

## **Airbus receives first A320 Flight Hour Services maintenance contract in Europe to support Finnair's entire single aisle fleet**

Finnair has selected Airbus's Flight Hour Services (FHS) to support its entire A320 Family fleet (35 aircraft), thus becoming the first European FHS customer for an A320 fleet.

Following recent contracts in Asia Pacific and the MiddleEast region, this first FHS agreement from Europe demonstrates the growing trust placed in Airbus' maintenance by the hour services by airlines around the world, both for widebody and single aisle fleets.

Finnair will benefit from integrated material services including on-site-stock at their main base in Helsinki, access to Airbus' mutualised spares pools and components engineering and repair services around the world. The FHS contract covers 'nose to tail' material services including for engine components.

Airbus will guarantee spare parts availability, generating value through increased fleet availability and operating maintenance costs savings.

Juha Ojala, Vice President Technical Operations at Finnair, said: "We continuously seek to create more value in our supply chain. This collaboration ensures an enhanced and innovative service for component reliability and availability while supporting fleet flexibility. We are sincerely pleased to strengthen the relationship between Finnair and Airbus."

"We are very happy to see our Flight Hour Services recognised as an efficient means to accompany the progressive ramp-up of airlines' operations in Europe, and we thank Finnair for their trust", says Bart Reijnen, Head of Airbus Material Services. "For more than a year, we have worked hard to adapt our maintenance services and be able to provide more flexibility and reactivity to our airline customers. This service quality improvement is an additional way for Airbus to support the aviation sector's recovery".

The global Airbus fleet covered by FHS has increased by more than 25% over the past two years confirming the relevancy of flexible, power-by-hour solutions for airlines to secure efficient operations and contain costs.

Finnair is a long-standing Airbus customer. The airline is operating Airbus A320 Family aircraft on its network in Europe and Airbus A330 and A350 on long-haul flights.

Quelle:

Airbus Press Release 20 October 2021

## **Boeing Forecasts Africa's 20-year Commercial Aviation Market Opportunity Valued at Nearly \$400 Billion**

*Africa's commercial airplane fleet projected to grow to 1,560 over the next 20 years*

*80% of new deliveries are for African carrier growth as intra-continent traffic rises*

Boeing [NYSE: BA] forecasts that Africa's airlines will require 1,030 new airplanes by 2040 valued at \$160 billion and aftermarket services such as manufacturing and repair worth \$235 billion, enabling growth for air travel and economies across the continent. Boeing shared the projection as part of the 2021 Commercial Market Outlook (CMO), the company's long-term assessment of demand for commercial airplanes and services.

Africa's strong, long-term growth prospects for commercial aviation are closely tied to the continent's projected 3% annual economic growth over the next 20 years. Initiatives such as the African Continental Free Trade Area and Single African Air Transport Market are expected to stimulate trade, air travel and economic cooperation. Additionally, the region's middle class and working population is projected to double by the end of the forecast period, driving increased demand for air travel, according to Boeing.

"Africa has healthy opportunities to expand travel and tourism, coinciding with increasing urbanization and rising incomes," said Randy Heisey, Boeing managing director of Commercial Marketing for Middle East and Africa. "African carriers are well-positioned to support inter-regional traffic growth and capture market share by offering services that efficiently connect passengers and enable commerce within the continent."

The 2021 Africa CMO also includes these projections through 2040:

- Airlines in Africa will grow their fleets by 3.6% per year to accommodate passenger traffic growth of 5.4% annually, the third-highest growth rate in the world.
- Single-aisle jets are expected to account for more than 70% of commercial deliveries, with 740 new planes mainly supporting domestic and inter-regional demand. In addition, African carriers are estimated to need 250 new widebodies, including passenger and cargo models, to support long-haul routes and air freight growth.
- 80% of African jet deliveries are expected to serve fleet growth with more sustainable, fuel-efficient models such as the 737, 777X and 787 Dreamliner, with 20% of deliveries replacing older airplanes.
- Estimated demand for aviation personnel will rise to 63,000 new professionals, including 19,000 pilots, 20,000 technicians and 24,000 cabin crew members.
- Commercial services opportunities such as supply chain, manufacturing, repair and overhaul are valued at \$235 billion.

