECMA)-manufactured [Bristol Hercules 738](https://en.wikipedia.org/wiki/Bristol_Hercules_738) 14-cylinder air-cooled [sleeve-valve](https://en.wikipedia.org/wiki/Sleeve-valve) radial piston engines, 1,558 kW (2,089 hp) each without torquemeters

Hercules 739 with torquemeters

Hercules 758 / 759 with reversible-pitch propellers

Propellers: 4-bladed constant-speed fully-feathering non-reversible propellers (Hercules 738 / 739)

**Performance**

Maximum speed: 440 km/h (270 mph, 240 kn) at 21,000 kg (46,297 lb) AUW

405 km/h (252 mph; 219 kn) fully loaded

Cruise speed: 324 km/h (201 mph, 175 kn) at 1,500 m (4,900 ft)

335 km/h (208 mph; 181 kn) at 3,000 m (9,800 ft)

Range: 2,500 km (1,600 mi, 1,300 nmi)

Service ceiling: 7,500 m (24,600 ft)

Rate of climb: 6.25 m/s (1,230 ft/min) at sea level

4.75 m/s (935 ft/min) at 3,000 m (9,800 ft)

1 m/s (200 ft/min) at 1,500 m (4,900 ft)

Wing loading: 207.5 kg/m2 (42.5 lb/sq ft)

Take-off run: 660 m (2,170 ft)

Take-off distance to 15 m (49 ft): 820 m (2,690 ft)

Landing run: 420 m (1,380 ft) with reverse pitch

Landing distance from 15 m (49 ft): 790 m (2,590 ft)

## **Hughes-XF11**

## **Fokker-G1**

## **Cessna337**

**General characteristics**

Crew: 1

Capacity: 5 passengers

Length: 29 ft 9 in (9.07 m)

Wingspan: 38 ft 09 in (11.81 m)

Height: 9 ft 4 in (2.84 m)

Wing area: 201 sq ft (18.7 m2)

[Aspect ratio](https://en.wikipedia.org/wiki/Aspect_ratio_(aeronautics)): 7.18:1

[Airfoil](https://en.wikipedia.org/wiki/Airfoil): NACA 2412 at root, NACA 2409 at tip

Empty weight: 2,655 lb (1,204 kg)

Max takeoff weight: 4,400 lb (1,996 kg)

Fuel capacity: 92 US gal (77 imp gal; 350 L) normal, 128 US gal (107 imp gal; 480 L) with auxiliary tanks

Powerplant: 2 × [Continental IO-360-C](https://en.wikipedia.org/wiki/Continental_IO-360) air-cooled [flat-six](https://en.wikipedia.org/wiki/Flat-six) piston engine, 210 hp (160 kW) each

Propellers: 2-bladed McCauley fully-feathering, constant-speed propeller, 6 ft 4 in (1.93 m) diameter

**Performance**

Maximum speed: 199 mph (320 km/h, 173 kn) at sea level

Cruise speed: 144 mph (232 km/h, 125 kn) at 10,000 ft (3,000 m) (econ cruise)

Stall speed: 69 mph (111 km/h, 60 kn) (flaps and undercarriage down)

Range: 965 mi (1,553 km, 839 nmi) (econ cruise, normal fuel)

Service ceiling: 19,500 ft (5,900 m)

Rate of climb: 1,200 ft/min (6.1 m/s)

Takeoff distance to 50 ft (15m): 1,545 ft (471 m)

Landing distance from 50 ft (15m): 1,650 ft (500 m)

## **Burnelli-CBY-3**

## **Fairchild-C119**