Helicopter
INTERNATIONAL
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Hill Helicopters unveiled two full-size detailed **mock-ups** of its **HX50** single engined helicopter at a launch event, held at the Imperial War Museum in Duxford on 6 December. Open to potential buyers, customers and the media, the event attracted a large audience who were able to question the company founder and chief engineer, Jason Hill, following a detailed presentation.

One of the helicopters on show featured a wheeled undercarriage and the second was mounted on skids. Visitors also had the opportunity to sit in the HX50 cabin and experience a fully functioning digital cockpit, featuring two 40cm (15.6inch) screens and an iPad docking mount among the other features. The company said it had sold 789 HX50s and 186 HC50s at the time of the event, the latter to be certificated for commercial operations with a traditional type certificate.

The HX50 however will be marketed as a kit-build product requiring owner participation supervised by the company. This is expected to reduce the base price to £595,000, compared to £725,000, for the HC50 commercial model. Both versions will seat up to five occupants and are powered by the in-house designed GT50 turboshaft engine, offering 500shp and a 257km/h (160mph) cruise speed. Maximum range, using sustainable aviation fuel, is estimated at 1,296km (805miles).

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and
MILITARY HELICOPTER NEWS

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CHC Scotia staff in the UK began a threatened rolling **strike** on 22 November, organised by the Unite union as part of an escalating pay dispute. Unite members across three CHC bases in the UK previously voted in favour of industrial action by 80.4 percent on a 95 percent turnout. The union represents over 60 employees and the strike action began at Aberdeen on 22 November, joined by workers at Humberside and Norwich airports the following day in a rolling programme, ending on 17 December. The union has also implemented a continuous overtime ban as of 29 November.

CHC Scotia had offered a staggered pay offer of 2.5 percent backdated to April 2023, followed by five percent backdated to 1 November and thereafter a 3.5 percent increase in 2024. This offer was rejected by 79 percent of the members, with Unite calling for an increase more in keeping with the broader 11.4 inflation figure recorded in April.

CHC Scotia primarily provides helicopter support to the offshore energy market and search and rescue for major operators including Shell and Petrofac, and Unite represents workers including aircraft engineers, aircraft mechanics, aeronautical engineers and other skilled trades in helicopter maintenance.

The Mexican state of **Nuevo León took** delivery of a **Sikorsky UH-60A+** Black Hawk helicopter on **25 October** for security missions. The aircraft had been auctioned as surplus by the US Army and acquired through a broker, who had temporarily registered it on the US register as N1475X (cons. no. 70534). Previously it was serialled 82-23711 with the Army but is now flying with Fuerza Civil titles and a white code, VCA-10, with no apparent Mexican registration.

The helicopter has been acquired to boost the battle against high impact crime in the northern Mexican state, whose current fleet relies on relatively light weight Bell 206L, Bell 212, Bell 412 and Airbus EC145 helicopters. However Black Hawks are in widespread service with the Mexican military, including six UH-60L and 17 UH-60M with the Air Force, nine UH-60M with the Navy, and six S-70A and six UH-60M with the National Guard.

Industry sources suggest the UK Ministry of Defence (MoD) is about to announce the **acquisition of** six Airbus **H145** helicopters in a search and rescue configuration **to replace** the Aerospatiale **Puma HC.2s** in service in Cyprus and Brunei. Previously the MoD had announced the Pumas would be replaced under the New Medium Helicopter (NMH) programme, being competed by Airbus, Leonardo, Boeing and Lockheed Martin, but the original aim to order 44 NMH reduced to 35 aircraft last year and earlier this year appears to have further reduced to just 25.

The Pumas had been deployed to replace older Bell 212 and Griffon helicopters, retired as part of a cost cutting measure, but now it appears that further MoD budget cuts have forced a further change to government priorities.

Bell Helicopter Textron has delivered a **third Bell 429** registered HB-XDA (cons. number 57472) **to** Swiss-based **helicopter rescue company Air Zermatt**, allowing the operator to expand its reach to the Swiss Valais community. With its 75 strong medical personnel and flight crews, the company provides transport, tourist flights and rescue operations in the Swiss Alps and surrounding regions, carrying out each year some 2,000 rescue missions, the majority using the Model 429.