As a leading global aerospace company, Boeing develops, manufactures and services commercial airplanes, defense products and space systems for customers in more than 150 countries. The company leverages the talents of a global supplier base to advance economic opportunity, sustainability and community impact. Boeing's diverse team is committed to innovating for the future and living the company's core values of safety, quality and integrity.

Quelle:

Boeing Press Release 21 October 2021

### **Mammoth Freighters LLC beauftragt die MTU Maintenance mit der Instandhaltung von GE90-110/115B-Triebwerken**

Die MTU Maintenance, Weltmarktführer bei maßgeschneiderten Lösungen für Luftfahrtantriebe, und Mammoth Freighters LLC haben kürzlich einen Kooperations- und Supportvertrag unterzeichnet. Durch diesen wird die MTU Maintenance zum bevorzugten Partner für die Triebwerksinstandhaltung im B777P2F-Umbauprogramm von Mammoth Freighters. Die Vereinbarung umfasst die planmäßige und außerplanmäßige Wartung von GE90-110/115B-Triebwerken, On- und Offwing-Support, Triebwerksleasing, Engine Trend Monitoring sowie den Bedarf an entsprechender Bodenausrüstung.

„Triebwerksleistung und Treibstoffeffizienz unserer modernen Frachtflugzeuge der Typen Boeing 777-200LRMR- und -300ERMF sind die wichtigsten Verkaufsargumente für unser Umbauprogramm. Wir freuen uns über die Zusammenarbeit mit der MTU Maintenance zu unseren GE90-110/115B“, sagt Bill Tarpley, Co-CEO von Mammoth Freighters LLC. „Die MTU und ihr maßgeschneiderter Support erweitern unser Angebot an Umbauprogrammen erheblich. Durch diese Zusammenarbeit erhalten unsere Kunden Zugang zu erstklassigem technischen Support für GE90-110/115B-Triebwerke und kosteneffizienten Lösungen für den Umbau wie auch für die Zeit nach der Auslieferung unserer Flugzeuge.“ Mammoth Freighters ist darauf spezialisiert, Passagiermaschinen vom Typ Boeing 777-200LR und -300ER zu Frachtflugzeugen umzubauen.

Die MTU Maintenance verfügt über 40 Jahre Erfahrung bei der Instandsetzung von mehr als 30 Triebwerksmodellen, darunter das GE90-110/115B, und führt an ihren weltweiten Standorten über 1.000 Werkstattbesuche pro Jahr durch. Die GE90-Instandhaltungen erfolgen in Hannover, wo sich das MTU-Team auf flexible und passgenaue Arbeitsumfänge für diese Triebwerke konzentriert.

Quelle:

MTU Press Release 26 October 2021

### **Lockheed Martin Elects John M. Donovan to Board of Directors**

Lockheed Martin Corporation (NYSE: LMT) today announced its board of directors has elected John M. Donovan to the board, effective immediately. The board determined that Donovan is an "independent director" in accordance with the New York Stock Exchange listing standards, the rules and regulations of the Securities and Exchange Commission, and the corporation's corporate governance guidelines. Donovan will serve on the corporation's Classified Business and Security Committee.

Previously Donovan served as CEO of AT&T Communications, LLC, a wholly owned subsidiary of AT&T Inc., from August 2017 until his retirement in October 2019. He was chief strategy officer and group president of AT&T Technology and Operations from January 2012 through August 2017, and chief technology officer of AT&T Inc. from April 2008 through January 2012. Prior to AT&T, Donovan was executive vice president of product, sales, marketing and operations at VeriSign Inc., an internet infrastructure company. He also was chairman and CEO of inCode Telecom Group Inc., where he helped shape strategy for

wireless carriers worldwide, and was a partner with Deloitte Consulting, where he was the Americas telecom practice director.

Donovan is chair of the President's National Security Telecommunications Advisory Committee; a board member of Palo Alto Networks, a global cybersecurity company; and the author of multiple books on organizational leadership and advanced networking.

