

**PROPOSAL FOR NEW
SM-92T Finist/Silver Fox**

robust, gallant light multipurpose turbine aircraft





AIRPLANE SM-92T Finist / Silver Fox

SM-92T is a light multipurpose airplane equipped with well known, dependable WALTER M601 turboprop engine and Avia AV803 constant speed propeller. The airplane has the STOL (short take off and landing) properties.

SM-92T airplane is in concept designed in such way to accommodate the requirements of an easy servicing and maintenance during service including the operations in complicated climate conditions beyond the Arctic Circle or in desert, and does need not for its operation approved fields (airports); it can operate from any efficient surface without any obstacle in the vicinity and with a sufficient bearing of the foot-wall.

Specially designed aerodynamically very high quality profile of the wing P-301 M-15 allows the airplane to utilize a wide range of speed, sufficiently big enough driving areas allow the operation of the airplane in an immense range of central positions which very positively influences the rating of user affability and above all safety. The airplane as a standard is equipped with dual flight controls, large sliding side doors so that it makes the operation of the airplane significantly more efficient

Spectrum of airplane uses:

- Transport of up to six passengers with luggage
- Transport of cargo up to 900 kgs (1984 lbs)
- Parachute air drops
- Monitoring of forest massifs with the possibility to carry an extinguisher in stand by state up to 900 kgs (1984 lbs) when the aircraft is immediately ready to intervene in case of fire occurrence (the most effective measure against fire break outs)
- Search and rescue air services
- Agricultural air work and services after fitting a special agricultural equipment
- Ecological monitoring
- School flights
- Towing of gliders, banners

Certificate:

The airplane is certified by National Civil Aviation Authority (CAA) of the Hungarian Republic and Russian Federation in the category NORMAL (AP-23 certification status).

BASIC TECHNICAL DESCRIPTION OF THE AIRPLANE

SM-92T Finist / Silver Fox is a light, robust multipurpose utility all-metal airplane. The airplane structures are designed as all-aluminium shell with the emphasis on the application of the latest technology in the production process. The airplane is also construction wise designed for easy field maintenance – there is no „exotic“ material such as titanium used. Carbon or glass-fiber compounds are used in non-structural areas only such as sheeting and aerodynamic covers.

Airplane is powered by modern, dependable WALTER M601F turboprop engine and a three-blade propeller AVIA AV803 with a possibility of reverse thrust. Details about engine, propeller and associated systems are in detail described below. This engine type and propeller derivative has been for many years operated on hundreds of well known multiengine LET L-410 and other aircraft types all over the world in conditions from ambient temperatures around -50°C in Siberia, Russia to $+50^{\circ}\text{C}$ in African countries less significant problems.

SM-92T basic technical data:

- Length 9.974 m (390 In)
- Height 3.1 m (122 In)
- Wing span 14.856 m (585 In)
- Maximum take off mass (MTOM).....3000 kg (6614 lb)
- Empty mass1670 kg (3682 lb)
- Maximum useful load900 kg (1984 lb)
- Cabin height in the passenger area1.2 m (47,2 In)
- Cabin width in passenger area1.26 m (49,6 In)
- Cabin length in passenger area3.4 m (133,8 In)

Basic optional aircraft equipment :

- Kit for parachute jumping operation
- Additional fuel tanks
- Oxygen masks equipment
- Airframe de-icing system
- Propeller de-icing system
- Banner/glider towing equipment
- Sanitary equipment
- Pod container
- Simple and amphibious floats

Fuel system:

Standard aircraft fuel system consisting of wing integral tanks at total capacity of 840 liters (222 gal) located in front of wing main spar. Two fuel tank filler necks are accessible from top of wing, and are equipped by screens in order to avoid entering of coarse dirt to fuel tanks during refuelling. As option can be installed two additional wingtip fuel tanks at total capacity of 400 liters (106 gal.) raising total aircraft fuel capacity to 1240 liters (328 gal.). Additional tanks has filler necks on their own top part, and are also equipped by coarse filtering screens. On the bottom part of these auxiliary tanks are located feeding electric pumps. In the feed line from the tanks is also installed one small compensatory tank located in aft part of fuselage in order to avoid form of an air lock in fuel feeding system. Other major components in engine fuel feeding line are two fuel pumps (same type as used in auxiliary tanks), located underneath front part of cabin floor, fuel selector located on pilot pedestal, drain valves, and fine (microne type) main fuel filter equipped with by-pass valve and associated electric switch closed when by-pass valve opens. When fine filter is dirty, by-pass valve opens, and this status is signalled by cautionary light on pilot flight desk. It is warranted, that engine is able to normally run when all fuel feeding pumps are off. thanks to mechanical fuel pump installed directly on engine, where is located also last fuel filter before fuel entering to fuel control unit (FCU).

