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AVIATION WEEK Intelligence NETWORK

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Ariane Delay

Unfavorable weather has prompted Arianespace to push back the planned launch of the Galaxy 30, MEV-2 and BSAT-4b spacecraft from Friday to no earlier than Saturday, Aug. 15, in a launch window open from 5:33 p.m. to 6:20 p.m. EDT. "The Ariane 5 with its three satellite payloads for Flight VA253 was transferred today to the Guiana Space Center's ELA-3 launch zone," the company announced. "However, due to currently unfavorable wind conditions at altitude above the Guiana Space Center, Arianespace has decided not to initiate the final phase of launch preparation operations." The three payloads "are in stable and safe conditions," the company says.

Daily Briefs

DELOITTE CONSULTING LLC will build the Joint Common Foundation artificial intelligence development environment for the Pentagon's Joint Artificial Intelligence Center under $106.4m contract.

BOEING has $11.7m U.S. Army contract for remanufactured Apache AH-64E aircraft.

NORTHROP GRUMMAN has $10m U.S. Army contract for remanufacture/delivery of APR-39C(V)1 radar data processor.

BOEING has $95m U.S. Air Force contract for Joint Direct Attack Munition technical support/integration.

ST ENGINEERING's aerospace unit promoted deputy president Jeffrey Lam to president, effective Oct. 1. He succeeds Lim Serh Ghee, who will become aerospace COO.

PROGRAMS

B-21 Avionics Testbed Aircraft Now Operating, USAF Official Says

STEVE TRIMBLE, steve.trimble@aviationweek.com

The U.S. Air Force has commissioned a flying testbed aircraft to test the avionics system and software for the Northrop Grumman B-21 bomber, a senior official said Aug. 13.

The first B-21 test aircraft is being assembled in Palmdale, California, but the flying testbed allows the stealth bomber program to "buy down risk," said Randall Walden, director of the Air Force's Rapid Capabilities Office, which is managing the program.

"We have a flight test aircraft that we've been hosting some of these subsystems on," Walden said. "We're doing it kind of in a parallel approach, working out some of the bugs with the software as well as the subsystems."

Walden, speaking to the Air Force Association's Mitchell Institute, did not identify the flying testbed, but his remarks come two months after the appearance of a green Boeing 737 owned by the Air Force with registration N712JM.

The Lockheed Martin F-35 program also used a 737 to check out avionics and mission systems before test flights of the stealth fighter started in 2006.

"When you can buy down risk with subsystems on even another platform, no matter what it is like you get into the air and use some of the software and work those bugs out it goes a long way," Walden said.

The Air Force expects to field the B-21 in the mid-2020s, about a decade after

B-21, P. 2

B-21, From P. 1

awarding the engineering and manufacturing development contract to Northrop in 2015.

The development program remains on track, but Walden is eager to begin testing as soon as possible.

"All of the tough critical designs, all of the hard engineering, is behind us," Walden said. "I know we're not going to be immune from design flaws. We're going to have to work through those, and we're doing some of that today. I want to find out what those design deficiencies are as fast as I can to get on with the solution."

PROGRAMS

USAF Seeks To Add Mayhem To Hypersonic Portfolio

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Yet another hypersonic demonstration program is afoot with the U.S. Defense Department.

The new Mayhem program seeks to create a "larger-scale, expendable, air-breathing, hypersonic, multimission flight demonstrator," according to an Air Force Research Laboratory (AFRL) request for information (RFI) published Aug. 13.

The Mayhem vehicle must be large enough to accommodate three separate payloads and carry them "farther than current hypersonic capabilities allow," AFRL said.

The size and range will make the air-breathing Mayhem different than "similar research" by other AFRL programs, including the Enhanced Operational Scramjet Technology, Enabling Technologies for High-speed Operable Systems, High Speed Strike Weapon and Hypersonic Air-breathing Weapon Concept (HAWC).