Quelle:

Lockheed Martin Press Release 21 October 2021

## **OHB baut Satellitenkonstellation für Hochgeschwindigkeits-Datenautobahn**

### ***US-Unternehmen SpaceLink setzt auf technologische Kompetenz und Erfahrung aus Bremen***

Die OHB System AG, ein Tochterunternehmen des europäischen Raumfahrtkonzerns OHB SE, wird für das US-Unternehmen SpaceLink Corporation voraussichtlich eine Konstellation von vier Relaisatelliten entwickeln und bauen, die Teil einer Hochleistungskommunikationsautobahn im Weltraum sein werden. Eine entsprechende „Authorization to Proceed“ haben beide Parteien in der vergangenen Woche unterzeichnet. Das zukünftige Auftragsvolumen liegt bei über 300 Millionen US-Dollar. SpaceLink ist eine Tochtergesellschaft des australischen Technologiekonzerns Electro Optic Systems Holdings Limited ("EOS").

Das Konzept von OHB basiert auf der erfolgreichen SmartMEO-Plattform. Die Kombination aus einem bewährten Produkt und der jahrelangen Erfahrung mit der Serienproduktion von Satelliten hat den Ausschlag gegeben. OHB hat 2019 zudem ein erfolgreiches Projekt eines geostationären Relaisatelliten für Laserkommunikation umgesetzt, das eine wichtige Grundlage für die führende Rolle bei optischen Kommunikationssatelliten darstellt. Nach einem wettbewerbsorientierten Ausschreibungsverfahren hat OHB aufgrund dieses Gesamtpakets aus Expertise und Erfahrung sowie seiner Zuverlässigkeit bei der Lieferung den Zuschlag erhalten.

### ***Echtzeit-Konnektivität im Weltraum***

OHB wird außerdem 25 Millionen US-Dollar in SpaceLink investieren. Das Unternehmen unterstreicht damit seine Überzeugung, dass in diesem Markt zuverlässiger Datenverbindungen über eine Konstellation von Satelliten enormes Potenzial besteht. „OHB glaubt fest daran, dass den Diensten über eine solche Datenautobahn aus dem All die Zukunft gehören wird“, sagt Marco Fuchs, Vorstandsvorsitzender von OHB SE. "Wir können SpaceLink dafür eine äußerst zuverlässige und kosteneffiziente Lösung auf Basis unserer modularen Satellitenplattform anbieten, die sich bereits in zahlreichen kritischen Missionen bewährt hat. Wir freuen uns auf die Zusammenarbeit mit dem SpaceLink-Team, um diese wichtige Ressource für Echtzeit-Konnektivität im Weltraum in Betrieb zu nehmen."

### **Vernetzung der Welt**

"Dass wir unsere Beziehung zu OHB durch diesen Vertrag und das Investment in SpaceLink durch OHB stärken können, freut uns sehr“, sagt Dr. Ben Greene, CEO der EOS Gruppe. „Wir glauben, dass diese Partnerschaft zwischen unseren beiden Unternehmen sowohl für

OHB als auch für EOS von großem Nutzen sein wird und einen wichtigen Meilenstein in der Fähigkeit Australiens darstellt, zur Zukunft der Weltraumwirtschaft weltweit beizutragen.“ „Mein Team und ich freuen uns sehr auf diese spannende und zugleich herausfordernde Aufgabe“, sagt Guy Perez, CTO der OHB System AG, der die Aquisition des SpaceLink-Programms geleitet hat. „Als Ingenieur freue mich sehr auf die Möglichkeit, an einem System zu arbeiten, das die Welt auf eine völlig neue Weise vernetzen wird.“ Das SpaceLink-Relais-System wurde entwickelt, um kommerziellen und staatlichen Raumfahrtmissionen eine permanente Konnektivität mit hoher Bandbreite zu bieten. Das System ist darauf ausgelegt, den wachsenden Bandbreitenbedarf und die Sicherheitsanforderungen kommerzieller, ziviler und nationaler Sicherheitsmissionen zu erfüllen.

