

The Business Daily of the Global Aerospace and Defense Industry Since 1963

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Inside:

PROGRAMS

Expendable Remote Carrier
Demonstrator Flies In Germany..... **PAGE 2**

Northrop Grumman Gets Price Cap
Increase For Upcoming B-21 Lots..... **PAGE 3**

OPERATIONS

U.S.-Norway Arctic Broadband Sats
Delivered Ahead Of July Launch..... **PAGE 2**

BUSINESS

Isar Aerospace Gets NATO
Series-C Round Buy-In..... **PAGE 7**

FUNDING & POLICY

Romania Launches Construction
Effort For NATO Air Base Expansion..... **PAGE 6**

AVIATION WEEK FORECASTS

V-22 Production To End As It Began,
Under Cloud of Safety Concerns..... **PAGE 11**

Boeing's Next CEO

The latest results from a longtime supply chain survey run by a well-known financial analyst show about 30% of aerospace and defense suppliers surveyed predict Boeing COO Stephanie Pope will be the next CEO of the aerospace giant. Expectations of Pope being appointed are followed by 20% who see Spirit AeroSystems CEO Pat Shanahan becoming Boeing's chief, according to RBC Capital Markets analyst Ken Herbert's latest regular "Voice of the Supplier" survey. The survey polled around 40 major aerospace and defense suppliers, who together generate \$14 billion of industry revenue. A fifth of companies record \$200-400 million in revenue, while another fifth see \$25 million or below. The majority identify as commercial aero suppliers, with another 25% as defense and 11% as business jet suppliers.

Daily Briefs

SCHIEBEL established **SCHIEBEL AÉRONAVAL SAS** in Toulon, France, to provide support for the French Navy's fleet of S-100 Camcopter UAS.

SCALIAN acquired **MANNARINO SYSTEMS & SOFTWARE INC.** of Canada, which specializes in avionics for electric aircraft and drones.

LOCKHEED MARTIN has \$282.8m U.S. Missile Defense Agency contract extension for continued development/sustainment of MDA's Objective Simulation Framework modeling and simulation system.

CPI AEROSTRUCTURES, INC. has settled with the U.S. Securities & Exchange Commission over the company's previously announced restatements of certain financial statements for fiscal periods between Jan. 1, 2018, and Dec. 31, 2022. The company plans to remediate "material weakness in internal control over financial reporting" by the end of this year.

PROGRAMS

SOCOM In The Market For Amphibious Group 2 UAS

BRIAN EVERSTINE, brian.everstine@aviationweek.com

U.S. Special Operations Command (SOCOM) is in the market for a long-endurance reconnaissance drone that can land on water and discreetly wait for recovery, according to a new solicitation.

SOCOM, in the request for information (RFI) posted June 20, is looking to evaluate Group 2 uncrewed aircraft systems (UAS) that can fly 35 mi. and beyond over 6 hr. while carrying a minimum of two payloads or sensors.

The UAS needs to be able to launch, operate and be recovered during day and night operations in adverse weather, the solicitation says. This includes a desired capability to operate over ground and water, land at sea and remain afloat until being recovered, or "provide other novel low recovery capability," the solicitation states.

SOCOM requires the UAS to be able to operate in radio frequency and navigation-contested areas, with modular and durable components that can be easily fixed. The UAS needs an electric or hybrid-based propulsion system.

The command plans to evaluate responses starting next month as part of a nine-month process that includes operational test and evaluation early next year.

The SOCOM solicitation is another in a series of new approaches from Pentagon organizations looking for cheap, long-endurance UAS. Other similar programs in the Group 2-3 range include the U.S. Army's Future Tactical Unmanned Aircraft System program, the Marine Corps Long Range Tactical UAS and DARPA's Ancillary X-Plane program.

PROGRAMS

Expendable Remote Carrier Demonstrator Flies In Germany

TONY OSBORNE, tony.osborne@aviationweek.com

MBDA has begun flight trials of a testbed for remote carrier technologies to support its development of a demonstrator remote carrier for the European Future Combat Air System (FCAS) initiative toward the end of the decade.

The Small Highly Adaptable Remote Carrier System (SHARCS) is a remotely piloted, jet-powered, forward swept-wing, fixed-landing-gear-equipped air vehicle with a composite airframe structure, provided by Airbus-owned German aerospace supplier Premium Aerotec. The aircraft has begun flight trials in Germany, video released June 19 by the company on social media has revealed.

SHARCS is a platform for testing various sensors, systems and associated algorithms that could feature in MBDA's develop-

ment of an expendable remote carrier (ERC) for FCAS.

MBDA says use of the SHARCS demonstrator is a low-risk approach to rapid and early testing of new technologies. The air vehicle has a maximum takeoff weight of 150 kg (330 lb.) and a payload capacity of 30 kg.

MBDA is one of the partners in the remote carrier pillar of FCAS development work, along with Airbus and a Spanish joint venture, Satnus, made up of GMV, Sener Aeroespacial and Tecnotbit-Grupo Oesía.

The ERC platform will be demonstrated as part of Phase 1B and Phase 2 of the FCAS program. Flights are expected to take place at the end of the decade, before the FCAS program moves into full-scale development around 2030.

ERCs have been designed to carry different payloads including intelligence, surveillance and reconnaissance sensors, relays, electronic warfare systems and jammers and will collaborate with other ERCs and weapons.

