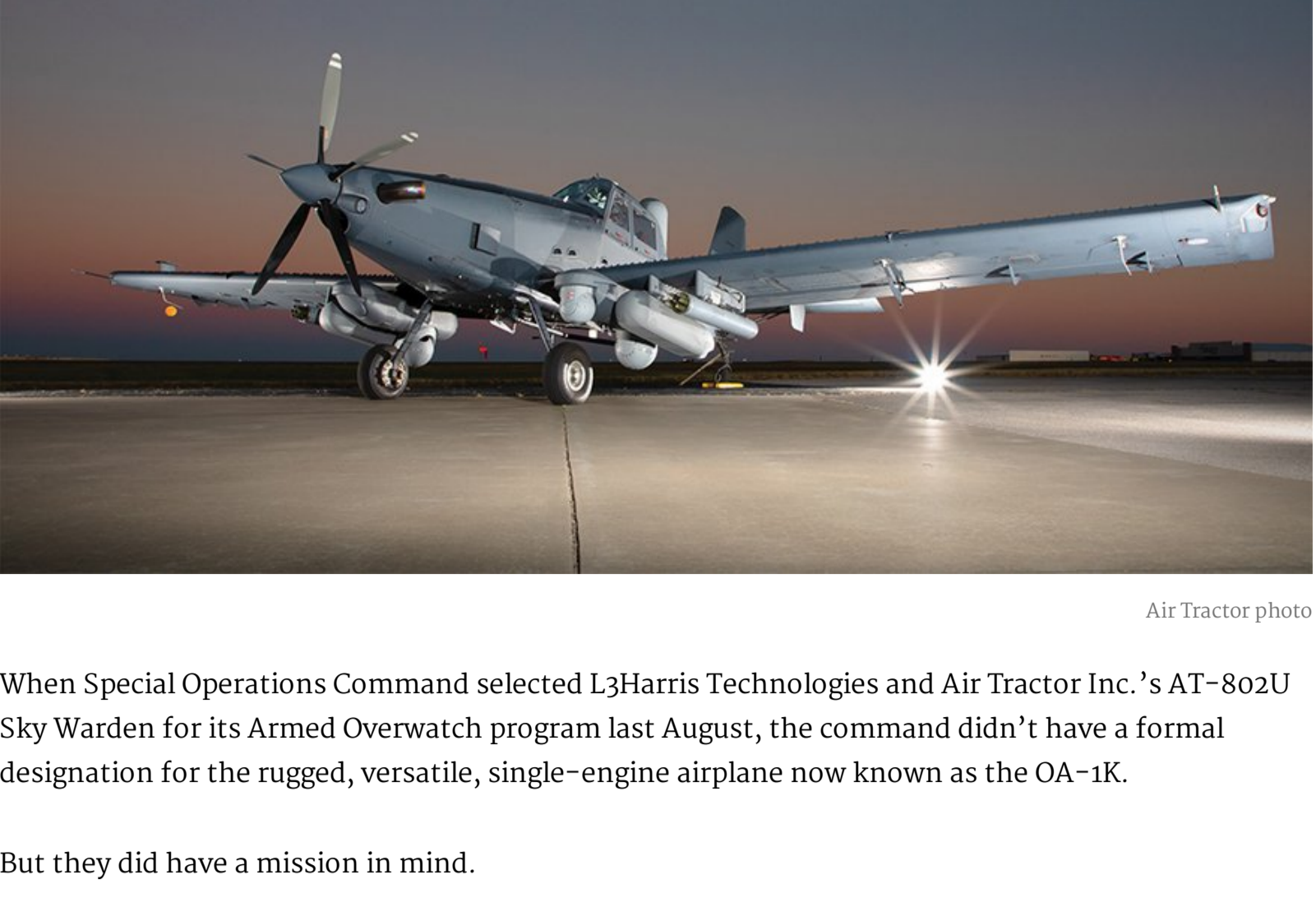


**SPECIAL OPERATIONS**

# SOCOM's New Recon Aircraft to Pack Big Punch

**4/27/2023**  
By Jan Tegler



Air Tractor photo

When Special Operations Command selected L3Harris Technologies and Air Tractor Inc.'s AT-802U Sky Warden for its Armed Overwatch program last August, the command didn't have a formal designation for the rugged, versatile, single-engine airplane now known as the OA-1K.