Quelle:

OHB Press Release 25 October 2021

### **Diehl Metering tritt offiziell dem Global Compact der Vereinten Nationen bei**

***Die Vereinten Nationen haben Diehl Metering als Unterzeichner des Global Compact bestätigt, der freiwilligen Initiative für Unternehmen, einen Beitrag zu einer nachhaltigen Welt zu leisten. Auf der Website des Global Compact sind wir nun als eines von mehr als 13.000 Unternehmen gelistet, die sich dem Abkommen angeschlossen haben.***

Nach unserer Verpflichtungserklärung, die unser Vorstandsvorsitzender Dr. Christof Bosbach im Juni unterzeichnet hat, ist unsere Teilnahme am Global Compact offiziell bestätigt worden. Wie alle Mitglieder werden wir uns an die 10 Prinzipien der Initiative halten, die die Bereiche Menschenrechte, Arbeit, Umwelt und Korruptionsbekämpfung abdecken, während wir gleichzeitig die 17 Ziele für nachhaltige Entwicklung aktiv unterstützen werden.

Im Rahmen unseres Engagements für den Global Compact werden wir einen jährlichen Fortschrittsbericht (Communication on Progress - COP) veröffentlichen, in dem wir unsere Maßnahmen erläutern und Leistungsindikatoren zur Messung unserer Fortschritte mitteilen. Unser erster COP soll im August 2022 veröffentlicht werden.

Mit der Teilnahme am Global Compact möchte Diehl Metering allen Interessengruppen mehr Transparenz bieten. Die Initiative passt zudem perfekt zu unserem übergreifenden Fokus auf Nachhaltigkeit. Gemeinsam arbeiten wir daran, unsere Kunden, Lieferanten, Mitarbeiter und Menschen überall auf der Welt zu unterstützen, eine nachhaltigere Welt zu gestalten.

Quelle:

Diehl Press Release 21 October 2021

## **Rheinmetall to build and export Lynx Infantry Fighting Vehicle Test Chassis to United States**

Rheinmetall, the largest supplier of military vehicles to the Australian Defence Force has today announced the build and export contract of a Lynx Infantry Fighting Vehicle (IFV) Test Chassis to the United States of America from its factory in Redbank Queensland.

Rheinmetall Defence Australia Managing Director Gary Stewart said the contract was the first of its kind and provided design and manufacturing export work both for the Rheinmetall team and its growing Australian Industry network.

“This is a landmark for Rheinmetall and Australia with the Lynx Infantry Fighting Vehicle test chassis to be manufactured at the state-of-the-art Military Vehicle Centre of Excellence (MILVEHCOE) at Redbank, Queensland and importantly, contributes to the Federal Government’s objectives as set out in the Australian Defence Export Strategy.”

“The Australian manufactured Lynx Infantry Fighting Vehicle Chassis is a test rig destined for Rheinmetall’s Optionally Manned Fighting Vehicle (OMFV) campaign to showcase advanced automotive capabilities in the Lynx platform,” he said.

Mr. Stewart said the Lynx vehicle export order will be delivered to Rheinmetall in the United States supporting the business’s worldwide activities currently underway in the OMFV competition and the US Department of Defense’s Bradley fighting vehicle replacement program.

“Lynx is a next generation fighting vehicle with unmatched protection and lethality. Rheinmetall has developed a next generation electronic architecture to ensure onboard sensors, systems and effectors are able to be networked into Defence’s broader network architecture.”

“The new test vehicle will demonstrate advanced features of mobility,” Mr. Stewart said.

Mr. Stewart said that the Australian export opportunities for Rheinmetall increased with this contract and provided flow on for Australian Industry Capability (AIC) partners that contribute to the Lynx IFV.

“The AIC partners are the backbone of our Lynx manufacturing in Australia. We are proud to partner with organisations including:

- Marand Roof module,
- Supashock Running gear,
- MILSPEC Alternator, and  
Bisalloy Steel and various mechanical and electrical fabrication partner content.”

Mr. Stewart said that while Rheinmetall has announced export of the Lance Turret to Hungary, this would be our first vehicle export from Australia.

The Lynx is a next generation infantry fighting vehicle designed to confront the challenges of future battlefields. The Lynx provides adaptability; survivability and capacity not seen before in a vehicle of this type and is a highly protected IFV built to meet stringent military requirements.

Quelle:

Rheinmetall Press Release 25 October 2021

## **Ferienstart in Bayern und neue Ziele im Winter**

- ***Große Reisewelle mit 86.000 Passagieren am ersten Ferienwochenende***
- ***Winterflugplan mit attraktiven Zielen nach Mexiko, Montreal und Kapstadt***

In Bayern beginnen bald die Herbstferien und viele möchten mit dem Flugzeug in den Urlaub starten. Lufthansa erwartet im Terminal 2 rund 86.000 Passagiere, allein am ersten Wochenende. 140 Destinationen stehen in der Ferienwoche wieder auf dem Münchner Flugplan.