OPERATIONS

U.S.-Norway Arctic Broadband Sats Delivered Ahead Of July Launch

VIVIENNE MACHI, vivienne.machi@aviationweek.com

The U.S. Space Force is one step closer to launching the first national security space payload hosted on an allied spacecraft with the U.S.-Norway Arctic Satellite Broadband Mission (ASBM) satellites' arrival at Vandenberg Space Force Base, California.

Northrop Grumman delivered the two satellites to the launch site for a mid-July SpaceX Falcon 9 mission, the spacecraft maker said June 21.

ASBM is a joint effort between the U.S. Space Force, the Norwegian Armed Forces, Space Norway—a part of the Norwegian government—Viasat and Northrop Grumman.

The constellation will provide continuous broadband coverage and protected military satellite communications north of the 65 deg. north latitude.

Northrop Grumman supplied GEOStar-3 satellite buses under a contract with Space Norway and built the two Enhanced Polar System-Recapitalization (EPS-R) payloads for the Space Force.

Other payloads on board include an X-band payload for the Norwegian Defense Ministry, a Ka-band payload for Viasat and a radiation monitoring payload commissioned by the European Space Agency and built by Norwegian company Integrated Detector Electronics AS.

Once launched, the Norway-operated ASBM constellation will follow a highly elliptical orbit over the Arctic.

That will make EPS-R the first U.S. military payload hosted on a commercial space vehicle and then operated by a foreign partner.

"ASBM pioneers a new path for hybrid government-commercial missions," Brandon White, vice president and general manager for tactical space systems at Northrop Grumman, said in a statement.

The ASBM initiative was initiated in 2019 and is Norway's largest-ever satellite program, according to Space Norway. The joint partnership with Oslo allows the EPS-R payload to deliver capabilities to the Space Force three years faster than via a traditional acquisition process, per the service.

The legacy EPS constellation provides protected extremely high-frequency (EHF) satellite communications above 65 deg. north, serving as polar adjunct capability to the Advanced EHF system.

The recapitalization effort aims to extend the EPS services into the 2030s, augmenting the two existing satellites, also built by Northrop Grumman. The company has also updated the Control and Planning Segment ground system ahead of the ASBM launch.

EPS-R will serve as a bridge to the Space Force's next-generation Protected Tactical Satcom program, per Space Systems Command.

PROGRAMS

Northrop Grumman Gets Price Cap Increase For Upcoming B-21 Lots

BRIAN EVERSTINE, brian.everstine@aviationweek.com

Future procurement costs of the B-21 Raider will be more favorable for Northrop Grumman, which has announced a substantial loss on the first five lots of the bomber.

The company, in a June 18 announcement, said it and the government have established not-to-exceed pricing for an additional 19 aircraft beyond the first five low-rate initial production lots.

Those five LRIPs, totaling 21 aircraft, are being procured at a fixed price and will amount to a \$1.56 billion loss, the company announced in January.

Northrop says the final terms, quantity and pricing of the subsequent 19 aircraft are still subject to negotiation. All of the first 40 aircraft are on track to meet the key performance parameter for Average Procurement Unit Cost of \$550 million in base year 2010 dollars.

"The average not to exceed value for the subsequent lots is above the average unit price of the five LRIP lots," Northrop Grumman says.

Company officials have warned that inflation and supply chain disruptions increased the cost of LRIP aircraft, a bill the company has to meet under the fixed-price contract.

Procurement of the subsequent 19 aircraft are outside of the current budgeted five-year spending plan that ends in fiscal

2027, and it is not clear how many lots it would cover.

Bill LaPlante, the Pentagon's under secretary of defense for acquisition, told the Senate Appropriations Defense subcommittee in May that the B-21 entered limited rate production in November 2023, is on track to procure a minimum of 100 aircraft and is successfully executing within cost, schedule and performance goals.

The program office "has negotiated fixed-price production options for the first 40 aircraft," he said.

The lower costs of initial aircraft have allowed the Air Force to budget less on initial procurement of the bomber.

Fiscal 2025

The service's fiscal 2025 request calls for \$1.956 billion in procurement for an undisclosed number of bombers, a significant reduction from the plan outlined in the prior year's budget request, which called for \$3.089 billion in fiscal 2025 procurement spending.

An Air Force spokesperson said at the time that the budget was adjusted to account for the favorable negotiated LRIP initial production costs.

"There were no material reductions in program quantities or scope," a service official says.

"The procurement funding includes aircraft flyaway costs, support equipment, training, initial spares [and] engineering change orders. The B-21 program office continues to proactively manage the program baseline for cost, schedule and performance."

FUNDING & POLICY

U.S. Prioritizing Patriot, NASAMS Interceptors For Ukraine

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The U.S. is shifting delivery of most Patriot and National Advanced Surface-to-Air Missile System (NASAMS) interceptors to Ukraine from other foreign partners as Kyiv's intense need for air defenses continues.

The White House announced the "difficult but necessary" decision on June 20, adding the countries involved expressed understanding. National Security Council spokesman John Kirby told reporters the countries know how serious the need is in Ukraine's war with Russia. The specific countries were not named, though Kirby says Taiwan and Israel would not be affected.

Under the new plan, interceptors coming off the production

line will go to Ukraine instead of to the nations that ordered them. The White House considered shifting deliveries of full Kongsberg NASAM and RTX Patriot systems, but there were no eligible ones coming off the production line as part of Foreign Military Sales.

The decision will affect hundreds of missiles, Kirby says.

The Biden administration is continuing to encourage nations in Europe and beyond that have air defense systems to contribute to Ukraine, he says.

Also on June 20, Romania announced it would donate a Patriot system to Ukraine. In a statement, Romanian President Klaus Iohannis says the donation is being made on the condition that his country would continue negotiations, especially with the U.S., to obtain a similar or equivalent system and find a temporary solution to cover the vulnerability that the donation would create.