In addition to the delivery of the latest aircraft, Air Zermatt has also now opted to add their Bell 429 fleet to the Bell Customer Advantage Plan (CAP). This protects direct maintenance costs and aircraft value over time, keeping helicopters in service longer and providing one-on-one technical support at a moments notice, a vital tool in the challenging environment that Air Zermatt operates in.

UK Flight Pooling company, **Get Heli** has **partnered with Alpes Hélicoptérs** in France to give customers a new helicopter service to Courcheval during this year's ski season. The agreement allows passengers to book individual seats on helicopters, merging multiple travel requests and thus challenging the traditional charter model and making luxury travel more affordable.

Get Heli has granted Alpes Hélicoptérs (part of the Léman Aviation company based in Monaco on the French Riviera and Switzerland) exclusive rights to use its heli-pooling technology in the French and Swiss regions. In return Alpes Hélicoptéres has committed to channel all its flight pooling bookings through the Get Heli platform. If the system successfully works on the initial Courcheval route, then the partners will look at other routes for the heli-pooling technology.

Schweizer RSG, which manufactures the revived S300, S300CBi and S333 helicopters in Fort Worth, Texas has **earned** a **Federal Aviation Administration Pt.145 Repair Station certification**, enabling the company to repair and overhaul its helicopters and components at the factory under an FAA approved quality system.

The new repair station certificate allows Schweizer to increase its services to include overhauling transmissions and other labour intensive components in house. This reduces the overhead and delays that can occur when relying on third parties to do the work, enabling the company to provide these services faster and at a lower cost. Schweizer is now in the process of seeking similar European Aviation Safety Agency (EASA) approval to further expand its support for Schweizer operators and owners.

Commercial - INTERNATIONAL

US company **Rotor Technologies** in Nashua, New Hampshire, has **unveiled** an **uncrewed** conversion of the Robinson **R44 Raven II** helicopter, designated **the R550X**. Designed to lift loads up to 550kg (1,200lb) and with an endurance of over three hours and a top speed of more than 241km/h (150mph) the helicopter is claimed to offer long range VTOL capabilities beyond the range of drones and eVTOL aircraft.

Lidar Sensors above and below the cabin and digital flight controls are said to enable the R550X to operate safely with the software eliminating common causes of accidents, including mast bumping, inadvertent entry into IMC, vortex ring state and controlled flight into terrain. Because its not designed to carry people the company says operators can leverage FAA roles to fly the R550X in agricultural, fire fighting inspection and maritime operations, and is already producing two aircraft against letters of intent from two agricultural customers. The first commercial operations are expected to begin in 2024.

Commercial - INTERNATIONAL

Aviation analysts with Brookfield Aviation Services have **estimate**d that the increase in the use of helicopters in recent years for commercial operations, coupled with increases in defence budgets is demonstrating a **need for** a significant **renewal of helicopter fleets** worldwide over the next several years. The current global market, valued at around $31,900, is expected to grow to $41,200 by 2027 at a Compound Annual Growth Rate of 6.1 percent, 4.1 percent in North America.

To help meet the demand, manufacturers are investing more in innovation, with advanced technologies in airframe and propulsion systems, including hybrid electrical models that could reduce fuel consumption by 40 percent and enter service within the next six-seven years. The introduction of lithium-ion batteries to replace standard batteries, producing a weight saving of up to 46 percent coupled with improved starting performance and a longer life, is seen as another technological advance.

Such innovation is especially relevant in North America, where the market is dominated by the few big manufacturers who have taken 64 percent of the regional market, including 454 helicopters delivered to the US military. Most of the sales are replacing older types under new fleet acquisition plans, a trend repeated among the major commercial operators competing for new contracts in the offshore and onshore fields.

Urban Air Mobility (**UAM**) pioneer Volocopter has carried out a **flight test campaign with** a crewed eVTOL **Volocopter 2X at Tampa** International Airport in Florida, the first eVTOL test in the State and the first such trial at an operational and large international airport in the United States. The tests included downwash and outwash testing with the Federal Aviation Authority (FAA) and performance testing in local environment conditions.

Volocopter expects to secure final certification of its commercial Volocity eVTOL from the European Aviation Safety Agency in 2024 and is concurrently working on a validation process with the FAA, originally submitted in 2020.

A Canadair **CL-215** amphibious **fire fighting aircraft** that had been stranded on a small island on Mitchell Lake in Canada's North West Territories following a hull puncture whilst scooping water was **airlifted** to safety **by** a Boeing CH-47 **Chinook of Billings Air Service** on 30 October, following major efforts by a ground crew from Buffalo Airways in Yellowknife to reduce the weight of the CL215 and drain water from the keel.

