



IOMAX DELIVERS FIRST PRODUCTION ARCHANGEL TO THE UAE

News / Manufacturer



Iomax delivered the first of 24 new Archangel aircraft to the UAE Air Force and Air Defence in June 2015. Jon Lake looks at the programme and the aircraft.

Delivery of the first Archangel aircraft to the UAE Air Force and Air Defence (UAE AF&AD) was achieved on time – a mere seven months after signature of the contract.

One aircraft will be delivered every month through to January 2016, after which the remaining 18 will arrive at a rate of two per month until the end of the contract.

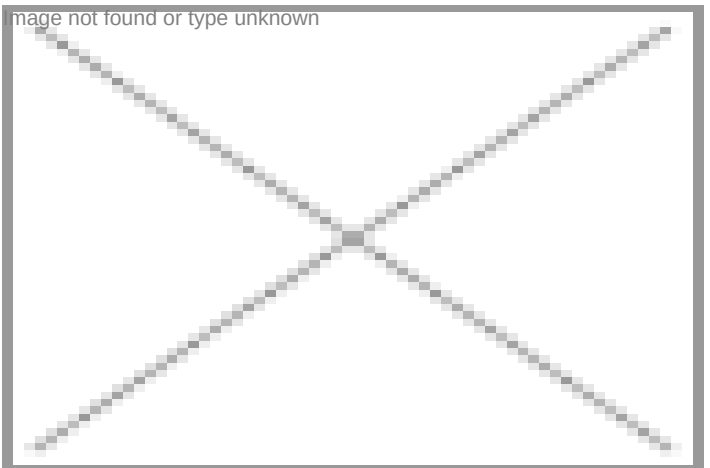
The new Archangels will replace the entire block 1 and block 2 border patrol aircraft (BPA) fleet.

Six of the first 10 block 1 aircraft have already been donated to the Royal Jordanian Air Force and more are understood to have been given to Libya.

The first of the new aircraft delivered was actually the second production-standard Archangel. It was flown from the company's facility at Mooresville, North Carolina to the UAE soon after the first Archangel – used as the programme engineering, manufacturing and development (EMD) aircraft – was shipped to Le Bourget to be statically displayed at the Paris International Airshow.

The Archangel was also known as the block 3 BPA, though changes to the aircraft have been so major that Iomax has reportedly had to drop the block 3 designation.

The UAE received an initial batch of 10 block 1 Air Tractor AT-802Us between November 2010



and May 2011 and a batch of 14 similar aircraft to block 2 standards, modified to carry heavier payloads and with other detail enhancements, followed from January 2012.

The 24 Air Tractor AT-802 aircraft were delivered to the UAE's Special Operations Command and were based at Falaj Hazza Camp near Al Ain, and, later, with the rest of the Presidential Guard Aviation fleet, also known as Group 18, at Sas Al Nakhl. The Presidential Guard aviation force subsequently became Joint Aviation Command, though the Air Tractors are believed to have been transferred to the UAE AF&AD, and they are now thought to be based at the new airfield at Abu Dhabi Northeast.

It is understood that the type was used operationally in Libya, in Egypt and over the Yemen, proving itself to be an extremely useful and versatile intelligence, surveillance, and reconnaissance (ISR) and light attack platform in the process.

This led to the issue of a requirement by the UAE for a further improved block 3 aircraft. However, it became clear that the modifications required would be extensive – and that some would need to be incorporated on the production line, requiring minor design changes.

Iomax CEO Ron Howard explained that this prompted the company to move away from using the Air Tractor AT802 as the basis for the BPA and to shift to the Thrush Aircraft S-2R Turbo 660 Thrush.

Both types were derived from the original Leland Snow-designed Snow S-2. This was subsequently built as the Aero Commander Ag Commander and Rockwell Thrush Commander, the Ayres Thrush and Turbo Thrush, and finally by Thrush Aircraft in a variety of forms.

Meanwhile, Leland Snow founded the Air Tractor company to build a similar aircraft.

Both lines of development resulted in armed and militarised variants; Ayres producing the two-seat Vigilante with mission equipment and armament, and Air Tractor building a prototype AT-802U. It was the latter aircraft that prompted Iomax to base its UAE BPA on the Air Tractor AT802 airframe.

"In discussions with our then current aircraft provider, Air Tractor, we concluded that it would not be possible to influence the basic design of the 802 aircraft," Howard said. "Iomax, therefore, entered into discussions with Thrush Aircraft as a possible provider of aircraft and, in November 2012, we entered into a verbal agreement to jointly produce the block 3."