PROGRAMS

U.S. Army Reveals Identity Of Raging Parakeet UAS

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Raging Parakeet broke cover for the first time in mid-June, revealing the three-year-old, European Command-sponsored project as an 1,800-lb. uncrewed aircraft system (UAS) loaded with unidentified sensors and an artificial intelligence (AI)-driven processor.

The UAS—a Navmar Applied Sciences Corp. Teros—and payload system completed a five-day Joint Capability Technology Demonstration (JCTD) at Griffiss International Airport in Rome, New York, according to a June 18 announcement by the U.S. Army.

The Army's 10th Mountain Division, based at nearby Fort Drum, conducted the JCTD, despite the project being led by the Naval Research Laboratory after being launched by the U.S. Air Force.

"Raging Parakeet is designed to speed up the kill chain. What that means is, we try to find a target, we assess the target, and we prosecute that target," Joe Fagan, European Command's dep-

uty science advisor, said in the announcement.

A released photo of Raging Parakeet shows the Teros UAS loaded with at least two unidentified payloads on the aircraft's belly. The Teros can carry up to 400 lb. and remain airborne for up to 20 hr.

Advanced AI and data fusion software interpret the sensor data onboard the platform, recognizing and identifying targets, the Army press release says. That capability removes the need to transmit the data to the ground.

The UAS navigates by flying GPS waypoints provided by a human operator. As targets are identified, Raging Parakeet's AI system adjusts the flightpath to home in on their location.

Budget documents show the Air Force launched the Raging Parakeet JCTD in 2021, but the Naval Research Laboratory took over the following year. The demonstration received less than \$10 million.

The project's code name follows a popular military nicknaming convention that matches an adjective with an animal. Other examples include the Angry Kitten electronic warfare pod and events such as Eager Lion and Bold Alligator.

PROGRAMS

ESA Sees Vega Industrial Divorce Near, Adds Slovenia

ROBERT WALL, robert.wall@aviationweek.com

The European Space Agency (ESA) expects an agreement between Arianespace and Avio to be completed soon for the Italian company to take over commercialization and operations of the Vega C launch vehicle.

"The conditions for the transfer of the Vega C from Arianespace to Avio are clear," ESA Director General Josef Aschbacher told reporters June 19. ESA helped mediate between the two companies to secure an agreement that should be in place soon, he said. "We are very, very close to having closed the open items," he added, with some more points to be addressed in the coming days. Vega C is the upgraded, light-to-medium-lift version of the light Vega.

Aschbacher's comments came at the end of an ESA council meeting, during which the agency signed an agreement with Slovenia for the country to become the 23rd member. Slovenia, an associate member since 2016, is likely to become a full member

early next year, he said.

Tania Permozer, the head of Slovenia's space office, said the country would boost investment in space as part of an action plan throughout the rest of the decade. The country, which expects to launch its fourth satellite this year, would build on its first space strategy, unveiled in 2023, he said after the ESA meeting.

Toni Tolker-Nielson, ESA's director of space transportation, also said the organization is making "steady progress" in talks with industry to bring down the cost of the Ariane 6 rocket, due for its inaugural launch on July 9 from the European space port at Kourou, French Guiana. ESA has been pushing to reduce the cost by 11%. Governments last year agreed to put €340 million (\$365 million) in extra funding into Ariane 6 in return for the cost-cutting pledge.

ESA and industry are also moving forward on efforts to have micro or mini launchers operate from Kourou and are upgrading the Diamant launch site, used for a previous generation of launchers, for those purposes. Tolker-Nielson said Spanish company PLD will likely be first to use the location with its Miura 5 rocket.

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PROGRAMS

LeoLabs To Develop Next-Gen Space-Tracking Radar With USAF

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Commercial space situational awareness provider LeoLabs has secured a U.S. Air Force small-business contract to develop a new generation of space radar better able to track objects in very low Earth orbit (VLEO).

The company has received an almost \$1.25 million contract from the Air Force Research Laboratory and AFWerX innovation unit to develop an S-band 2D direct radiating array (DRA) ground-based radar.

The 2D DRA is LeoLabs' fifth generation of satellite- and debris-tracking radar, says Dan Ceperley, LeoLabs' co-founder and chief operating officer. "Most of our radars going forward are going to be this technology," he says.

LeoLabs has six radars operational at sites in New Zealand, Australia, Costa Rica, the Azores, Texas and Alaska. These use earlier-generation dual S-band phased-array radars with "half-pipe" dishes that scan in one dimension.

The DRA is a flat antenna that can scan in two dimensions. Where the earlier radars can detect objects in low Earth orbit (LEO) within an arc above the half-pipe antenna, the 2D array has a wider field of view, Ceperley says, and the beam can be steered to search within a larger circular volume. The transmitters in the 2D array "just shoot [radio-frequency] power straight up into the sky, rather than at the dish surface," he says.

The DRA is also modular, allowing radars to be deployed more quickly, in more places, without the need to lay the foundations required for the large 1D arrays. The radars can also be scaled in size for different missions.

Growing numbers

Ceperley points to the growth in numbers of VLEO satellites, skimming the Earth's atmosphere at altitudes below 300 km (186 mi.). To detect and track VLEO satellites, "you do not need a very big radar, but you need a lot more of them," he says.

"And it's not only VLEO, it's also unannounced or uncoordinated launches," he says, noting that not all countries cooperate. "That's a question on the military side, but it's also on a space traffic coordination side. We need to find them fast, so we need a lot of radar sites."