In the event they removed the engines, propellers, radios and other items to get the weight below 8,391kg (18,500lb) before the Chinook lifted the lightened helicopter and carried it for 45 minutes to Yellowknife, where it will be rebuilt in time for the 2024 fire fighting season.

Yellowhead Helicopters, based in British Columbia and Alberta in Western Canada has become the **launch customer for** a **new Forest Service radio system**, developed by Anodyne Electronics Manufacturing (AEM). The helicopter operator, which has a large and diverse fleet of aircraft for speciality missions, has previously been involved in the development and testing of the new radio, designated the MTP136D by AEM.

The new radio is a panel-mounted system for special role and multi-mission platforms, and is expected to prove an important step for AEM in helping to provide aerial fire fighters and other specialist operators with best-in-class communication solutions. The MTP136D is a Project 25 Phase 1 compliant VHF/FM solution for digital and analogue communication on all channels across the 136MHz to 174MHz frequency band and is a plug-and-play replacement for existing legacy radios Easily integrated for tactical systems and platform upgrades, it is described by AEM as a robust design to ensure the highest performance in lengthy and demanding fire fighting environments and is now available for pre-order with a fully refundable deposit from AEM via the company's sales department.

Schweizer RSG has **completed** the **first refurbished S300CBi** helicopter under its new OEM Certified Helicopters Programme, which includes a new engine, blades, interior, paint and low time components to provide potential customers with a more affordable introduction into helicopter ownership. The source for the refurbished helicopters includes partially cannibalised aircraft after the previous owner of the brand (Sikorsky) did not maintain part availability and also trade-ins of older aircraft. The "new" aircraft will undergo full 400hr, 800hr, annual and 24 month inspections and a one year/1,000hr warranty on parts replaced or repaired by Schweizer.

The first S300CBi to go through the OEM Certified Helicopters Programme was N1893A, (cons. number 0232), with a certificate issued on 2 October.

Eve Air Mobility, the eVTOL subsidiary of Embraer has signed agreements with **three new subcontractors** as it progresses with development of its five seat eVTOL aircraft. The company claims to have over 2,500 advance orders for the vehicle and signed up its first three suppliers in June last year, including DUC Hélice Propellor, providing the propellers and rotors, BAE Systems who are providing the advanced energy storage system, and Nidec Aerospace, responsible for the electric propulsion system.

The three new suppliers include Garmin, who will provide its G3000 Integrated Flight Deck for the aircraft, featuring large format and high resolution glass displays integrated with Eve's vehicle management and flight control systems. Tailored to fit the needs of the eVTOL, the flight deck's intuitive touchscreen interface will reduce pilot workload by providing direct access to a range of avionics and applications. These include access to Nav/Comm radios, transponder, audio management, check lists, charts and synoptics.

Meanwhile Liebherr will develop electromechanical actuators for the aircraft's fly-by-wire controls, using its experience in manufacturing precision gears and dependable actuation. Powered by the onboard electrical system, the technology should guarantee high performance, easier maintenance and configurability. Maintaining an optimal temperature range for equipment, especially the batteries and important electrical components, will be achieved through a thermal management system being developed by the third new supplier, Intergalactic, with the system also ensuring that the cabin of the aircraft remains at a comfortable temperature for the passengers.

Eve's aircraft uses a lift + cruise configuration with eight dedicated propellers for vertical lift and fixed wings for cruise flights, with an electric pusher airscrew to provide high performance and safety. The company has already begun assembling its first full-scale eVTOL prototype, which should enter a test campaign in 2024. First deliveries are anticipated in 2026 from the company's first production facility in Taubaté, São Paulo state, Brazil.

Commercial - INTERNATIONAL

The Helicopter Company (**THC**) in Saudi Arabia has **purchased** an **11th Airbus H125** helicopter through its subsidiary firm, Rotortrade which it acquired earlier this year in June 2023. The aircraft has been specifically equipped for aerial work and was delivered earlier this month (November). The purchase and delivery was officially announced at the recent Dubai Air Show, where it was also revealed that the helicopter would be the first H125 to appear in THC's own livery colours.