In late April, the U.S. Air Force also unveiled plans for a Future Hypersonic Program, seeking to develop an operational hypersonic cruise missile. Boeing, Lockheed Martin and Raytheon will compete to develop an operational prototype, the Air Force announced in early August.

The Air Force also is sponsoring rocket-boosted hypersonic systems, including the Lockheed AGM-183A glider and Generation Orbit X-60A research platform.

The Mayhem demonstrator could be split into separate vehicle demonstrators. According to the RFI, AFRL is considering an acquisition strategy that would select two designs each for the air vehicles and propulsion systems.

"Conceptually, two different air vehicles and two different propulsion contractors could be awarded each one of the … contracts," AFRL said.

AFRL "would like to accomplish" the first flight of the Mayhem demonstration within five years, the agency said.

Responses to the RFI are due Sept. 25.

FUNDING & POLICY

Will The Pentagon Make COVID-19 Relief Mechanism Permanent?

JEN DIMASCIO, jen.dimascio@aviationweek.com

The Pentagon appears willing to consider permanently paying companies a greater percentage of the costs associated with the work underway on contracts.

In response to the coronavirus pandemic that began in March, the Pentagon changed its rules for progress payments to allow large prime contractors to receive 90% of the cost of the work in progress—an increase from the previous 80%. For smaller contractors, the share would grow to 95% instead of 90%. The idea was to keep cash flowing through the supply chain, particularly to help small aerospace suppliers survive.

In light of the pandemic, the policy was put in place for an indefinite amount of time. During a virtual conference sponsored by the Professional Services Council, Ellen Lord, the Pentagon's acquisition chief, was asked whether the military could provide certainty about how long that policy would last or whether it might make the increased progress payments permanent. Lord replied that she would need data. "Data, data, data," she said.

Lord said the chief criticism she has received about changing the progress payment policy is the perception that it benefits large corporations rather than the small companies it is intended to help. She said the Pentagon would need more information from small to mid-sized companies about the positive impact it has had on their business.

"What we need is feedback from the small companies, especially, as well as mid-tier companies saying the money was flowed down to us, we received it, and it made a difference," Lord said.

PROGRAMS

Canadian Start-Up Unveils Close Air Support Aircraft Concept

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A Canadian start-up has unveiled a concept for a twin-engined, twin-boomed, close air support aircraft with a profile similar to the Vietnam-era North American Rockwell OV-10.

Montreal-based Icarus Aerospace is seeking investors for financing to create a $4.5 million digital engineering model of the two-seat Tactical Air Vehicle (TAV).

The 8,000-lb. TAV concept is listed with a payload of 8,000 lb., an 8g-rated structure and an unrefueled endurance of 6.5 hr.

Bombardier veterans

The Icarus team, staffed mainly with former Bombardier engineers, hopes to partner with major aerospace primes on defense offset programs required under the Industrial and Technological Benefits policy, said Marko Ivankovic, senior product development manager and flight test engineer at Icarus Aerospace.

Lockheed Martin, which has proposed the F-35A for Canada's Future Fighter Capability contract, has shown interest helping Icarus develop the TAV with the U.S. manufacturer's sensors, Ivankovic said. Leonardo's UK arm also says the TAV would feature a conformal Osprey radar.

Although primarily designed for close air support, the TAV program may have arisen too late to compete for the Armed Overwatch contract being offered now by U.S. Special Operations Command. Icarus proposed submitting a digital model of the TAV for a planned Armed Overwatch flight evaluation in November, but SOCOM declined the offer, Ivankovic said. The demonstration will be limited to flying prototypes.

30 months

Ivankovic estimated that Icarus' team would need 30 months to deliver an operational version of the TAV. The company plans to manufacture the TAV in Montreal, and "missionize" the aircraft in the customer's country, Ivankovic said. The missionized, manned version of the TAV will be called Wasp.