The Phase 2 small business innovation research contract will take the 2D DRA to a technology readiness level of nine by mid-2025, with a multiple-module radar deployed and operational against satellites, feeding into LeoLabs' tracking network. The company is preparing to begin rooftop testing of the array at its Menlo Park, California, headquarters, Ceperley says.

In addition to the growth in VLEO, another recent trend LeoLabs has observed is an increase in proximity operations in LEO. "We're seeing universities and governments doing it. And there's about five ongoing proximity operations by China," he says.

"There's pairs of pairs of satellites working together, and one going back and forth between them. The Chinese spaceplane has been releasing and capturing objects. And they're doing this in orbits that right past commercial satellite constellation," Ceperley.

"It's this blending of defense and commercial and, frankly, I'm surprised at the speed it has. I didn't think it was going to come this fast," he says. "So we're seeing that proximity operations are driving a lot of use of our [space situational awareness] service."

PROGRAMS

Ariane 6 Completes Wet Dress Rehearsal

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The Ariane 6 rocket completed its wet-dress rehearsal test as European space officials work to ready their newest launcher for a July 9 inaugural mission.

The European Space Agency (ESA) said the rocket was fueled and then drained. The fueling process, involving around 180 metric tons of propellant, took about 3 1/2 hr. "The wet dress rehearsal included a full countdown to launch stopping as planned just a few seconds before a liftoff," ESA noted June 21.

The procedure that took place June 20 was a key event to ready Ariane 6 for its first flight from the European spaceport in

Kourou, French Guiana.

"The data gathered from the wet dress rehearsal will take at least a week to analyze in full and results will be communicated in the next task force update," ESA said.

The agency's director general, Josef Aschbacher, called it the "last milestone" ahead of liftoff as he reaffirmed the July 9 target launch date.

The Ariane 6 replaces the Ariane 5, which had its last mission in 2023. Europe is also working on a return to flight for the Vega-C to restore its launch capacity.

The first launch of an Ariane 6 was initially planned for July 2020. Organizational and technical challenges slowed development, though, and the COVID-19 pandemic compounded problems.

PROGRAMS

Flight Testing Begins On Upgraded Canadian CH-146Cs

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Bell has started flight testing of the first Royal Canadian Air Force (RCAF) version of the 412EP utility helicopter to receive a package of service-life-extending upgrades, the manufacturer said on June 20.

The aircraft, which the RCAF calls the CH-146C Mk. II Griffon, now enters a military certification process before a scheduled first delivery in 2026, Bell says.

The upgrades cover several areas, including engines, sensors,

cockpit displays and avionics. The Griffon Limited Life Extension (GLLE) aims to keep the 25-30-year-old fleet in service through the 2030s.

"The GLLE program will help ensure that the Royal Canadian Air Force is equipped with cutting-edge defense technologies for years to come," says Michael Nault, general manager at Bell Textron Canada.

The Canadian government awarded Bell a C\$800 million (\$584 million) deal in 2022 to launch the upgrade. The contract calls for Bell to upgrade the first several airframes, then select subcontractors to complete the remainder of the 85-aircraft CH-146 fleet.

FUNDING & POLICY

Romania Launches Construction Effort For NATO Air Base Expansion

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Romania has started construction on a new runway at its Mihail Kogalniceanu Air Base as part of a major expansion that will make it one of the largest NATO facilities in Europe.

The base, near the Black Sea coastal resort city of Constanta, is undergoing a 12.2 billion Romanian leu (\$2.68 billion) expansion to enable it to house thousands of NATO troops.

Speaking at the groundbreaking ceremony for the new runway, the Romanian Air Force chief, Maj. Gen. Leonard-Gabriel Baraboi, called the expansion an "important step in Romanian efforts" to adapt to the new regional security environment. He noted that Romania had become a "pillar of stability" in the Black Sea region.

Following Russia's annexation of nearby Crimea in 2014, NATO has boosted its presence at the base, with regular Black

Sea air policing operations using fighter aircraft from Canada, Finland and the UK. The U.S. Army also maintains a near-constant presence at the base with its helicopters. With the expansion, the base will grow to 2,800 hectares (6,819 acres), officials say.

The new 3,500-m (11,480-ft.) runway will be parallel to the existing pavement and is expected to be completed in 2027. The existing runway is shared with the civil airport serving Constanta. The new runway will be the first to be built in Romania since the end of the Cold War. "These investments will significantly improve the operational and training capabilities of the Romanian Air Force and those of the allies that will be able to be housed here. It also will significantly contribute to the economic development of local communities—Mihail Kogalniceanu—and the other administrative-territorial units in the vicinity," said Angel Tîlvar, Romania's minister for national defense. "This will be accomplished by creating jobs and attracting important investments for the entire Constanța county."

PROGRAMS

MDA Launches Kratos Testbed For Hypersonic Defense

STEVE TRIMBLE, steve.trimble@aviationweek.com

The U.S. Missile Defense Agency (MDA) reports it has launched a Hypersonic Testbed (HTB) to demonstrate a new experimental testing platform.

MDA also confirmed that Kratos built HTB-1, which was launched June 12 from the NASA Wallops Flight Facility in Virginia.

A Kratos spokesperson says the testbed is the Erinyes flyer, a hypersonic vehicle that the company revealed two years ago. A three-stage Oriole-Terrier-Terrier stack of sounding rockets launched the Erinyes to a hypersonic speed, the Kratos spokesperson says.