Originally the company had intended to order a new H125 from Airbus Helicopters but faced a 12 month waiting period before one could be delivered, so Rotortrade sourced a pre-owned example instead. It was then fitted out to THC's exact requirements, using Rotortrade's own engineering and modification capabilities in France.

THC'c overall fleet will stand at 47 aircraft by the end of 2023 and with further deliveries planned for next year will increase to 65 by the end of 2024, with plans to manage a fleet of at least 100 by 2026.

Bell Textron announced on 21 November the **delivery of the 505th Model 505** helicopter to a customer, North American based operator Austin Claborn. The aircraft will be configured for corporate transportation and replaces an older Bell 505 which has been in service since 2021.

With the upgrade to the latest platform variant, Claborn says the cockpit technology reinforces the reliability and easy flying that has made the Model 505 his favoured choice. The delivery ceremony took place at the Bell Textron facility in Mirabel, Quebec where, alongside the Model 505 production line, the company also builds the Model 407GXi, Model 429 and Model 412EPX. At mid-November this represented the manufacture and delivery of more than 5,800 commercial helicopter by the Mirabel facility.

Commercial - INTERNATIONAL

Standard Aero and Thales Flight Avionics have jointly released a new **4-Axis** compact and **lightweight autopilot** system for light rotorcraft. The system, **StableLight,** is derived from the previously certified Thales transport category autopilot and is claimed to provide transparent stability augmentation that works precisely and without feedback to the control sticks. The addition of the stabilised climb flight attitude recovery, auto hover and a range of other sophisticated features is said to result in a system that drastically reduces pilot workload, enhances mission capability and can help to minimise risks in critical flight phases and adverse conditions, such as inadvertent entry into IMC.

Following pre-certified test flights by pilots representing numerous operators and industry experts over the last year, StableLight has now been certified by the Federal Aviation Administration (FAA) and similar certification has been applied for with Transport Canada and the European Union Aviation Safety Authority. Meanwhile Thales and Standard Aero are spooling up to meet the demand for kit deliveries, with the first reserved for VIP launch customer, MacNeil Aviation LLC which plans to install the kit on their two Airbus AS350B3 helicopters, N1WT (cons. number 8594) and N1V (cons. number 8528).

Plans for an **Abu Dhabi investment** company to partner with Russian Helicopters **to develop** the **VRT500** coaxial helicopter and the VRT300 coaxial drone have been **abandoned** following the international sanctions placed on the Russian company as a result of the invasion of Ukraine. The investment company, Strategic Development Fund (SDF), paused its investment in early 2022 but continued discussions with Russian Helicopters in order to end the partnership in favour of continuing the development programmes independently in the United Arab Emirates.

This proposal was finally agreed on 14 November 2023 during a meeting between the two parties and SDF will now be able to move forward to develop the programme in compliance with the international sanctions

Book Corner

RAF in Camera 100 Years on Display by Keith Wilson. Published by Pen & Sword. Price: £50.00 (UK), $100.00 (USA). A hardback book of some 750 pages in an A4 format, this is a largely pictorial study of the Royal Air Force aircraft in active and static display, selected from a variety of sources and covering pageants and parades, formations and flypasts, anniversary events and a range of other activities carried out worldwide by the RAF over the past 100 years. One of those books that the dedicated reader will browse through time and time again.

Air Forces of Latin America-Argentina by Santiago Rivas. Published by Key Books. Price: £15.99 (UK). One in a series of paperbacks covering the world's air forces, this 96 page volume details in text and photographs not just the Argentine Air Force but also the Navy, Army, Coast Guard, Gendarmerie and Presidential Air Arms. An ideal reference for not just the aircraft but also the bases, orders of battle and other useful pocket-sized details.

AMARG - America's Strategic Military Aircraft Reserve by Jim Dunn and Nicholas Veronico. Published by Key Publishing. Price: £15.99 (UK), $24.95 (USA). Better known as the Boneyard AMARC covers a vast area in the Arizona desert where more than 3,000 aircraft are kept in short term or long term storage awaiting a call back to duty or scrapping for spares recovery. The many photographs in this softback publication cover rows of complete aircraft, historic aircraft and partially scrapped examples, with helicopters such as the Bell AH-1 series, Boeing CH-46E and Sikorsky CH-53 and HH-60 among those sharing the dry, desert climate. An interesting snapshot in time and well worth a visit to tour the aircraft line ups. Look out for the ex-British Harriers, sold to the USA to provide spares for the US Marine Corps Harrier fleet in 2012.