Other versions of the TAV could be offered for defense programs in Canada. The BRANTA, an optionally-piloted vehicle, could be offered for the Department of National Defense's Remotely Piloted Air Systems project. As Canada considers a P-3C replacement, a manned TAV also could be configured for coastal patrol and anti-submarine warfare, Ivankovic said.

PROGRAMS

KAI Proposes T-50 For Australian Trainer Requirement

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BEIJING—Korea Aerospace Industries (KAI) has confirmed it will be one of four competitors for an Australian lead-in fighter trainer requirement, proposing its T-50 family.

KAI said it received and responded to a request for information from the Australian Defense Department, which is seeking a replacement for 33 BAE Systems Hawk Mk. 127 aircraft.

The other candidate models are the Boeing T-7A Red Hawk, the Leonardo M-346 Master, and BAE's Hawk, insofar as it could simply be retained in service.

Playing the role of enemy or friendly combat aircraft in exercises also is required, however, perhaps demanding more performance than is available from the Hawk Mk.127.

"The T-50 was developed for multirole purpose, from advanced jet trainer, lead-in fighter trainer to light combat aircraft missions, and it will meet the requirements of the Australian Defense [Department] for its new lead-in fighter training system," KAI said in a written reply to questions.

The department has planned to retire the Hawks in 2026, even though an upgrade program finished only last year brought them virtually to the latest standard operated by Britain.

The requirement appeared in the 2016 edition of the department's regular, vague spending plan, which allocated A$4-5 billion ($2.9-3.6 billion). But the project was left out of the edition issued on July 1, 2020, without explanation.

The exact requirement is still undefined. When it is more mature, KAI will propose an optimized T-50 configuration, the company said.

The program is designated Air 6002 Phase 1.

Listing the T-50's advantages for Australia, KAI said the aircraft is proven and equipped with advanced avionics compatible with modern fighters. Following accumulated experience, including with export customers, logistics support is stable and cost-effective, KAI added.

"KAI will offer the Australia Defense [Department] a total training system as the solution to meet its future demands."

BUSINESS

An Unemployment Subsidy For The Aerospace Supply Chain?

MICHAEL BRUNO, michael.bruno@aviationweek.com

What makes the ongoing aerospace workforce cuts so tragic is that up until the start of this year, the aircraft manufacturing and MRO sectors were desperate to hire more workers—and in three to five years, they might be again, albeit probably not at pre-pandemic levels.

Still, the widespread belief in industry is that there will come a time in the middle of the decade when business activity recovers to 2019 levels, and with it, the aerospace sector will be short of the workers it needs to produce or provide service at forecasted levels. While five years can seem like forever in most industries, in aerospace—where new-aircraft programs can easily take a decade to roll out product—it is a blink of an eye.

Political motivations

Politicians have obvious motivations to spend taxpayer money making sure their own local constituents do not go unemployed for long, especially before important elections such as the coming U.S. presidential vote on Nov. 3. Worker unions do too. Less appreciated, however, is how ongoing subsidization of furloughed workers is good for companies and the country alike. But interests are coming together and now there is a new bipartisan, bicameral effort in Congress.

"Kansans have built general aviation and commercial airplanes for a century, helping us become the Air Capital of the World. However, recent groundings and the negative effects of COVID-19 have slowed production rates to record lows, putting thousands of Kansans out of work and jeopardizing our local companies' stability," Republican Rep. Ron Estes (Kan.) said. "The Aviation Manufacturing Jobs Protection Act will help keep workers on the payroll and connected with their aviation jobs, which solves the short-term unemployment issue and keeps our skilled workforce here in the Sunflower State for the long term. As aviation manufacturing ramps back up, these employees will benefit from maintaining a connection with their employer and be able to rejoin the workforce easily."