Fire protection:

In engine compartment are installed fire sensors with warning indication on pilot main light warning panel. There in engine compartment is also installed efficient fire-extinguishing agent governor in form of thin pipes around engine with jets on their ends, supplied in case of fire from engine fire extinguisher located behind pilot flight desk, which can be in case of engine fire activated by pilot by pulling extinguisher control handle.

Landing gear, wheels, brakes:

Landing gear of SM-92T was engineered by way, which allows airplane to be operated from/to off-airport field strips. Aircraft main landing gear is very robust, equipped as standard by OEM wheels with drum hydraulic brakes. As option can be installed in place of OEM wheels/brakes Cleveland wheels and very efficient, maintenance free Cleveland disc brakes, same model as installed on Cessna 208B aircraft. Tail landing gear is also very robust and maintenance free.

Ventilation, defrosting, heating:

SM-92T is equipped with effective cabin ventilating /heating/ defrosting system. Hot air is bleed from engine compressor through air ducts. Cold/hot air mix valve allow to adjust most comfortable temperature in the cabin. Part of hot bleed air is used for engine intake heating/de-icing.

Electrical system, lighting

Electrical system (minus pole grounded) of SM-92T basically consist of 24V/20 Ah aircraft starting/emergency power valve regulated lead acid battery (VRLA, non-spillable, non-hazardous maintenance free), 28V/200A (5,6 kW) electric starter-generator installed on engine accessory box governed by remote installed DMR 400 field excitation regulator, appropriate aircraft wiring harnesses, busses, circuit breakers and other related instrumentation like relays, signalling lights and other. Cautions or warnings are signalled by light panel on pilot flight desk.

As a standard are installed:

- back position light
- combined position lights with strobes on both wingtips,
- cabin lighting,
- instrument lighting
- taxi/landing light on wing leading edge
- external 28V power-in jack

All aircraft wiring is made from high quality MIL spec wires.

Instrumentation:

SM-92T in basic configuration is equipped by standard pitot-static system with electrically heated pitot/static tube on LH wing, set of connecting lines to instruments on cockpit and switching valve, allowing to feed instruments by alternate static pressure in case of plugged main static line, p.e. by dirt or bug, and a set of flight, engine and other instruments as described below. Aircraft is as a standard also equipped by stall warning system with sensor on LH wing leading edge, associated to warning horn and light on pilot flight desk.

Basic instrumentation package include:

Flight instruments:

- 1x airspeed indicator in KTS
- 1x VSI up to 4000 ft/min
- 1x sensitive altimeter in foot calibrated up to 35.000 ft
- 1x gyro-horizon
- 1x turn coordinator
- 1x standard standby-wet compass
- 1x fuel quantity gauge
- 1x volt-ampere indicator

Engine instruments:

- 1x prop RPM indicator
- 1x gas generator RPM indicator
- 1x torque meter indicator
- 1x ITT indicator
- 1x 3-way indicator

Other standard instrumentation:

- Stall warning system with sensor on LH wing leading edge
- Minimum fuel quantity sensors/lights
- Electrically heated pitot/static tube on LH wing

Basic instrumentation options:

- 2nd 1x sensitive altimeter in foot calibrated up to 35.000 ft
- 2nd gyro-horizon
- 2nd turn coordinator
- 2nd VSI up to 4000 ft/min
- Outside temperature gauge (OAT)
- Vertical card compass in place of standard wet compass
- Fuel flow computer

Avionics:

SM-92T avionics has its own 28V DC “avionics bus” supplied through separate “Radio master” circuit breaker/switch from main bus. This circuit breaker/switch is in case of its malfunction backed-up by another one, same circuit breaker/switch under guard cover, both located in overhead main electric panel. Power from avionics bus is distributed to all other separate avionic power circuit breakers. As an option can be installed separate switch/circuit for supplying power (by-passing main aircraft power switches/circuits) directly from aircraft battery (generally called also “Ground clearance switch”) through separate circuit breakers located in battery area allowing to supply power only to COM transceiver and audio box. This allows to essentially save battery energy during waiting for ATC clearance on ground, or in case of some aircraft electric fault it allows to keep continuous radio communication.