Boeing 707 by Ron Max. Published by Key Publishing. Price: £15.99 (UK), $24.95 (USA). This is a slimline softback, just 96 pages but provides a fascinating photographic portfolio of the first widely used American jet transport, which first flew in 1957 and continued in production until late 1978. By that time just over 1,000 had been built for civil use, whilst the military variant continued in production until 1991.

Leonardo and Pratt & Whitney Canada have carried out the **first flight of** an **AW139** helicopter, powered by the PT6C-67C turboshaft engines **using 100 percent** Sustainable Aviation Fuel (**SAF**).

Accomplished on 21 November at the Leonardo Helicopters Cascina Costa facility in Italy, the 75 minute flight and ground tests evaluated the engine performance with multiple power variations and other system checks. The tests showed the new fuel had no significant response differences to the use of Jet A1 fuel. Earlier in 2023, in-service AW139s carried out demonstration flights with SAF, blended with jet fuel under the current certification standards, in Japan, Malaysia and the United Arab Emirates.

All the main civil types within the Leonardo's helicopter product range are already certified for operations using SAF with a blended ratio up to 50 percent, but the company is now keen to increase the SAF content to 100 percent with the obvious significant contribution this can make to reducing the carbon footprint.

Commercial - INTERNATIONAL

Airbus Helicopters received Transport Canada Civil Aviation type **certification for** the **H160 helicopter** in early December, positioning the new design for entry into the Canadian market. The aircraft has already generated strong interest across North America, says the company, with its multi-mission capabilities and advanced safety features, lower noise levels and enhanced performance and 15 percent reduction in fuel consumption all contributing to the customer interest.

Worldwide the H160 has already logged more than 2,800 flight hours and is certified in the United States, Brazil, Saudi Arabia, Japan and Europe, with customers for all the key mission segments that it was designed to address. Those include business and private aviation, energy support, emergency medical services, search and rescue, law enforcement and military uses.

Commercial - INTERNATIONAL

Having completed the first-ever electric air taxi flight in New York City on 12 November, **Joby Aviation** is moving closer to **introducing** regular **eVTOL flights from** the Downtown **Manhattan** Heliport, securing an agreement to electrify the heliport and to introduce regular flights in partnership with Delta Airlines following anticipated certification.

Joby estimates that using a piloted four-passenger eVTOL aircraft with a range of up to 161km (100 miles) on a single charge, flying from Manhattan to John F. Kennedy Airport should take just seven minutes. Currently it can take travellers more than an hour by car. The low noise level generated by the eVTOL also means that the aircraft can operate across all of the New York's five boroughs without creating controversial noise pollution.

Five days later, on 17 November Joby was awarded a $9.8 million grant by the governor of California's Business Office to support pilot training and help expand its manufacturing facility in Marina, California.

Dart Aerospace has introduced a lower-profile handle design for its **Heli-Utility Baskets** at the request of the European Union Aviation Safety Agency. Designed to eliminate any possibility of snagging, the **upgrade** is approved as a retrofit kit to replace existing basket handles on 11 Basket models and will eventually become standard equipment on all Heli-Utility Baskets. The new handle design will come as a standard feature on the new Bell 505 Heli-Utility-Basket and is available worldwide via Dart's official website.

More information on pricing and lead times can be provided by the company sales team at sales@dartaero.com

The China National Aero-technology Import and Export Corporation (**CATIC**) unveiled a new rotary-wing unmanned air system (**RWUAS**) at the **Dubai Air Show** 2023 on 13-17 November. The four-bladed AR2000 is turbine powered and can carry pylon-mounted missiles together with chin and nose-mounted surveillance and radar systems.

Also exhibiting at the Show was Russian Helicopters, with the modernised Kamov Ka-32A11M fire fighting helicopter. This Ka-32 variant was making its international debut, equipped with the SP32 fire extinguishing system. Its tank can be filled with four tonnes of water in less than a minute and 400 litres (0.22gall) of foaming agent can be added to increase its efficiency. The helicopter is also able to use a water cannon, making it possible to attack fires on upper floors in high rise buildings or under conditions of heavy smoke.