MDA's Hypersonic and Ballistic Tracking Space Sensor observed the flight from low Earth orbit, the agency notes. The

satellite reached orbit in mid-February to serve as an experimental platform for tracking from space the dim signatures of hypersonic vehicles against the warm background of the planet.

"HTB-1 represents a significant step forward in hypersonic testing capability," explains Lt. Gen. Heath Collins, MDA's director.

The agency plans to share data collected from the HTB-1 flight with "many partners" as part of its wider effort to develop new defenses against maneuvering hypersonic weapons.

Several companies want to be the sources of such suborbital, hypersonic launches by MDA and other Defense Department agencies.

A Kratos Defense executive said in May that the Zeus rocket and the Erinyes and Dark Fury hypersonic vehicles could be flown later this year, adding they are designed for supporting ballistic missile defense tests.

BUSINESS

Isar Aerospace Gets NATO Series-C Round Buy-In

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The NATO Innovation Fund included Germany's Isar Aerospace in its first round of direct investments to commercial technology companies, contributing to the launch provider's latest round of Series C fundraising.

Isar revealed on June 20 an extension of €65 million (\$69.6 million) to its Series C round, which now totals around €220 million.

The extension includes a "strong commitment" from the nascent NATO Innovation Fund, which recently announced its initial investments in deep-tech initiatives meant to address challenges in the defense and security realms.

Daniel Metzler, co-founder and CEO of Isar Aerospace, in a statement called the NATO Innovation Fund support "a strong sign of confidence in our approach, and it underlines the fundamental role of space technologies for our economies and societies. Even more, it shows that European governments need to promote and leverage private innovation and products to keep up globally."

Isar has now raised more than €400 million since its start in 2018.

Its inaugural two-stage orbital rocket, dubbed Spectrum, is being designed to deliver payloads of about 700 kg (1,540 lb.) to

Sun-synchronous orbit and up to 1,000 kg to low Earth orbit.

In May, Isar announced it would build a new commercial launch vehicle production facility near Munich, with the capacity to produce 40 Spectrum rockets per year.

VGP Group, a pan-European real estate firm, is supporting the facility's development.

The company has contracts for operations at the European Spaceport in Kourou, French Guiana, and at its exclusive pad at the new Andoya Spaceport in Norway. The Andoya site opened in November 2023, and once operational will be continental Europe's first gateway to space.

The NATO Innovation Fund was launched in 2022 as a stand-alone body to invest €1 billion in early stage startups across its allies' territories, focused on emerging and disruptive technologies such as artificial intelligence (AI), big-data processing, quantum technologies, propulsion and space. A fund spokesperson declined to share specific amounts for the initial investment round.

NATO member nations can opt into the venture capital fund as limited partners. The fund will make direct investments into startups in any of the participating nations.

These NATO members participate in the Innovation Fund: Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Turkey and the UK.

BUSINESS

Parent Lockheed Taps New Sikorsky Chief, Moves Lemmo To IWSS

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Lockheed Martin replaced Paul Lemmo as Sikorsky's top executive earlier this month, promoting Richard Benton from a division of Rotary and Mission Systems (RMS) to take control of the storied rotorcraft business.

Lockheed published no news releases about the leadership change. But Benton, formerly the head of the Training and Logistics Solutions teams in RMS, announced the move on his LinkedIn page.

"Sikorsky's focus is to pioneer flight solutions that bring people home everywhere, every time, and that purpose deeply resonates with me," Benton wrote on the social media channel.

Benton now becomes Sikorsky's first vice president and general manager, a new title that aligns the position with other Lockheed division executives, a Sikorsky spokesperson said.

An update on the "experience" section of Lemmo's LinkedIn profile shows he changed jobs this month. Lemmo is now vice president and general manager of Lockheed's Integrated Warfare Systems & Sensors (IWSS) business, which is focused on missile defense, radars, shipbuilding, directed energy and the Aegis combat system.

Benton inherits a 101-year-old Sikorsky business with several production lines, including the CH-53K and multiple versions of the UH-60 Black Hawk. Sikorsky Innovations, meanwhile, is developing vertical-takeoff-and-landing (VTOL) aircraft and enabling technologies, such as electric propulsion systems and advanced flight autonomy.

But Sikorsky lost a major contract opportunity in December 2022. The U.S. Army disqualified Sikorsky's bid for the Future Long Range Assault Aircraft as noncompliant. The Bell V-280 Valor won the contract by submitting a compliant proposal. The Valor will replace a subset of the Army's Black Hawk fleet with a tiltrotor.

OPERATIONS

USAF Considers Moving CV-22 Pilots Amid Fleet-Wide Restrictions

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U.S. Air Force Special Operations Command (AFSOC), as part of a review of its Bell Boeing CV-22 fleet, is considering a shift of aviators to other platforms as the fleet faces at least a year of limited operations.

AFSOC announced earlier this year that it is conducting a comprehensive review of its tiltrotor fleet, focusing on how it is organized, trained and equipped to operate effectively and safely. After the review was completed in May, AFSOC earlier this month reached out across the command to identify aviators who are candidates to cross-flow to other aircraft.

"AFSOC is currently evaluating all aspects of our CV-22 operations to ensure that we are properly organized, trained and equipped to conduct safe and effective missions," the command spokesperson, Lt. Col. Rebecca Heyse, tells Aviation Week. "As part of this evaluation, we are considering various courses of action, including an analysis of the size of our CV-22 aircrew force."

Initial analysis shows the command might want to transfer fewer than a dozen pilots to other airframes. The main goal of AFSOC's evaluation is to ensure aviators receive necessary experience and flight hours to operate available aircraft safely and effectively, as well as having opportunities for career development.