Basic avionics package include following equipment:

- One GARMIN GNS-430 combined COM transceiver/NAV/GPS receiver
- One Mid-Continent MD200 series CDI VOR/LOC/GPS indicator
- One Garmin GMA 340 Audio box with MKR receiver and voice activated intercom
- One Garmin GTX-330 mode S transponder
- One Ameri-King AK-350 mode C transponder/GPS encoding device
- One Artex ME-406 406 MHz ELT transmitter
- Two sets of headset jacks, PTT switch on LH and RH control column installed

Basic avionics options:

- “Ground clearance” kit
- Remote compass system / HSI
- DME system
- ADF system
- RMI
- Meteorological radar.

Avionics and equipment can be optionally customized depending on needs or requirements of the individual customer, including modern glass cockpit instrumentation.

Engine:

Technical description of the engine

WALTER M601F is a turboprop engine with a take off power of 580 kW (777SHP). Concept of the engine is two-shaft with a reverse flow of burnt gases. It is composed of a gas generator and a driving part with a power turbine and a reducer. The gas generator is composed of two step axial and one step radial compressor, generator turbine and a accessory gear box which also functions as an oil tank. The engine is controlled by FCU (Fuel Control Unit) and the electronic restrictor of engine parameters (IELU). The engine is certified by European EASA, FAA and MAK Russia.

- maximum take off power580 kW (777 SHP)
- maximum prop RPM.....2080
- fuel consumption170 kg/h (45 gal)
- Engine power at cruise speed490 kW
- propeller RPM at cruise speed1800 – 1900
- engine dry mass202 kg (445 lb)

Engine TBO:

3000 flight hours / 6600 cycles or 5 calendar years with option to extend calendar TBO up to 8 years – which occurs first. Engine total service time is not limited – it depending only on it physical condition.

Propeller:

Three-blade propeller AV-803 is all-metal double-acting variable pitch, constant speed propeller with the possibility of feathering, and a reverse thrust. The propeller is controlled by governor fitted onto the engine which keeps pilot chosen RPM by propeller control lever. Propeller is equipped as standard by maximum RPM speed limiter, and optionally can be equipped with 28V DC electrical de-icing system.

Propeller TBO:

3000 flight hours or 5 calendar years with the option to extend the calendar TBO to 8 years depending on condition of the propeller.

Aircraft basic performance data:

- Maximum operating speed300 km/h (162 Kts)
- Never exceed speed (VNE) 305 km/h (165 Kts)
- Maximum cruise speed 290 km/h (160 Kts)
- Economical cruise speed220 km/h (120 Kts)
- Best economical speed with a respect to the longest range190-220 km/h (102 – 120 Kts)
- Stall speed at maximum take off mass113 km/h (61 Kts)
- Rate of climb with full load 286 m/min (935 ft/min)
- Climb time to 4000m (FL 130) with full load14 min
- Maximum operating range1500 km (810 NM)
- Maximum element of side wind for take off/landing (from 90 degrees)18 m/sec (35 Kts)
- Descent time from 4000m (FL 130) at speed 250 km/h (descend rate 1000 m/min or 3280 ft/min).....4 min
- Vertical speed with feathered propeller- 240 m/min (-780 ft/min)
- Service ceiling 8200 m (27.000 ft)
- Take off distance with max. take off load – concrete 400 m (1312 ft)
- Take off distance with max. take off load – grass 500 m (1640 ft)
- Landing distance with max. take off load – reverse thrust – concrete280 m (920 ft)
- Landing distance with max. take off load – reverse thrust – grass200 m (650 ft)
- Take off distance with max. take off load with skis – snow500 m (1640 ft)
- Landing distance with max. take off load with skis – snow400 m (1312 ft)
- Take off distance with max. take off load – amphibious floats – water500 m (1800 ft)
- Landing distance with max. take off load – amphibious floats – water280 m (920 ft)
- Mmaximum range with max. fuel1500 km (810 NM)

Basic 2009 catalogue price SM-92T FINIST / SILVER FOX = 1 499 000 USD.

Delivery terms – individual contract of purchase.

Warranty conditions – Appendix No.2 to Contract of purchase.

If customer do not choose optional equipment, aircraft will be equipped with basic,VFR instrumentation with installed instruments and avionics specified above as “basic avionics package” and “basic instrumentation package”, with standard OEM wheels/drum brakes. Any options, external color design or optional custom equipment must be selected by the customer before or upon signing of the contract.

The sale terms will be divided into 10% deposit with the order, an additional 25% when the order is confirmed and the delivery date provided and 65% on the delivery.