But they did have a mission in mind.

They wanted one airplane that could "collapse the stack" of aircraft needed to perform irregular warfare missions in remote locales. Able to tackle the intelligence, surveillance and reconnaissance missions of the unarmed U-28A Draco and MC-12W Liberty aircraft it will replace, the OA-1K adds strike capability for close air support and precision strike missions with a gunship-like punch.

The contract award to L3Harris for as many as 75 of its modified turboprops could be worth up to \$3 billion, according to the command. It's the culmination of an effort to field light attack/reconnaissance aircraft by the Air Force and Special Operations Forces that dates back to 2009.

Transformed into the "Armed Overwatch" program in 2020, it became a competition between six companies in 2021, reduced to three by spring 2022 with the OA-1K chosen on August 1, 2022.

Low initial rate production is already underway at L3Harris's Tulsa, Oklahoma, facility with three OA-1Ks being built, and a fourth aircraft — a modified version of the Air Tractor 802U the special ops airplane is based on — is in use for flight envelope expansion and handling qualities testing, according to the company.

Luke Savoie, L3Harris's president of ISR, said the OA-1K is "all about giving special operators options and flexibility in a package with a small logistical footprint." While it's not clear yet exactly what sensor and weapon combinations Air Force Special Operations Command will load the OA-1K with for different missions, L3Harris considered and modeled options that OA-1K aircrews could employ far away from fixed bases, Savoie said.

"How do you start to bring gunship level effects into austere, very hard to reach areas or areas that are becoming harder to reach because of basing availability or where the enemy has shifted?" he said. "How do you bring the magazine and persistence you need?"

BAE Systems' Advanced Precision Kill Weapon System, or APKWS, is one way to do that, Savoie said. Sky Warden tested and demonstrated APKWS on the AT-802U prototype used during Armed Overwatch program evaluations. The OA-1K can gain outsize effects with such an option, he noted.

That's because the APKWS kit that turns "easy-to-move" 2.75-inch rockets into precision-guided munitions can be assembled on-site and is common to other weapons like L3Harris's Vampire counter-UAS system. Savoie, a former U-28/AC-130 pilot, said the kit is desirable because of its precise, low collateral damage capability against hard and soft targets and because it can achieve proximity fuse-like effects.

"When we look at what gunships like the AC-130 do with their 105 mm cannon with a proximity fuse providing area-effect type of things against soft targets, APKWS essentially brings that same capability," he said. "It does that at a fraction of the cost of multiple shots or having to put guns on a platform to provide suppression or an area effect to break contact against soft targets."

The aircraft can carry up to eight common launch tubes — nearly matching the 10 that the AC-130s feature — capable of launching AGM-176A Griffin laser/GPS-guided mini missiles, small glide munitions or air-launched effects, which gives the OA-1K a formidable magazine, Savoie added.

He compared it to AC-130 capability "where you're providing the same level of these magazines, the same level of persistence — we've demonstrated now close to 11 hours — and we can also do it with the sensors."

L3Harris designed OA-1K to use the company's MX-15 and MX-20 electro-optical/infrared medium and high-altitude imaging systems for ISR and laser targeting.

"Our standard configuration is an MX-15 and an MX-20. We've demonstrated the ability to carry two MX-20s, the same sensors that are on the AC-130," he said. "Now you're starting to get to the level of effects of a gunship in areas that are much harder to reach."

Many other types of precision-guided missiles and air launched effects were considered when designing OA-1K to give users like AFSOC and other potential customers a menu of munitions they can use and change over time, Savoie said. To further accommodate various weapons loadouts, L3Harris is performing external reinforcement of the AT-802U's wing that will enable production OA-1Ks to carry up to 6,000 pounds of ordnance.

The company has spent the last year modeling how many Harpoons — AGM-84 variants — and JASSM-ERs, or Joint Air-to-Surface Standoff Missile - Extended Range, could be carried on the aircraft. The assessments were done independently of Special Operations Command, he added.