"We are currently analyzing the data and information necessary to make an informed decision, and no final decisions have

been made at this time," Heyse says. "AFSOC has a long history of cross-flowing aviators into other AFSOC airframes to season a portion of our force through all of AFSOC's mission areas."

AFSOC is finalizing an investigation into the Nov. 29, 2023, crash of a CV-22 off Japan that killed eight airmen. Initial indicators showed a material failure was the cause of the crash, prompting a three-month grounding of the V-22 fleet. Since the grounding was lifted in March, V-22s have returned to limited flight operations.

Vice Adm. Carl Chebi, commander of Naval Air Systems Command, told lawmakers June 11 that a return to full, unlimited operations is not expected until mid-2025. V-22s that have been cleared to resume flight are currently limited to operating within 30 min. of a divert airfield. A small number of CV-22s have returned to flight, while U.S. Marine Corps MV-22s are flying more often and have deployed to exercises in Australia and Sweden.

Before the crash, AFSOC placed 15 CV-22s in flyable storage at Cannon AFB, New Mexico, to provide parts and support modification lines for multiple aircraft improvements, most notably the ongoing Nacelle Improvement program designed to simplify maintenance and improve the aircraft's availability rate.

The aircraft are not tail-number specific, with the pool rotated through modification lines and the operational fleet, the command says. AFSOC expects to decide in late 2025 whether to return the flyable-storage aircraft to operational squadrons. With 15 aircraft in ground storage, that leaves 39 available for operations. The

CV-22 PILOTS, P. 9

PROGRAMS

USAF Has Not Backed Up Decision To Retire F-22s, GAO Says

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The U.S. Air Force did not sufficiently back up its proposal to retire older Block 20 Lockheed Martin F-22s, the U.S. Government Accountability Office (GAO) argues in a new report that coincides with congressional moves to again block the service's plan.

The GAO on June 18 released an assessment of the Air Force's proposal to retire 32 of the F-22s, which was made first in its fiscal 2023 request and repeated both last year and this year. The older Raptors are not considered combat-capable without improved radars, avionics and the ability to fire AIM-9X and AIM-120D missiles. The service says the retirements are needed because it would be cost-prohibitive to upgrade these Raptors, and funding is needed for other priorities.

But the watchdog GAO says the Air Force has not effectively said how it would conduct F-22 testing and training—the two roles that the Block 20s serve. The Air Force also has not documented challenges that combat units may face if needed to use Blocks 30 and 35 F-22s for test and training.

"The Air Force and Congress face difficult choices about how to use Air Force resources to best meet current operational needs while also ensuring they have superior capabilities in the future," the GAO writes. "However, difficult decisions should be based on documented analysis. The Air Force has not collected and documented the information required to make a fully informed decision on whether to keep the Block 20 aircraft in their current condition, upgrade them or divest."

The report says Air Force pilots conduct more than 90% of their training in the Block 20 aircraft, with the remaining 10% at operational units. Without the Block 20s, pilots would likely perform their first takeoffs in the combat-capable F-22s, with the increasing training demand causing more wear on those Raptors.

Any potential savings from retiring the Block 20s would not

account for increased maintenance for those Block 30/35s, the GAO argues.

Air Combat Command officials told the GAO that it could reassign some of its Block 30/35s for test and training, though that would cause operational impacts, the watchdog argues. Combat units currently have 24 F-22s per unit, to ensure 12 are mission-capable at any given time. This change could result in combat units having as few as 18 F-22s total.

The Air Force has said it would cost about \$3.3 billion over 15 years to upgrade the Block 20 fleet to the Block 30 or 35 standard, though that estimate was provided without supporting data, the GAO says.

In response to the GAO's findings, the Air Force did not concur with the recommendation that the Air Force needs to document and assess cost, schedule and risk associated with divesting the aircraft. The decision to retire the Block 20s was based on Defense Planning Guidance to take risk in the near term to modernize, with the Raptors identified as the largest fighter offset based on criteria, including the least number of aircraft affected, the operational cost, the lack of combat capability and the bill needed to modernize them.

"Divestment is never a decision that is undertaken lightly but one that leadership must make, in close partnership with its stakeholders, when it becomes clear a certain level of resources is no longer in the best interest of the department or the taxpayer," the Air Force argues.

The Air Force also did not concur with a recommendation that it needs to better document the costs to upgrade the Block 20s. In response, the Air Force explains the top items driving those costs are due to the fact that the APG-77 radar in the Block 30/35s was discontinued in 2011. Many components have not been produced since the original manufacture, production restarts for some components would have to compete with the F-35, and key suppliers may not be willing to give up data rights to compete new production.

CV-22 PILOTS, from P. 8

Air Force, in its fiscal 2025 budget request, also is proposing to retire one CV-22. The large reduction in its operational fleet leaves aviators idle and potentially losing proficiencies.

Leaders and Osprey crews have said they want to return to flight, and worry about the training effects of reduced operations. The cross-flow issue is not unique to the Air Force, as recent U.S. Marine Corps aviation transition board results have shown pilots moving to aircraft such as the KC-130 from the V-22.

AFSOC Commander Gen. Tony Bauernfeind told Aviation Week in May that the command is focused on ensuring it is

maximizing the safety of the CV-22, and that it does not require as many maintenance hours while also lowering the cost per flying hour. While the command is looking at future efforts, such as DARPA's Speed and Runway Independent Technologies (Sprint) demonstrator, the need for the CV-22's mission is not expected to go away in the near term.