Die Airline empfiehlt allen Reisenden, bereits rechtzeitig vor Reiseantritt zu prüfen, ob alle notwendigen Einreisedokumente vorhanden sind. Da diese nochmals an den Check-in Schaltern im Terminal 2 vorgelegt werden müssen, sollten Fluggäste sehr frühzeitig am Flughafen erscheinen. Ist eine Reise innerhalb Deutschlands geplant, kann die Bordkarte schnell über die Lufthansa App oder an den Automaten im Terminal 2 erstellt und der Koffer abgegeben werden. Eine Dokumentenkontrolle ist bei innerdeutschen Flügen nicht erforderlich.

### **Neues vom Winterflugplan ab München**

Zeitgleich zum Ferienbeginn am 31. Oktober startet auch der Winterflugplan. Ab Sonntag fliegt Lufthansa ab München wieder nach Mexiko und Montreal (jeweils dreimal wöchentlich) sowie nach Kapstadt (bis zu fünfmal wöchentlich). Ab dem 8. November wird Miami bis zu sieben Mal in der Woche angefliegen. Das einstige „Nur-Sommerziel“ Vancouver wird jetzt auch im Winter angeboten. Dubai steht bereits seit Anfang Oktober ab München wieder auf dem Flugplan.

Alle Langstreckenziele werden mit dem Airbus A350 angefliegen. Das modernste und nachhaltigste Passagierflugzeug der Lufthansa Flotte verbraucht 25 Prozent weniger Co2 als seine Vorgängermodelle.

Neben den bekannten Zielen in Griechenland, Spanien und Portugal fliegt Lufthansa ab dem 31. Oktober ab München auch nach Marsa Alam, neben Hurghada das zweite Ferienziel in Ägypten. Wer lieber den Winter sucht, der kann ab dem 18. Dezember von München aus an jedem Samstag nach Tromsø/Norwegen oder Kittilä/Finnland fliegen - Schnee und Polarlichter inklusive.

Für flexible Buchungsbedingungen ist weiterhin gesorgt: So sind sämtliche Tarife von Lufthansa, SWISS, Austrian Airlines und Brussels Airlines umbuchbar. Hinweise zu den erforderlichen Einreisedokumente der einzelnen Länder gibt das Auswärtige Amt unter [www.auswaertiges-amt.de](http://www.auswaertiges-amt.de)

Quelle:

Lufthansa Press Release 25 October 2021

## **Rolls-Royce keen to partner the Indian Navy's electrification journey for its 'Fleet of the Future'**

*~ Will showcase capabilities for providing Naval propulsion solutions aboard the mighty HMS Queen Elizabeth warship during the UK's upcoming Carrier Strike Group Tour ~*

*~ Rolls-Royce only provider of marine gas turbines into integrated full-electric propulsion (IFEP) powered destroyers and aircraft carriers ~*

As part of the UK's upcoming Carrier Strike Group tour, Rolls-Royce is all set to showcase to Indian Navy customers its capabilities to design, build and deliver customised power and propulsion solutions for India's naval modernisation requirements. The company also expressed its keenness to explore opportunities for partnering the Navy with end-to-end solutions for electrification of India's future warships.

Speaking about the upcoming tour, **Kishore Jayaraman, President – India and South Asia, Rolls-Royce** said, *"As India envisions the fleet of the future, our commitment to support the country's defence modernisation and self-reliance goals remains as strong as ever. The Carrier Strike Group tour is a significant opportunity for Rolls-Royce to showcase the results of decades of innovation in naval power and propulsion. Our experience of supporting the electrification of the Royal Navy's warships over many years is of particular significance, including the design and deployment of the world's first hybrid-electric naval system. We believe that we can bring great learnings and value to any future programme envisioned by the Indian Navy for developing electric warships."*

Rolls-Royce is the only manufacturer in the world that has provided navalised marine gas turbine generators into front-line integrated full electric propulsion (IFEP) powered destroyers and aircraft carriers. Being a key member of the Power and Propulsion Sub-Alliance, Rolls-Royce was responsible for the design, procurement, manufacture, integration, test and delivery of the Queen Elizabeth Carrier ships' power and propulsion system, which includes the mighty MT30 marine gas turbine and a low voltage electrical distribution system.