L3Harris has done OA-1K captive-carry tests with AGM-114 Hellfire missiles and GBU-12 Paveway laser-guided bombs, and he noted that GBU-12s could be swapped for GPS-guided GBU-39 small diameter bombs or GBU-53 StormBreaker laser/GPS/millimeter-wave-radar-guided bombs.

"We designed the Sky Warden to take advantage of its flexibility," Savoie explained. "Some alternative platforms get very sensitive as to what you can hang out on the wings. The great thing about the 802U is that it has very little effect on the performance of the platform or maneuvering restrictions. The envelope does not shrink as you put stuff [on the wings]."

Minimizing the differences in the mission system and weapons OA-1K employs and those used by other special operations aircraft was also important. "We wanted mission system familiarity for aircrew," Savoie stressed. "We want even the ground crews to have familiarity" without requiring any special weapons training.

Given the capabilities of the sensors and weapons OA-1K can utilize, L3Harris sought to diminish the workload for its two-man aircrew. Savoie said the airplane's autopilot, fully integrated with its mission system, is the best example the company has ever designed.

"We have linkages into our mission system through it. So, I can be looking at something with the MX-20. The back-seater can hit a button on the window grip, or the pilot can hit it on the throttle or the stick and populate the system straight into the aircraft's Garmin 3000 integrated flight deck system," he said.

"The front-seater can hit a button and the autopilot will fly completely coupled orbits around a target, never having to shift over or do anything like that," he added. "You can transition from orbit center to over-center, mode-to-mode-to-mode completely seamlessly."

Savoie observed that when flying the U-28 or C-130, he was often the linkage between the planes' mission systems and their flight management systems. That required him to manually type information into their autopilots to fly orbits around targets.

"Now our visual sensors are completely linked in," he explained.

Wearing Thales' Scorpion Helmet, the same headgear A-10 pilots use, an OA-1K pilot "can actually look outside, see something, hit a button, drop a [GPS] point there and couple the autopilot around that point. It is now very much machine to machine, with the front-seater being able to confirm things versus having to sit there and type in coordinates. It dramatically reduces workload," he said.

The OA-1K was designed with the customer's preference to accommodate two 20-inch-class sensors in mind. Mounted underneath the aircraft's wings aft of its fixed main gear, the MX-15/MX-20 offer "unrestricted operations in the inside of orbits with no obstructions, blockages, etc. And both sensors can [laser] designate for a forward firing weapon or an orbit weapon," he said.

The ability to connect OA-1K with other aircraft, operations centers or ground forces to deliver video or metadata via line of sight and beyond-line-of-sight links was also a major consideration in its design, he added.

"We asked how we can make people not aboard the platform as smart as possible," Savoie said. "If a person in an operations center calls the airplane and says, 'Hey, we see movement on building 12. Please confirm that no one's armed.' And the reply is, 'Yep, no one's armed.' That's one question and done because we're off-boarding the video, etc."

OA-1K's ability to "remote" its wing-mounted sensors to forces on the ground or in the air multiplies its utility. For example, when flying with three sensors, L3Harris recognized that one could be "latched to an ATAK user," he said. ATAK is an Android smartphone mapping, navigation and situational awareness app used by special operators.

"That sensor would follow that user everywhere they went," Savoie said. "So, if you were doing convoy escort, one of the sensors was always on the convoy. If you're part of that convoy and you want one of the sensors, you can control it, put it down on your map and move it around anywhere you want."

Information shared via OA-1K's digital backbone isn't limited to its own sensors. Link 16 connectivity allows the special operations airplane to ingest tracks from other aircraft or share its tracks with F-16s, for example.

F-16 pilots "can sit there with their Sniper pod and slew it to where the OA-1K's MX-20 is going and see what one of our pilots is looking at," Savoie noted.

Though it lacks ejection seats, OA-1K should protect its crew well in combat or from most impacts with the ground, Savoie said. The airplane's rugged armored construction is complimented by an integrated steel roll cage "stronger than what a NASCAR race car has" encasing its front/rear cockpits.