Also on display was the Ka-52 attack helicopter and the Mil Mi-171A3 transport, configured to accommodate 24 people for flights to offshore rigs for crew changes and maintenance work. The Ansat light helicopter was also promoted, shown in its air medical configuration which allows first aid and stabilisation of a patient's condition during the flight.

Despite the successful flight demonstration of the Kamov Ka-52 at the Dubai Air Show the aircraft has been less successful during its operational deployment by the Russian invasion forces in Ukraine. Here more than 25 percent of the Air Force fleet had been shot down by the end of 2022, with further losses recorded since then.

Léman Aviation in Switzerland and France has signed a preliminary sales agreement with Leonardo Helicopters **to take** 10 **AW09** single-engine helicopters, bringing the total number of preliminary contracts agreed for the type to almost 80 aircraft across Europe, North and Latin America, Africa and Asia.

Léman has an especially strong presence in Monaco and the French Riviera, and sees the AW09 of interest for private and corporate sales, co-ownership programmes, charter management and training. The company would also offer maintenance and support for the aircraft. The announcement of the agreement took place at the European Rotors event in Madrid on 28 November, where Leonardo showed a full scale mockup in the final AW09 configuration to potential customersA group of helicopter enthusiasts in the Vendée department in the Pays de la Loire region of western France have formed the "**Un Siko en Vol**" association **to restore** a Sud Aviation built Sikorsky **H-34A Choctaw** to flight. The aircraft, originally serialled SA55 and coded 68-0A with the French Army Aviation (ALAT) has recently been civil registered F-AYOA (cons. number SA55) and moved into a hangar for restoration work to begin.

134 H-34 helicopters were initially purchased by France to meet urgent transport demands during the Algerian conflict. The aircraft were shipped in kit form from the United States for assembly by Sud Aviation and were later followed by a further 166 locally manufactured by the French company. In addition to being operated by the ALAT the type also entered service with the French Air Force and Navy for similar transport and rescue missions.

People…People…

Bell Textron has **appointed** **Jacinto Monge** as **Managing Director** of Commercial Business **in Europe,** following previous positions as Managing Director for Bell Asia Pacific, and as the Representative Director for Bell in Japan, where he led the company's commercial business in China, Japan, Korea, India, South East Asia, and the Pacific region. During this tenure he added 326 orders and 281 deliveries to the company's sales and service footprint, including agreements with the Shaanxi Helicopter Company for 100 Bell 407s and Reignwood Aviation for 110 Bell 505s, 40 Bell 505s for the Republic of Korea military training, and three Bell 429s for the Queensland Police Service. Monge was also involved in the acquisition of the Subaru Bell 412 by the Tokyo Metropolitan Police and regional Fire Fighting and Disaster Relief departments in Japan.

Commercial - INTERNATIONAL

According to senior company representatives at the recent NBAA-BACE 2023 Show, held in Las Vegas in mid-October, the **Airbus** Helicopters **ACH160** corporate **variant** is due **to enter service next year in** the **United States**, following previous deliveries since 2022 to owners in Brazil, Europe and Saudi Arabia. The type is also certified in Japan and the Philippines, and in the United States, where the company is finalising its own pilot training effort in readiness for training customer's pilots.

The North American, Brazilian and European regions accounted for 70 percent of the company's ACH market in value earlier this year, with 108 net ACH sales worth $790 million booked in 2022. Leading the field was the ACH130 light single with 36 orders, followed by the ACH125 with 28 orders. In the light twin sector 10 ACH135s were ordered, in addition to 20 ACH145 with a refresh of the Mercedes-Benz Style version of the latter due in 2025. In the medium twin sector, 10 ACH160s were ordered alongside two ACH175 super medium twin orders.

Airbus currently uses both in-house schemes and various third party companies for the ACH completion process, with design, integration and delivery remaining under the company's control. However to ensure a consistent level of quality, the company is now looking at standardising the cabin interior manufacturing processes and streamlining the whole completion process across the ACH product line.

Subaru is working on a new air mobility concept design at its Japanese headquarters, recently **reveal**ing a mock up of the **electric VTOL** at the Japan Mobility Show. This featured six ducted rotors surrounding a central side by side two-seat cockpit and able to land and take off using any available space. The company has so far not revealed other details, such as range, endurance and performance.