"At the end of the day, I remind everybody, we still have a long-standing requirement for a platform that has long range, high speed and can do the things that, right now, only the CV-22 can do," Bauernfeind says.

BUSINESS

It's Different This Time For Bombardier

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Bombardier has long had outsized ambitions, best exemplified by its near-death experience in the mid-2010s following years of bruising competition with Boeing and Airbus. A timely bailout by the Quebec government, for whom Bombardier is a regional as well as national champion, was the first step on the long road to recovery.

Nearly a decade on, and Bombardier has its mojo back. The company is consistently profitable, with strong demand for its business jets. It is on track to deliver 150-155 jets in 2024. Activity from the American market remains strong, while the company is seeing activity in the Middle East and Asia, and there are signs of an uptick in Europe, CEO Eric Martel said during a first-quarter earnings call.

In an April 15 report, National Bank of Canada Financial Market Research (NBCFM) said even if new jet orders slow sharply, it still expects Bombardier's \$14.2 billion backlog to support the company's delivery ramp from 138 jets in 2023 to 150-155 this year, with further increases in 2025 possible. NBCFM observes that "activity on Bombardier model jets is running 7% higher [year-over-year], which we view as a solid leading indicator that order activity should remain solid."

Aftermarket performance

In the aftermarket, Bombardier is swinging for the fences—and so far, knocking it out of the park.

It reached a 46% market share target for addressable maintenance services of its business jets in 2024, a year ahead of schedule, and will likely surpass 50% next year, with a goal of 70% by 2030.

Of the major business jet makers, only market leader Gulfstream has a bigger share of that market.

Investors like what they see. Excluding pandemic-induced doldrums, which were more about an industrywide slump than Bombardier-specific missteps, the company's share price has generally performed well in recent years. Currently trading at \$62.77 per share, it has risen 28% over the past year and 49.5% in the last five.

The question now is if Bombardier's growing defense foray will complement its existing business jet products. During Bombardier's first-quarter earnings call, Martel described 2023 as "a banner year for Bombardier defense."

He cited deliveries to the U.S. Air Force as part of the BACN [U.S. Air Force Battlefield Airborne Communications Node

Program] and Saab as part of the GlobalEye Solution for the Swedish Air Force.

Further, in December 2023, Bombardier Defense won a firm-fixed-price contract to supply at least one Global 6500 jet to the U.S. Army as a prototype airframe for a new aircraft program known as High Accuracy Detection and Exploitation System (HADES).

"This marks the first time the Army will use a large business jet for intelligence, surveillance and reconnaissance missions and represents a tremendous show of trust for Bombardier Defense," Martel said.

Richard Aboulafia, managing director at AeroDynamic Advisory, sees Bombardier's interest in defense as "quite low risk" as "it does not involve any upfront expense," while basing the business in Wichita "gives them an American industry footprint."

Pegasus

In early June, Bombardier Defense and its German partners Hensoldt and Lufthansa Technik Defense announced modification work in Wichita to integrate the Persistent German Airborne Surveillance System (Pegasus) signal-intelligence (Sigint) system on the Bombardier Global 6000 jet had been successful and would be completed by the Canadian company in Hamburg.

"The rollout of the first structurally modified Global 6000 aircraft indeed marks a major milestone, not just as an important prerequisite for Lufthansa Technik Defense's Pegasus work packages, but also for the overall progress of this pioneering signals intelligence aircraft project," Michael von Puttkamer, vice president for special aircraft services at Lufthansa Technik, said in a statement.

In a March 2023 report, Aviation Week noted most of Bombardier's competitors in the defense sector use composite structures in the wing and fuselage, which makes modification costlier with the antennas, pods and weapon stations needed for special missions.

In contrast, the Global 6000/6500's metal airframe and wings, long-range performance and ample supply of onboard electric power have made the Bombardier jet popular with military and government operators.

Since defense programs often take a long time before they come to fruition, investors will have to be patient. These are still early days for Bombardier's defense expansion, but so far, they seem willing to take Martel at his word.

In a best-case scenario, Bombardier will evolve into a more diversified aircraft manufacturer better able to compete against bigger and better capitalized competitors.

Aviation Week Forecasts

**V-22 Production To End As It Began,
 Under Cloud of Safety Concerns**

[Editor’s Note: For more information on Aviation Week Network’s 2024 Military Fleet & Maintenance, Repair and Overhaul forecast visit <https://pgs.aviationweek.com/Fleet-Forecasts>.]

On June 12, the House Oversight Committee convened to discuss the problematic safety record of the Bell Boeing V-22 in the wake of a series of crashes in the last two and a half years that have claimed 20 lives. The tiltrotor, which has been beset by safety concerns since its inception, is operating with strictures that curtail the transport fleet’s usefulness and potentially sideline it from some missions entirely.

Families of lost flight crews looked on from the gallery as members of Congress grilled department and company officials on the program’s proposed improvements and indicated that V-22 operations would be shuttered if further accidents occur before useful fixes are implemented.