"This airplane is designed to be very survivable," he continued. "The original 802 is intended to operate at 20 feet off the ground predominantly. We're operating at much more hospitable and safe flight regimes with OA-1K."

Savoie summed up OA-1K as a platform designed with the potential to perform tasks most irregular warfare mission users might need. Intriguingly, he said L3Harris thought outside the box with OA-1K, mindful of the Agile Combat Employment concept that the Air Force is turning to for distributed operations from the Indo-Pacific to the Arctic.

Though some might consider it unsuitable for operations against a peer foe like China, in contested airspace the OA-1K can operate at "altitudes and speeds where it becomes survivable again," Savoie said.

A command spokesperson said airframe tests will continue this year with verification of integrated mission systems functionality prior to operational testing in 2024. A formal training unit will stand up in the third quarter of fiscal year 2024, with the first operational OA-1K squadron forming in 2026 at a location yet to be determined. Full operational capability is expected in 2029, the spokesperson said.

**Topics:** Special Operations, Air Power

## Comments (1)

**Re: SOCOM's New Recon Aircraft to Pack Big Punch**

My goodness that is impressive. 6,000 lb? Does it have any cargo capacity whether through pods or internal volume? How many pax?

Perhaps it could be used like Skorzeny did insertions and extractions in a Fiesler Storch. You might set a man down in some short roof field and then turn around and go home. Be nice if you could carry a motorcycle for him.

How does this a/c compare to the OV-10 Bronco? You could have got a motorcycle in there if not a Jeep. If this aircraft could replace the OV-10 it would be worth having a lot of them. Especially if the expensive avionics could be modular/optional and the thing could be used as a trash hauler at need. It's not the reason they bought the aircraft, but if it has significant internal volume, as a crop duster should, it's not as SOF doesn't have a cargo or tanker mission.

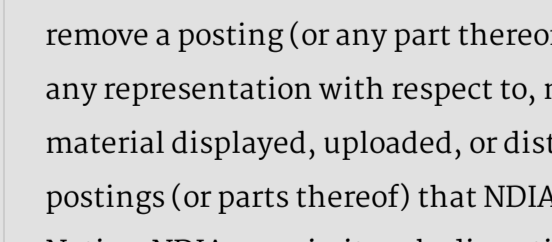
Great post, thank you, I should have said that first.

Nichevo at 12:23 PM

**Name \***

**Email \***

**Comment \***

 Please enter the text displayed in the image.

**Characters \***

**Legal Notice \***

NDIA is not responsible for screening, policing, editing, or monitoring your or another user's postings and encourages all of its users to use reasonable discretion and caution in evaluating or reviewing any posting. Moreover, and except as provided below with respect to NDIA's right and ability to delete or remove a posting (or any part thereof), NDIA does not endorse, oppose, or edit any opinion or information provided by you or another user and does not make any representation with respect to, nor does it endorse the accuracy, completeness, timeliness, or reliability of any advice, opinion, statement, or other material displayed, uploaded, or distributed by you or any other user. Nevertheless, NDIA reserves the right to delete or take other action with respect to postings (or parts thereof) that NDIA believes in good faith violate this Legal Notice and/or are potentially harmful or unlawful. If you violate this Legal Notice, NDIA may, in its sole discretion, delete the unacceptable content from your posting, remove or delete the posting in its entirety, issue you a warning, and/or terminate your use of the NDIA site. Moreover, it is a policy of NDIA to take appropriate actions under the Digital Millennium Copyright Act and other applicable laws.

I have read the legal notice.

**SUBMIT COMMENT**

**Related Articles**

Pentagon Moving to Expedite Weapons Exports to Allied Nations

---

JUST IN: SOCOM Could Purchase 'Armed Overwatch' Aircraft in 2022

---

Armed Overwatch Aircraft on SOCOM's Shopping List

**VIEW ALL ARTICLES »**

**Related Events**

Special Operations—Low Intensity Conflict **10/30/2023**  
34th Annual NDIA SO/LIC Symposium

---

**VIEW ALL EVENTS »**