In 2013, this verbal agreement was succeeded by a formal partnership and Iomax revealed a demonstrator (N7555A) at the 2013 Paris air show. This aircraft had a two-seat cockpit with an Esterline CMC Electronics Cockpit 4000 avionics suite, with three 5 x 7in multifunction displays in the front cockpit and one in the rear cockpit, a new head-up display (HUD) for the pilot, six under-wing weapons hardpoints and an L-3 Wescam MX-15Di imaging and targeting turret under the belly.

Iomax claimed that the Archangel would cost about one-third as much as aircraft like the [Embraer A-29 Super Tucano](#) and the Beechcraft AT-6, while offering three or four times the payload (5,000lb) and endurance (nine hours).

Joel Hampton, a former US Air Force A-10 pilot and now an instructor pilot with Iomax, described the Archangel as having taken the best things from its agricultural heritage, making it tough and able to operate from semi-prepared and rocky strips. He called it "the Kalashnikov of aircraft" adding: "You can chuck it in the mud and beat it up and it will still function just fine."

The aircraft displayed at Paris 2013 was not fully representative of the planned production configuration and an EMD Archangel Block 3 BPA prototype (N925KH) was, therefore, built to showcase and test the planned production configuration.

The fuselage was redesigned with a purpose-built fuel tank and the tandem twin-cockpit was stretched and moved forward 43 inches to increase the space available for the rear crew-member, while also improving the view forward and down for the pilot. The rear cockpit was elevated to improve visibility for the back-seater.

The old agricultural ‘hopper’ was removed and replaced by the new conventional self-sealing fuel tanks, which offer level two protection against ballistic threats. The revised design also freed up space in the rear fuselage for avionics equipment.

The new aircraft (dubbed as the engineering development platform by Iomax) had a ‘cleaned-up’, lower-drag fuselage with a sleeker nose profile and a blended rear cockpit, as well as remodelled wing roots and wingtips.

The engine exhausts were angled rearwards providing about 200lb of additional thrust and the five-bladed Hartzell propeller was replaced by an MT-Propeller MTV-27, with composite scimitar-style blades.

The under-wing pylons are now more widely spaced, allowing the use of twin launch rails and dual stores on each hardpoint. The tailfin and rudder was also redesigned, with greater height and area, giving better directional stability – especially when firing weapons.

Inside the cockpit, new throttle quadrants are provided in both front and rear cockpits and the aircraft has a new digital autopilot. It is fitted with night vision goggle (NVG)-compatible and NVG-covert external lighting.

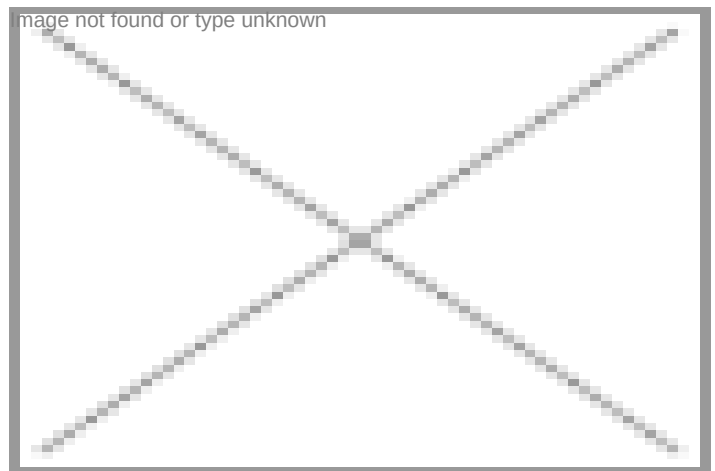
The aircraft made its maiden flight in July 2014 and was later displayed statically at the 2015 Le Bourget show with a wide range of weapons displayed under its pylons.

A number of weapons have been cleared on the Archangel, which has already dropped or fired 150 bombs and laser-guided rockets. These include the podded GAU-19B 0.50 calibre (12.7mm) gun, GBU-12/58 precision-guided bombs, AGM-114 Hellfire missiles, and Roketsan Cirit guided rockets.

Iomax hopes to integrate the Roketsan UMTAS anti-tank guided missile and Roketsan’s new Teber 250lb and 500lb laser-guided bombs (newly unveiled during the Paris show) this year. Further into the future, Iomax hopes to integrate the Thales FreeFall lightweight multi-role missile (FFLMM).

Iomax expects there to be about 70 Archangels and BPAs flying with Middle Eastern air arms in the next two years and forecasts another sales announcement, “Maybe before the end of the year.”

The US Government is reportedly close to fulfilling a Congressional 1206 request (security assistance) to provide the aircraft to the Philippines, and Iomax has admitted receiving expressions of interest from Angola, Ivory Coast, Niger, and Turkey.



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