

STRIX A UNIQUE, UNMANNED BIRD OF PREY

PERFECT PAIRING WITH RAZER

JUSTIN BURKE

If BAE Systems' new unmanned aerial system Strix looks unusual, it is because it was designed to meet some seemingly incongruous criteria.

“This whole concept started as a whiteboard brainstorming exercise in June last year, where we challenged the team to address a gap between the really small, very cheap unmanned autonomous vehicles (UAVs) and the really big, expensive, longer-range UAVs,” says Kisa Christensen, director of Red Ochre Autonomy and Sensors at BAE Systems Australia.

“We had a quadrant chart that we used to outline the requirements for vertical takeoff and landing (VTOL), payload, range, and also attritability. They were allowed to be totally creative within that space, and that's why they came up with something so unique.”

Strix – named after a genus of owls – was unveiled at the Avalon Airshow in Geelong last month. It can carry an armament payload of 160kg for 800km or up to 200kg for 500km. Alternatively, reducing the payload to a minimum could extend the range to 1500km for intelligence, surveillance, and reconnaissance (ISR) missions. It uses batteries to support VTOL operations and switches to jet fuel to power its horizontal flight.

“Strix is airfield independent, we don't need a landing strip to take off or land. It could be deployed off the back of a navy vessel. It could also be operated from a helicopter in a teaming arrangement,” Christensen says.

“Being able to fold it up and transport it in a standard ISO shipping container was a key factor of the design as well.”

The first Strix prototype is currently being built and will have its maiden test flight in the final quarter of 2023 and, according to the company, could be ready for operational service as early as 2026.

“The geopolitical situation we’re in currently means that speed to capability is the key concern of the Australian Defence Force,” Christensen says.

“I wouldn’t be surprised to see speed to capability or something along those lines as a strong theme that comes out of the upcoming Defence Strategic Review. But while Strix is responding to capability demands for the ADF, we’re also looking at the needs of our allies and other markets. We are absolutely looking to export these globally.”

Australia’s relatively slow adoption of drones has been a focus of recent criticism, particularly as their value had once again been highlighted during the war in Ukraine.

At Avalon, Air Marshal Robert Chipman said the cost of advanced combat drones needed to come down to about 10 per cent of the price of an F-35 fighter jet – or about \$11m each at current prices – before they became widely used by the RAAF.

“We are aligned with our customer on that,” Christensen says. “We’re not talking tens of millions of dollars per Strix here. It’s going to be far less than that.”

Strix was unveiled a week before a Russian Sukhoi SU-27 fighter jet attacked an unmanned American MQ-9 Reaper drone over the Black Sea. Footage showed the jet dumping its fuel on the drone, before ramming and damaging the drone which eventually fell into the sea.

“I think examples like this are reminders that for all of our autonomous products, it is about taking humans off the battlefield and out of harm’s way,” she says. “It’s also really important to recognise the fact that – attritable or not – we don’t want our unmanned platforms ending up in the hands of our enemies.

“So, a key design consideration is making sure that any sensitive material or intellectual property is tamper proof or selfdestructs.”

Christensen says Red Ochre – BAE’s research and development “skunk works” which has contributed to capabilities including the Nulka missile decoys, the JORN over-the-horizon radar upgrades, and the future Hunter-class frigates – is gearing up to meet the moment and more innovative capabilities are on their way.

“It would be exciting if AUKUS meant that perhaps the regulatory barriers between our three nations were reduced, that would absolutely help,” she says, noting that creating Strix outside the US’s International Traffic in Arms Regulations (ITAR) regimen was deliberate.

“In any case, we’ve got incredibly brilliant, smart people in our local industry and they can do amazing things when given that creative space.

“I feel like we’re all rallying around a common sense of purpose right now. Government and defence and industry are all pulling on the rope in the same direction.”

While Strix can carry various existing air-to-ground munitions such as the JAGM-MR, Hellfire, or Brimstone missiles, its perfect pairing might be BAE Systems’ own bespoke munition concept known as RAZER, which was also unveiled at the Avalon Air Show last month.

RAZER is a low-cost wing and body kit and tail unit equipped with a powered GPS and inertial navigation system, which transforms standard non-guided 40 to 50kg munitions into a precision air launched weapons. A RAZER-enhanced munition glides to target, dramatically increasing its range and protecting the UAS. The product seeks to bridge the gap between inexpensive, short-range, land-based weapons and the expensive, long-range, air-launched weapon systems.

“RAZER can meet urgent local and overseas demand for low-cost sovereign munition solutions that could be deployed from the air. It could deliver a powerful and affordable battlefield strike capability for users globally,” says Ben Hudson, CEO of BAE Systems Australia. “It addresses a clear gap in the market for sovereign guided weapons. It will enable our Australian Defence Force ease of access to world-class munitions right here in Australia.”

Developed by BAE’s Battlespace Integrated Solutions team, RAZER will continue testing in air and maritime environments in coming months. The company expects to manufacture the product in Australia, but is seeking export markets in the US, UK, Canada, Sweden, Netherlands, Norway and others.

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