



# SKY RANGER - LW

5 April 2024



## THE SKYRANGER ADVANCED MILITARY TRAINING AIRCRAFT

### OBJECTIVES:

Puma Aero Marine Sky Ranger Long Wing (LW) OA-X is a high laminar flow gull wing, turbine “pusher” propeller, designed as a military trainer or possibly a reconnaissance, counter-insurgency (COIN) aircraft. The Sky Ranger is available at a very low cost compared to similar aircraft. A reliable aircraft, having great performance with a 60% low fuel burn. The heavy duty landing gear permits operation from unapproved airfields.

This design is perfect for operational requirements in conducting missions at hot high altitudes, flying low through mountain valleys and over the jungle. Sky Ranger being a “pusher” provides the pilots with a feel they’re flying a jet. With a full authority digital engine (or electronics) control (FADEC), is a system providing a single thrust lever. (Similar to the power lever found in the Falcon F-16)



This low cost, extremely reliable aircraft has impressive performance and unmatched pilot visibility.

The fuselage is based on the SEPECAT Jaguar T2 trainer. Made from welded aluminum frame and carbon fiber with Core-Cell hand lay-up vacuum infused skin panels. The panels are mechanically fastened, providing easy quick access for maintenance. The wing, tail booms and vertical stabilizer are also carbon fiber with Core-Cell and vacuum infused material. The horizontal stabilizer is constructed of aluminum.

The Sky Eagle is an extremely maneuverable aircraft, ideal for close-in support. This propeller, designed for In-flight reversing, is accomplished without disrupting air flow over the control surfaces. This makes the Sky Eagle an ideal aggressor and/ or defender in all ranges of flight.

The Sky Eagle utilizes the well founded Citation II (CE-550) jet air foil but made of carbon fiber, capable of lifting Sky Eagle straight away into the air and permitting operations from short field unapproved runways. The Sky Ranger is designed to incorporate many existing commercial “off the shelf” time-tested, obtainable, and reliable aviation components. The focus will be on avoiding components from areas that may be interrupted or compromised by international supply chain difficulties.

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- Dimensions:
  - ✓ Length: 44 ft 4 in (13.53 m)
  - ✓ Model LW Wingspan: 51 ft 7 in (15.7 m)
  - ✓ Height: 14 ft. (4.26 m)
  - ✓ Empty weight: 6,680 lb (2,840 kg)
  - ✓ Maximum Takeoff weight: 14,000 lb (6,350 kg)
  - ✓ Maximum Landing weight: 11,025 lb. (5,003 kg)
  - ✓ Fuel capacity internal: 1,620 lb (735 kg / 240 gals.)
- Performance
  - ✓ Maximum speed (VNE/VMO): 441 knots (816 km/h)
  - ✓ Cruise High speed: 425 knots (787 km/h, max. cruise)
  - ✓ Long Range Cruise: 285 knots @ Fuel Flow 42 gph (284 lb per hr / 128.6 kg per hr)
  - ✓ Stall speed: 98 knots (182 km/h) at maximum landing weight, with wheels and flaps down
  - ✓ Range: 1,410 nm.
  - ✓ Service ceiling: 35,000 ft (10,667 m) maximum certified ceiling,
  - ✓ Pressurization: Differential: 5 psi (2.26 kg) @ 30,000 ft (9,144 m)
  - ✓ Aspect ratio: 6.2:1
  - ✓ Airfoil: NACA 2418 at root, NACA 2412 at tip

- General Characteristics:

- ✓ Engine: Single General Electric GE93 series: Advanced Turboprop Engine de-rated to 1,650 sHp

Or

- ✓ P&W PT6-68E 1,600 sHp
- ✓ Propeller system: Avia V510 5-bladed quiet propeller, a five bladed pusher revisable propeller.