Estes and Rep. Rick Larsen (D-Wash.), chairman of the House Transportation Aviation subcommittee, recently introduced the Aviation Manufacturing Jobs Protection Act of 2020. If enacted, it would establish a relatively short-term relief program providing up to 50% of pay and benefits for employees at risk of being furloughed due to the pandemic. It is the companion bill to the proposed Public-Private Partnership to Preserve Jobs in the Aviation Manufacturing Industry Act of 2020, introduced by Sens. Jerry Moran (R-Kan.) and Mark Warner (D-Va.).

Rough counts of planned and announced layoffs across aerospace already amount to more 100,000 affected workers, and many more have been furloughed. With an airliner passenger recovery not seen fully until 2024, more workers could be laid off or billets terminated as manufacturers rightsize to 30-50% less program capacity needs or elevated aircraft retirements in the coming years.

Lobbying effort

Several aviation, aerospace and defense trade associations have been lobbying lawmakers to do something for months. While airlines, airport services companies and small businesses have received payroll support from various Treasury Department programs, the middle market and OEMs largely have not. Industry has declined the equity-for-aid offer under the Coronavirus Aid, Relief, and Economic Security (CARES) Act, so many have outlined major workforce cuts as part of maintaining liquidity.

"Pandemic-related economic disruptions have decimated America's aviation maintenance industry and there's very little light at the end of the tunnel," Aeronautical Repair Station Association Executive Vice President Christian Klein said. "The Estes-Larsen bill is a lifeline for an industry that's seen revenues fall by roughly half and that may have lost more than 50,000 workers—a quarter of our workforce—in recent months. It will save jobs in the near term—particularly in aviation-heavy states like Kansas and Washington—and help ensure that when the aviation sector begins to recover, repair stations will still have the technical talent they need to keep the nation's aircraft fleet operating safely."

Both major political parties in Washington and President Donald Trump have made it abundantly clear that their top priority in economic relief has been to maintain employment levels as much as possible. The proposed Aviation Manufacturing Jobs Protection Act could do that to a far greater degree for the critical aerospace & defense (A&D) sector, and in the long term it would preserve manufacturing prowess and allow the industry to return to its point position as an economic booster to national GDP. The truth is that A&D has never been a marketplace free of government support, and the worst downturn in the sector's history is not the right time to let free-market forces lead to its consolidation.

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FUNDING & POLICY

USAF Set To Award F-16 FMS Contract Vehicle To Lockheed

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A single contract vehicle to support multiple, foreign F-16 buyers will be awarded to Lockheed Martin on Aug. 14, the U.S. Air Force confirmed in an email.

The Defense Department typically awards contracts for Foreign Military Sales deals on a case-by-case business.

But the F-16 Block 70/72 contract to be awarded this week will use an indefinite delivery/indefinite quantity (ID/IQ) format. As each foreign buyer signs an order, the Air Force will sign a task order under the ID/IQ contract to Lockheed, rather than renegotiating pricing for every foreign customer.

The ID/IQ could be used to support several pending deals by foreign customers, if they are signed. Taiwan has been approved to buy 66 F-16 Block 70s, but has not yet signed the contract. Morocco is cleared by the U.S. State Department to purchase 26 F-16 Block 72 jets.

Lockheed currently is building F-16 Block 70/72s for several countries, including Slovakia, Bulgaria and Bahrain. The company re-opened final assembly in Greenville, South Carolina, last year after closing the original line in Fort Worth, Texas, to make room for expanded F-35 production.

FUNDING & POLICY

NASA Awards Task Order For Vertiport Research

BILL CAREY, bill.carey@aviationweek.com

NASA has awarded New York State's FAA-designated unmanned aircraft systems (UAS) test site an $897,000 task order to research automation technology for vertiport operations.

Under NASA's Advanced Air Mobility (AAM) Project, the test site at Griffiss International Airport in Rome, New York, will study barriers to vertiport operations, identify infrastructure requirements and develop automation technologies to support growing traffic.

The task order also will help develop testing range requirements for the NASA AAM national campaign—formerly known as the Urban Air Mobility Grand Challenge—which will host events highlighting vertiport operations for electric vertical takeoff and landing vehicles.

