

Flyer SS - Description

The Flyer SS - General Description

- Carbon fiber fuselage
- Aluminum wings and tail feathers
- Fowler flaps
- Frise ailerons
- Wittman landing gears
- Wet wings
- Cargo door
- Electric flaps
- Electric trim
- Rotax 912S 100HP

Airplane structure and systems

Fuselage

Resin

infusion moulded composite structure consisting of a carbon fiber/epoxy resin laminate with rigid PVC, birch plywood and balsa cores.

Wing and tail feathers

The all-metal wing is a single-strut, single spar construction, covered with aluminum skins. The horizontal empennage features a cantilever stabilizer structure covered with aluminum and with fibreglass tips. The vertical tail, ailerons, flaps and elevator are also aluminum covered. Ailerons, elevator are mass balanced.

Controls

The airplane features dual control sticks, dual rudder pedals and a dual differential braking system. The Frise Ailerons are deflected through a bellcrank / pushrod mechanism mounted on ball bearings. The Fowler flaps are operated by a torque tube connected to an electric motor. Ailerons deflect 30° up and 17° down and flaps 40°. The rudder is cable operated while the elevator is operated via a set of 2 push-pull tubes connected by a central bellcrank. The trim tab is controlled by an electric servo motor.

Landing gears

The main Wittman type landing gear legs are made of heat-treated 6150 HR steel rods, faired with fibreglass. The system consists of a right and a left leg, bolted in two landing gear sockets located at each end on an extruded aluminum carry through square tube laminated in place in the bottom of the fuselage. The nose gear leg is made in the same fashion as the main gear but with a different camber. The wheel is mounted in an aluminum fork and suspension is provided by natural leg bending. The nose wheel is free and can rotate 360°.

Wheel and brakes

Cleveland 5 inch wheels and brakes with 5.00*5 tires are used for all three wheels. Brakes are toe operated and the KOLB FLYER SS offers differential braking from pilot and passenger seats.

Flaps

The flaps are electrically operated by an electric actuator. The flap control is located in the center console. They offer 5 positions from -4° to 40°.

Trim

One elevator trim, electrically operated, that combines as an anti-servo tab. Fixed trims are used for the rudder and the ailerons.

Cockpit

Two seats, side by side and adjustable, leather seat cushions, dual sticks, dual pedals, center console, top hinged bubble doors, blown acrylic windshield, windows and skylights, baggage compartment accessible via a cargo door on the pilot's side and over the central bulkhead. Three-point seat belts - shoulder harness for both seats.

Seats

The two seats are moving forward and aft and are electrically actuated. The control is done via a rocker switch located between the two seats on the center console.

Engine

The Rotax 912S develops 100 HP at 5,800 RPM for take-off and 95 HP continuous at 5,500 RPM. Stainless steel exhausts system. 4 cylinder, 4 stroke liquid/air cooled engine with opposed cylinders, dry sump forced lubrication with separate 3l (.8 gal US) oil tank, automatic adjustment by hydraulic valve tappet, 2 CD carburetors, mechanical fuel pump, electronic dual ignition, electric starter, integrated reduction gear $i=2.43$.

Limitations

Performances at sea level

100

hp @ 5,800 rpm (5 minutes)

95

hp @ 5,500 rpm (continuous)

Idle speed

1,400

rpm (approximately)

Oil pressure

29 - 73

psi (normal operating range)

psi (maximum during cold start)

12

psi (allowable below 3,500 rpm)

Oil temperature

266

°F (maximum) [130°C]

120

°F (minimum) [50°C]

190-230

°F (normal operating range) [90-110°C]

Cylinder head temperature

284

°F (maximum) [135°C]

Fuel pressure

2.2-5.8

psi (maximum)

Engine operating (Temp. limits)

-13 to 120

°F [-25 to 50°C]