- ✓ The pusher propeller allows simulating the characteristics of a jet fighter.
- ✓ Integrated Engine plus Propeller: Single Power Lever control
- ✓ Tandem cockpit, (Rear crew has unobstructed view similar to the front crew member)
- ✓ Capable of operating Unmanned completely autonomously

- Cockpit

- ✓ Two Martin-Backer MK-17 ejection seats



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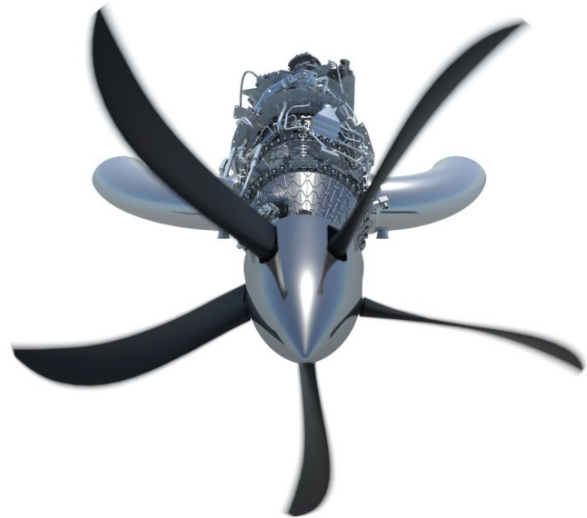
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### Power Plant:

- Engine: Single General Electric Catalyst GE93 series: Advanced Turboprop Engine 1,650 sHp Propeller system: Avia V510 5-bladed quiet propeller, a five-bladed pusher propeller. The pusher propeller allows simulating the characteristics of a jet fighter.
- Reversible pitch propeller
- Very low heat signature with exhaust being augmented and mixed by the propeller
- Lower Time Between Overhauls 4,000-6,000 hours with a Low overhaul cost
- Engine requires no hot section inspections between overhauls
- No fuel nozzles, using a slinger ring system (no nozzles to inspect or maintain)
- Speed brake
- Electric retractable landing gear
- Short rough field operations
- Long airframe and engine warrantee
- Normal Cruise: 272 kts @ Fuel Flow 42 gph (284 lb per hr / 128.6 kg per hr)



### Landing Gear:

- Heavy duty rugged design to operate from un-improved runway
- Hydraulic retractable landing gear
- Maximum landing gear extended speed VLE/VLO 175 knots
- Suspension oleo nitrogen over hydraulic struts

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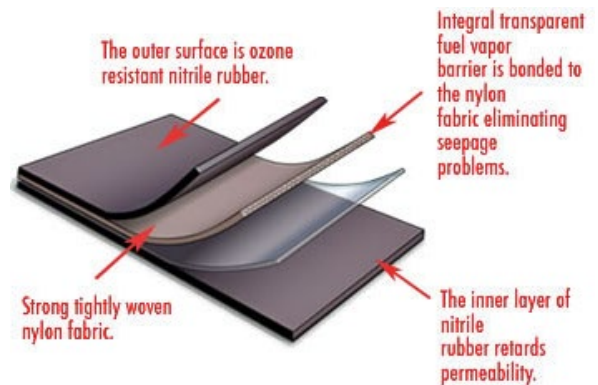
## Main Landing Gear:

- BERINGER AERO Four Wheel & Brakes series (RF-010)
- Dimensions : 18x5.5
- Steel floating disc
- These wheels and brakes are ETSO and TSO C26 certified
- Two Tubeless 850-10 10 ply tires (VTIRE 139 knots)
- Dual; twin piston brake caliper (EA-008.X)
- ANTI-SKID - ALIR system - pressure regulators
- Four brake hydraulic master cylinders
- Nose Gear: Dual wheel type
- BERINGER AERO two Wheels series (RA-014)
- Two Tubeless 500-5 6 ply tires (VTIRE 139 knots)
- Nose wheel steering direct to rubber petals



## Fuel System:

- Fuel tanks: Center hopper, left and right wing tank total Capacity 4,320 lb
- (1,960 kg / 640 gals.
- Engine driven fuel pump (high pressure)
- Primary driven boost pumps (low pressure)
- Three electric boost pumps one in each wing tank (low pressure)
- One airframe fuel filters
- Fuel cell are self-sealing, constructions conform to military MIL-T-6396
- Fuel management is automatically control



## Electrical System:

- Powered by 28V DC / 400 AMP Fail-safe System
- A 28V DC external power receptacle just aft of the right landing gear
- Starter-generator 400 AMP switches with line contactor limiter.
- Standby Alternator/Rectifier 200 AMP / 28VDC
- DC electrical power distribution system through a circuit breaker system
- Flaps
- One Main & One Standby Batteries MCI TRUE BLUE TB17 LITHIUM-ION BATTERY
- 17 amp-hour battery nominal at 23°C/73.4°F