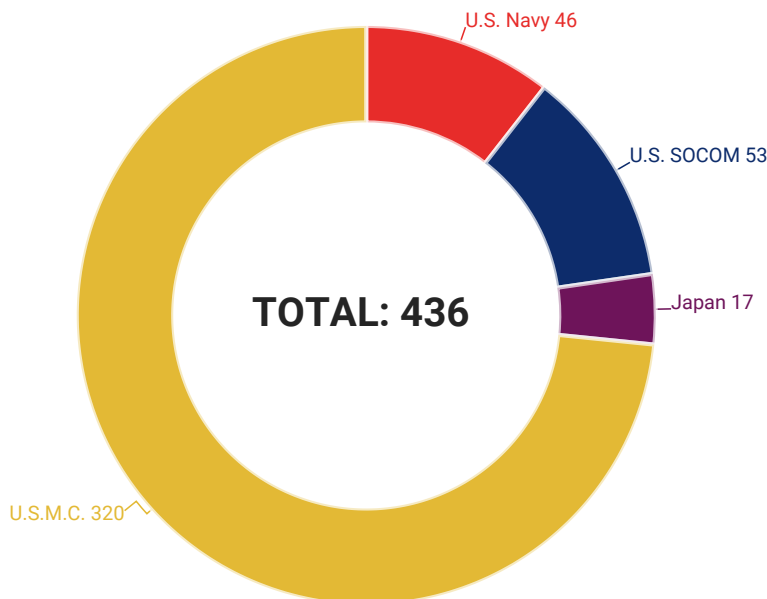
According to Aviation Week’s Military Fleet Discovery tool, the V-22 is in service with the U.S. Navy, Marine Corps, and the unified Special Operations Command (SOCOM). Three variants are currently in operation—naval aircrews operate the CMV-22B, Marine Corps units fly the MV-22B, and

SOCOM forces are transported on the CV-22B. Bell Boeing’s only export customer for the V-22 has been Japan, whose ground forces operate the MV-22B.

Aviation Week data indicate a combined fleet of 436 tiltrotors by the end of this year. The Marines have a current fleet of 316 MV-22Bs divided between amphibious transport (303 tails) and VIP transport units (13 tails). Four more amphibious examples are expected before year’s end. The U.S. Navy operates 39 of the tiltrotors; 35 are general maritime transports augmented by four amphibious tails. Seven more aircraft are due by December. SOCOM fields 51 special operations transports, with two more due by year’s end. Japan’s ground forces have a current fleet of 17 tails. Eleven additional V-22s are due in 2025 between the Marines (five expected) and U.S. Navy (six expected). Beyond these final deliveries, Bell Boeing has no outstanding orders.

Final procurements of the V-22 were included in the 2023 budget, and production will soon be shutting down. The troubled tiltrotor had been slated to operate until 2055, but Congress may have seen enough. That timeline is likely under scrutiny.

2024 | V-22 Fleets by Operator



Source: Aviation Week Intelligence Network (AWIN) 2024 Military Fleet & MRO Forecast. For more information about the 2024 Forecast and other Aviation Week data products, please see <https://pgs.aviationweek.com/forecast>

Prepared by Brandon Patrick.

Calendar

To list an event, send information in calendar format to aero.calendar@aviationweek.com. For a complete list of Aviation Week Network's upcoming events, and to register, visit www.aviationweek.com/events (**Bold type indicates new calendar listing.**)

June 26-27—MRO BEER, Radisson Blu Hotel Lietuva, Vilnius, Lithuania. <https://mrobeer.aviationweek.com/en/home.html>

June 26-27—AAPA Asia and Pacific Turboprop Safety Conference, Pavilion Hotel, Kuala Lumpur, Malaysia. <https://events.eventzilla.net/e/aptsc-asia-and-pacific-turboprop-safety-conference-2024-2138609261>

July 10-12—Smart Airports & Regions Conference and Exhibition, Colorado Convention Center, Denver, Colorado. <https://smart-airports.com/sar/>

July 22-26—Farnborough International Airshow, Hampshire, United Kingdom. <https://www.farnboroughairshow.com/>

July 28-30—RAA 2024 Summer Seminars, Jacquard Hotel & Rooftop, Denver, Colorado. <https://www.raa.org/events/2024-summer-seminars>

Aug. 22-23—CAPA Airline Leader Summit Latin America & Caribbean, Port of Spain, Trinidad and Tobago. <https://laas24.capaevents.com/home>

Sept. 2-5—Egypt International Airshow, El Alamein International Airport, Ghazal, El Dabaa, Egypt. <https://www.egypt-air-show.com>

Sept. 10-11—U.S. Chamber of Commerce Global

Aerospace Summit, Ronald Reagan Building and International Trade Center, Washington, DC. <https://events.uschamber.com/globalaerospacesummit24>

Sept. 10-11—Aero-Engine Europe, Beurs van Berlage, Amsterdam, The Netherlands. <https://www.aeroengineconference.com/en/home.html>

Sept. 12-13—CAPA Airline Leader Summit Australia-Pacific, The Star, Brisbane, Australia. <https://apas24.capaevents.com/>

Sept. 24-25—IATA World Sustainability Symposium, Loews Coral Gables Hotel, Miami, Florida. <https://www.iata.org/en/events/all/world-sustainability-symposium>

Sept. 24-26—MRO Asia-Pacific, Singapore Expo Convention and Exhibition Centre, Singapore. <https://mroasia.aviationweek.com/en/home.html>

Oct. 6-8—Routes World 2024, Exhibition World Bahrain, Bahrain International Airport. <https://www.routesonline.com/events/250/routes-world-2024>

Oct. 8-9—Aviation Week Network Digital Transformation Summit, Delta by Marriott Hotels Dallas Southlake, Southlake, Texas. <https://digital-transformation.aviationweek.com>

Oct. 22-24—MRO Europe, Fira Barcelona, Barcelona, Spain. <https://mroeuropa.aviationweek.com/en/home.html>

Nov. 26-28—ACI Airports Innovate 2024, Rome, Italy. <https://mroasia.aviationweek.com/en/home.html>

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