Oneida County Executive Anthony J. Picente Jr. announced the task order on Aug. 11.

"This new NASA task order has positioned Oneida County to be the leader in AAM development," said Chad Lawrence, the county's aviation commissioner. "It is a testament to the high quality of work conducted by our UAS test site and its partners."

The FAA designated Griffiss Airport as one of several national UAS test sites in December 2013. The Northeast UAS Airspace Integration Research (NUAIR) organization based in Syracuse, New York, manages the operation.

NUAIR plans to collaborate on the NASA task order with Boeing, the General Aviation Manufacturers Association, Helicopter Association International, Mosaic ATM, Crown Consulting, Deloitte and 5-Alpha.

PROGRAMS

Russian Military To Place First Order For Upgraded Su-30SM2 Fighters

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MOSCOW—The Russian military will upgrade one of its core multirole fighters–the two-seat Sukhoi Su-30SM.

Defense Minister Sergey Shoigu announced during his visit to the type's assembly facilities in Irkutsk on Aug. 12 that the ministry will order 21 Su-30SM2 aircraft this year.

Neither the defense ministry nor Irkut Corp., a subsidiary of United Aircraft Corp. (UAC), which manufactures the type, explained the difference between the SM2 version and the baseline model. In 2017, UAC discussed with the military an upgrade program dubbed Su-30SM1 that called for improvement of the avionics suite and the introduction of new air-launched weapons.

"The SM2 version is likely to be unified with the single-seat Su-35S fighter including newer avionics and more powerful Item 117S jet engines," said Konstantin Makienko, a deputy head of the Moscow-based Center for Analysis of Strategies and Technologies, a defense think tank.

Shoigu said the new order would be worth more than 100 billion rubles (about $1.4 billion), but this sum will also include 25 Yakovlev Yak-130 jet trainers. The latter type also is manufactured in Irkutsk.

Some upgrades may also be introduced to the in-service Su-30SM fleet, as Shoigu promised to sign a contract valued at 7.2 billion rubles (about $100 million) for the type's repair.

The Su-30SM is based on Russia's export bestseller—the Su-30MKI two-seat generation 4++ fighter. It was designed at the end of the 1990s under the requirements of the Indian Air Force. Various modifications of this fighter also have been delivered to Algeria, Armenia, Belarus, Kazakhstan and Malaysia.

Since 2012, the Russian military has ordered more than 100 Su-30SMs for both the Air Force and Navy. The Russian Air Force purchases this type along with single-seat Su-35S fighters. The military has ordered 98 single-seaters, while the last six aircraft are scheduled to arrive this autumn.

Visiting the Su-35 assembly line in Komsomolsk-on-Amur, in Khabarovsk region, the same day, Shoigu promised to place a new order for Su-35Ss worth 70 billion rubles this year. A video released by the region's authorities shows that the defense minister and UAC official discussed that the new contract would include 20 fighters of the type.

