



MANTA AIRCRAFT UNVEILED FULL-SCALE MOCK-UP OF THE ANN 6

News / Manufacturer



Manta Aircraft debuted a full-scale mock-up of the all new hybrid-electric long range HeV/STOL ANN Plus. The ANN 6 is a multipurpose, six-seater air vehicle offering comfortable space for 1 pilot and 5 passengers - for personal mobility, business travel, medical and cargo transport operations. Combining helicopter versatility with airplane efficiency, this aircraft supports both VTOL & STOL, enabling operations anywhere - from airports to helipads to unprepared remote areas.

With a range of 300 km for VTOL operation and more than 1,000 km using a short airstrip for STOL operation, it offers unmatched mission flexibility, regardless of ground infrastructure. Its large radius allows extended missions without refueling, while batteries are recharged in flight, making it ideal for scenarios like outback, offshore and inter-regional operations. Perfect for both urban and remote locations, it delivers superior performance with minimal reliance on ground support.?

Hybrid propulsion & optimized ducted fan design for extended range and speed

The ANN 6 incorporates an advanced hybrid propulsion system, combining electric power with fuel-

based efficiency. Eight ducted fans, four of them tiltable positioned in the wings, are optimized for vertical lift, while the winged aircraft design enables efficient and high-speed cruise, placing it at the forefront of the eVTOL and eSTOL aircraft performance. This configuration not only enhances maneuverability in diverse environments but also achieves speeds and ranges that exceed conventional eVTOL air taxi capabilities – hence making it suitable for regional and inter-regional operations. Its hybrid powertrain is designed to offer significant flexibility: batteries recharge during flight, ensuring minimal downtime and maximizing mission readiness.?

Designed for Mission flexibility and high-end performance

The ANN 6 is purpose-built to address a wide variety of applications across urban, remote, and interregional environments. Its operational flexibility and large mission radius make it ideal for a variety of demanding scenarios, including efficient and fast travel options in remote areas, interconnection of smaller cities with no airports close by, remote area support, offshore logistics, and emergency services, where traditional aircraft may fall short due to infrastructure limitations while being more affordable than comparable helicopters. This multi-functional platform allows smooth transitions between VTOL and STOL modes for the greatest possible flexibility in the deployment of future operators.?

Advanced technology and proven aerodynamic design

The ANN 6 combines proven aerodynamics with innovative hybrid-electric technology to deliver exceptional performance metrics. Engineered with a conventional canard layout, the aircraft has undergone rigorous wind tunnel testing, non-stop computational fluid dynamics (CFD) simulations, and extensive pilot-in-the-loop simulations, along with trials using scaled prototypes. These efforts underscore Manta's commitment to achieving both aerodynamic efficiency and reliable control under diverse flight conditions. Manta's experienced team, with over 60 years of cumulative experience in fixed-wing and rotary-wing aircraft design, participated to more than 20 aircraft certifications in the past. As a result, ANN 6 offers highly reliable projections of payload, range, and fuel efficiency for a variety of ambient conditions.

A fusion of elegance, innovation and safety

This full-size model offers the first opportunity to enter the aircraft, try out the seats and marvel at the preliminary state of the interiors and furnishings. The ANN Plus scores with luxury and functionality, combining high-quality materials and modern design with advanced safety features. Crafted from nappa leather, Alcantara and a carbon fiber blend, the cabin exudes elegance while meeting the highest aviation safety standards. Designed for versatility, the interior offers bespoke customization options, including color palettes, seat embroidery and ambient lighting, as well as ample storage space and state-of-the-art instruments. With advanced safety systems and ergonomic controls, the ANN 6 offers a seamless, intuitive flight experience - ideal for business and personal travel.

As a versatile, high-performance hybrid electric aircraft, the ANN 6 is set to become an important player in the regional and inter-regional AAM, with a focus on flexibility, range, and operational efficiency. At the China Airshow, industry attendees and enthusiasts alike have had the opportunity to experience the ANN 6's design firsthand and gain insights into the aircraft's capabilities through performance graphs and technical specifications.?

Key benefits overview

- Long Endurance & Range: The hybrid propulsion system allows an outstanding range for regional and intercity flights without recharging stops.
- High Cruising Speed: High cruising speed enables fast commuting on medium and long distances.
- Affordable operating costs: The hybrid propulsion system allows for an optimized propulsion system with a small gas turbine and light weight battery; the aircraft is designed to minimize maintenance costs. Battery life cycle costs are minimized.
- Flexible Missions: Configuration flexibility adapts to different missions and operators (sensors, onboard systems, etc.)
- Very low infrastructure needs: No need for battery recharging infrastructure. Ability to operate from unprepared fields.
- Eco-friendly: Operating on SAF (Sustainable Aviation Fuel). Prepared to adopt a zero-emission hydrogen power plant.
- Easy to Deploy: Modular design allows quick disassembly and assembly for transportation and repair: Wing, Canard, Fuselage, Power Pack Unit.
-

Customizable: Tailored equipment and configuration according to customers' specs and needs. Customized livery and interiors.

Dimensions of the preliminary design:

- Seats: 5 pax + 1 pilot
- Length: 12.30 m (40.35 ft)
- Wingspan: 12.10 m (39.69 ft)
- Height: 2.75 m (9.02 ft)
- Empty Weight 1'740 kg (3'836 lb)
- Payload: 500 kg (1'100 lb) in addition to the pilot
- MTOW VTOL operation: 2'520 kg (5'555 lb)
- MTOW STOL operation: 3'020 kg (6'658 lb)

Performance:

- Cruising Speed: 240 km/h (130 kts)
- Dash Speed: > 330 km/h (178 kts)
- Endurance: > 1 h (VTOL) | > 4 h (STOL)
- Mission Capabilities
 - Vertical Take off and Landing VTOL
 - Short Take off and Vertical Landing STOVL
 -

Short Take off and Short Landing STOL

Key Systems:

- Propulsion:
 - Serial hybrid system (electric + eco-fuel)
 - 8 electric ducted fans
- Safety:
 - Crashworthy design
 - Hybrid propulsion: redundant source of power (turbine & battery)
 - Distributed propulsion for increased redundancy
- Control:
 - Redundant full fly-by-wire control system
 - HOTAS (Hands On Throttle-And-Stick)
 - New advanced HMI (Human Machine Interface)

05 JANUARY 2025

ARTICLE LINK:

<https://connect.50skyshades.com/news/manufacturer/manta-aircraft-unveiled-full-scale-mock-up-of-the-ann-6>