**Abhishek Singh, Senior Vice President – Defence, India and South East Asia, Rolls-Royce** said, *"The HMS Queen Elizabeth visiting India is one of the finest examples of technological excellence in naval warfare. We are looking forward to familiarising our Indian customers with Rolls-Royce's capabilities aboard this majestic warship and to explore areas for collaboration to further strengthen the might and range of the Indian Navy."*

**Richard Partridge, Chief of Naval Systems, Rolls-Royce** added, *"Rolls-Royce is well-positioned to partner India for the modernisation of its naval fleet with the right mix of products, experience and capabilities to design, build, deliver and support customised naval systems and solutions. Our technologically superior offerings and expertise provide the ideal solutions for developing integrated hybrid-electric and full-electric propulsion for naval vessels, including the integration of the MT30 that brings the most power dense gas turbine to these next generation warships."*

### **What's on-board the mighty Queen Elizabeth Class carriers**

The Royal Navy's new Queen Elizabeth Class (QEC) aircraft carriers operate an IFEP system that is one of the most advanced propulsion systems offering increased power, flexibility and reliability – best suited for large warships. It provides two MT30 marine gas turbine alternators per ship, rated at 36MW, with the power to propel these vessels beyond 25knots.



The MT30 alone delivers huge design benefits through its power density, significantly reducing the number of gas turbines required to power advanced naval platforms. The MT30 also guarantees its power throughout the 50-year service life expectancy of the ship. The QEC also feature a complete Rolls-Royce low voltage (LV) electrical distribution system that distributes enough electricity to power the equivalent of 5,000 family homes.

As electrical power system integrators, Rolls-Royce provides solutions for both hybrid and all-electric naval vessels, optimising performance to satisfy electrical load demands of the future such as advanced sensor, propulsion and combat systems. It is also an experienced provider of low voltage (LV) electrical power distribution systems for a range of warship and submarine applications.

With over 80 years of naval propulsion experience, Rolls-Royce has pioneered some of the most important technical advances in marine propulsion including the use of aero gas turbines for surface ship propulsion. The company offers a world-leading portfolio of marine products and systems ranging from gas turbines and diesel engines, propulsion, electrical & automation systems, deck handling and innovative unmanned technologies as well as comprehensive customer support for present and future fleets.

Quelle:

Rolls-Royce Press Release 20 October 2021

### **New UAS and Tech Will Dominate a New Era in Air Warfare**

After rewriting the rules of war on the ground, unmanned aircraft systems are raising their sights.

General Atomics Aeronautical Systems' earlier aircraft such as the MQ-1 Predator made their mark by constantly looking down. They changed the nature of combat because they could stay aloft indefinitely, when working in teams, and provide not only invaluable intelligence to ground forces but precise, lethal support when needed.

The nature of warfare itself, however, is changing, which means that unmanned aerial systems must evolve to keep up. In the case of GA-ASI, new UAS are setting the pace.

A wave of new aircraft, systems and capabilities mean the coming chapter of aviation will be as much about assigning counter-air roles to the successors of the Predator as sustaining their proven record in supporting ground troops and other current missions.

The MQ-9 Reaper, MQ-9B SkyGuardian and other new aircraft and systems give both ground and air commanders myriad new tools and options to provide intelligence, surveillance and reconnaissance; defend U.S. or allied forces; or, when needed, go on offense against threats in the air.

The same qualities that make remotely piloted aircraft invaluable supporting ground operations translate to certain counter-air roles: Their ability to remain on station for long periods of time, obtain and maintain battlespace awareness, and afford commanders options to employ precise lethal effects in conditions of higher risk.

## **Counter-unmanned**

One threat against which a UAS is ideal is another UAS. A flight of networked unmanned aircraft— with their advanced sensors, air search radars and air-to-air weapons or advanced electronic warfare payloads — could keep constant watch for incursions by unmanned aerial systems either sent to spy on friendly forces or try to attack them outright.