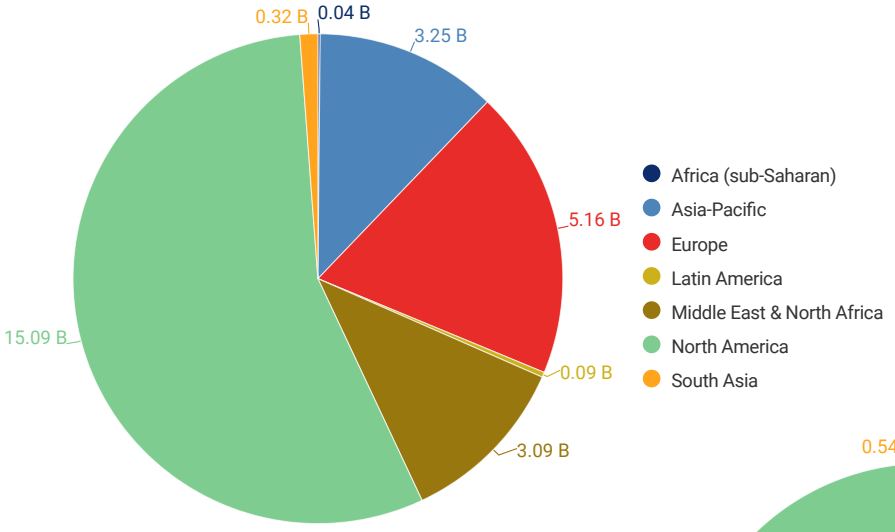
Aviation Week Forecasts

Western Fighter MRO By Region 2020-2029

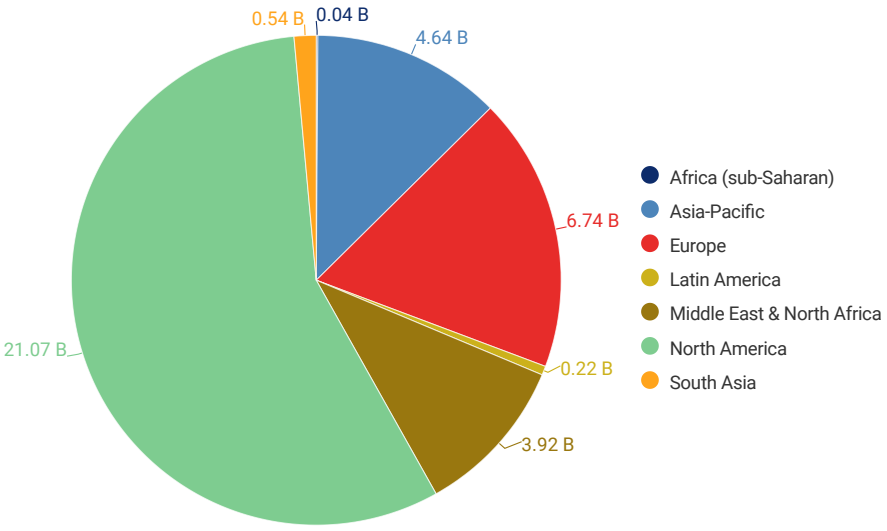
AVIATION WEEK NETWORK forecasts that the world's fleet of western-designed fighter aircraft will generate $322.1 billion in maintenance, repair and overhaul (MRO) demand over the next decade. Annual demand will rise from $27.1 billion in 2020 to $37.2 billion in 2029, an increase of 37.2% over the forecast period.

Regionally, Latin America is growing by the largest margin and sub-Saharan Africa at the smallest. Latin American fighter MRO will generate $87.3 million in 2020 but will grow to $218.1 million by 2029, a substantial increase of nearly 150%. This is driven primarily by Brazil's entry into the fighter market with the acquisition over the next decade of the Saab JAS 39 Gripen, which will replace Brazil's current fleet of light combat aircraft. Sub-Saharan Africa will grow by a modest 15.6%, from $38.3 million to $44.3 million.

North America, Europe and Asia-Pacific are the three largest regions for MRO demand, generating a total of $32.4 billion in 2029 and accounting for 87% of the total. North America will account for 57% of the total MRO demand over the next decade, driven mainly by the F-35 family of fighters. Remarkably, despite the F-35 fleet being only 22% of the size of the global Lockheed Martin F-16 fleet in 2020, it will generate 77.6% of the same amount of MRO for that year. The F-35's MRO generation will nearly quadruple to $14.7 billion by 2029, a compound annual growth rate of 15.9%. By 2029, the 2,167 F-35s in service will generate 39.6% of all global western fighter MRO demand.



Western Fighter MRO By Region: 2020



Western Fighter MRO By Region: 2029

Source: Aviation Week Intelligence Network (AWIN) 2020 Military Fleet & MRO Forecast
For more information about the 2020 Forecast and other Aviation Week data products, please see:
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