## Hydraulic System:

- Landing Gear
- Speed Brake
- Brakes

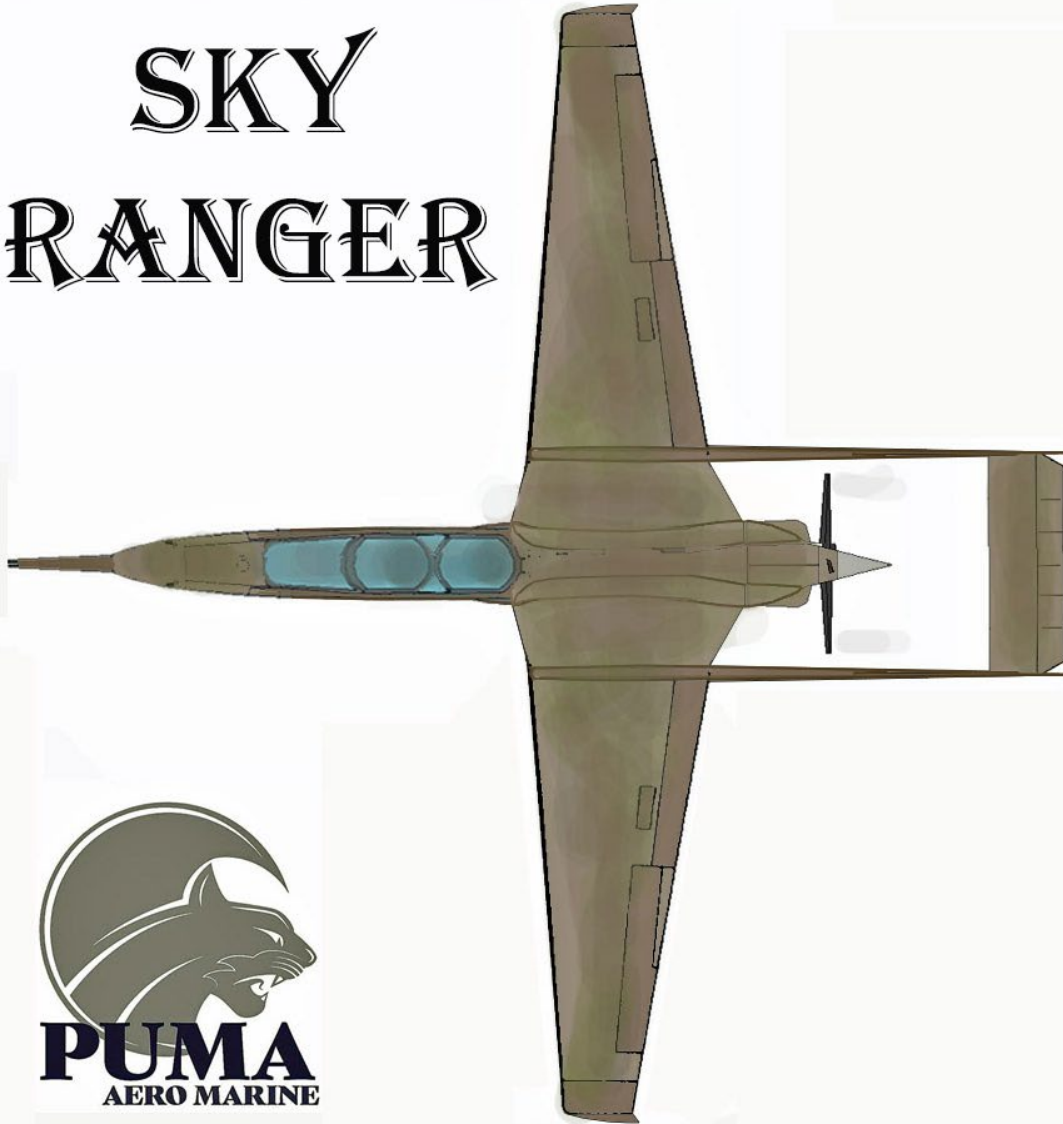
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