A UAS like the Reaper is ideally suited to help safeguard against cruise missiles – another serious threat to friendly forces – or smaller, quadcopter-style UAS trying to snoop on allied positions. When equipped with available podded systems, the MQ-9 is able to provide early warning of inbound threats as well as employ electronic warfare or other systems that could zap the small ingressors.

These aircraft also could go big. In fact, the ability of aircraft such as the Reaper or SkyGuardian to stay on station for periods of time not available to manned aircraft and operate together as part of a network gives commanders the ability to leverage their advanced sensors for enhanced situational awareness over large areas.

Air component commanders could screen a huge front of territory on the flank of a big ground operation, freeing other aircraft for direct support missions. Or they could orbit over an entire national border, or along miles of coastline, to watch for approaching aircraft. As the U.S. Air Force’s most cost-effective aircraft, already in service in large numbers, the MQ-9 is ideally suited to support such missions.

## **Aerial defense**

UAS in defensive roles could also prove decisive in the defense of high value airborne assets. The U.S. Air Force and its allies rely on air-to-air refueling to extend the ranges of their fleets and give them the endurance to remain available for tasking – especially in an area such as the Western Pacific, which require covering long distances over the ocean.

Advanced air forces also integrate other highly sophisticated, highly valuable manned airborne systems: the E-3 Sentry airborne early warning aircraft; the RC-135 Rivet Joint, conducting surveillance and electronic collection; the P-8 Poseidon maritime patrol and anti-submarine aircraft, and more.

These units give the U.S. Air Force, Navy and their allies peerless situational awareness and combat power – but they’re also some of the highest-priority potential targets for an adversary. They must stay forward and in the fight, but they also need protection. Devoting human-piloted fighters such as the Air Force’s F-22 or F-35 to safeguard high-value aerial assets means those fighters aren’t available for some other frontline tasking.

Enter the Defender, a new unmanned escort built by GA-ASI. These jet-powered UAS can be equipped with air-to-air weapons to be ready to defend high-value aircraft and can stay ready to do so for days at a time, relieving the burden of manned fighter squadrons. Even though it has no one onboard, Defender pairs seamlessly with human-crewed aircraft or other units because GA-ASI is a leader in manned-unmanned teaming.

Air component commanders could designate a box of airspace for the Defender to safeguard, and enable tankers to support offensive aircraft fighting their way into and out of contested battlespace as well as the other manned command and control and ISR aircraft supporting them.

Other new sensors and weapons will only improve the precision, range and lethality of unmanned systems in these roles. GA-ASI has already demonstrated capabilities that permit communications between 5th generation aircraft, seeing further, discriminating air targets and acting with significant degrees of autonomy. None of that is conceptual – it's all flying today, including on ASI's highly adaptable Avenger aircraft. The company will continue driving and accelerating what's possible with automation, manned-unmanned teaming and beyond.

### **Small UAS**

A new generation of small unmanned aerial systems also will give air component commanders more cards to play.

Some of them, such as the GA-ASI Sparrowhawk, could support friendly air operations by helping to suppress hostile anti-air systems, or provide enhanced battle space awareness or EW effects. These small aircraft, carried under the wings of a larger patrol aircraft such as SkyGuardian would help detect the locations and details about air defense sensors and even could draw the fire of surface-to-air weapons – permitting other aircraft to neutralize them and clear the way for an allied strike package.

The Sparrowhawk's most significant attribute is that it is both air launched and air recovered on the MQ-9, providing reusable force augmentation for stand-in effects from standoff distances. A mothership MQ-9 can reel out a recovery line that the Sparrowhawk captures as it trails beneath, permitting the larger UAS to grab the smaller one safely and bring it back to refuel and prepare for another mission on another sortie.

The Army's MQ-1C Gray Eagle can also carry new air-launched effects developed by GA-ASI, ones that help identify and suppress anti-air systems to help make conditions safer for manned rotary wing aircraft with their own assault, transport or other missions on the battlefield.

Unmanned aircraft have changed warfare, security operations and much more in their first decades of widespread use. As the nature of war evolves, including via the proliferation of more hostile unmanned systems, GA-ASI's aircraft and systems will be ready to evolve too and lead the way into new counter-air roles– and beyond.

Quelle:

General Atomics Aeronautical Systems