A number of other companies are pursuing similar "flying car" eVTOLS, including Aska which is developing a 4-seat model and has received a Special Airworthiness Certificate for testing their pre-production prototype, and Alef. This company is developing a two seat model and claims to have already received a number of pre-orders from individuals and companies

Accident Spot

November

10 A US Army Sikorsky MH-60M helicopter, operating in the Eastern Mediterranean from the aircraft carrier USS *Gerald R Ford* on a routine training mission, crashed into the sea approx 55km (34 miles) south east of Cyprus. All five crew died in the accident. The helicopter reportedly was involved in a night-time training mission with the US Army Special Operations Forces, and was carrying out a routine air refuelling when the accident occurred.

13 Sikorsky MH-60J serial 6016 (cons. number 70-1698) of US Coast Guard written off during night search and rescue mission when it crashed on Read Island, south of Juneau, Alaska whilst assisting crab fishing vessel taking on water in heavy seas and high winds. The four crew members, based at Air Station Sika were injured and transferred to Petersburg aboard a second MH-60J for medical care in the early hours of 14 November.

15 Bell OH-58A N103WC (cons. number 40304) of Edgefield Aviation substantially damaged at Estacada, Oregon when it struck the ground whilst hauling Christmas trees as an external load. Main rotor blade separated and the tail boom was damaged in the impact. The pilot escaped uninjured.

15 Heli-Sport CH-77 Ranabot ultralight helicopter substantially damaged in crash in field near Cobreces, Spain where it rolled onto starboard side following impact with the terrain. The two occupants were injured and taken to hospital for medical treatment.

17 Mil Mi-8 of Uzebekistan Defence Force written off during training exercise at the Kattakurgan training ground. At least two crew died in the crash.

18 Robinson R44II N789GR (cons. number 10982) of H. Richardson & Sons substantially damaged in heavy landing at Ogdensburg Airport, New York, with main rotor and tail boom damage, rotor mast dismounted and skids buckled. Solo pilot injured.

20 Mil Mi-171E 1101 (cons. number 171E0040 4094308) of Kenya Air Force substantially damaged at Buna Hospital in Wajir North when it failed to take off following delivery of relief food in the area. The helicopter lost momentum and came down in field with tail boom partially separated and main rotor blades broken.

20 Eurocopter AS350B3+ 5Y-SDL (cons. number 4296) substantially damaged at Wajir Airport, Kenya when it crash landed and rolled onto starboard side whilst attempting to take off on flight to Arbajahan. Three occupants taken to hospital.

21 Eurocopter AS350B3 5Y-HNB (cons. number 4108) of ProFlight Ltd. Suffered minor damage on ground when tail rotor hit person at Masalani, Garrisa County and broke off. 1 fatal.

29 A Bell-Boeing CV-22 Osprey tilt-rotor crashed into the sea off Yakushima Island in south-western Japan, whilst trying to land at the Yakushima airport with one engine on fire. The aircraft had previously been circling before apparently an explosion occurred and it fell into the sea, breaking up on impact. SEight people on board all died in the incident.

29 McDonnell Douglas MD600N N745MB (cons. number RN067) crashed during external load operation near Sterling City, Texas en route from Mesquite Airport to Eastland Airport. 2 fatal.

December

1 Enstrom 280FX F-HPUX (cons. number 2167) of Rotor & Aircraft, Toussus-Le-Noble, France written off after it lost power immediately following take off from the European Rotor trade event at the IFEMA Exhibitors Centre in Madrid. It force landed after being piloted through the centre of an access roundabout onto a crash barrier in the central reservation of the nearby M40 dual carriageway. The crash occurred just 650m (2,100ft) from the event helipad in less than one minute after take off. The aircraft came to rest on its port side with the tail boom separated and wedged under the front cabin section, main rotor and tail blades broken and bent from the impact and the cockpit windows fractured. Both crew on board survived with minor injuries. A third person, the driver of a vehicle on the road also suffered minor injuries.

1 Mil Mi-35P of Nigerian Air Force written off in crash on take off from Port Harcourt air base, catching fire on impact. Helicopter had been tasked to attack rebels in River State who were sabotaging infrastructure. All five persons on board survived the incident.

1 Eurocopter EC130B4 XA-NAT (cons. number 7124) of Mexican Federal Electricity Commission destroyed in crash at Cuautla, Merolos during survey flight over electrical substation. Helicopter caught fire on impact. 3 fatal.

4 Mil Mi-2 RA23707 (cons. number 5410605048) of Convers-Avia substantially damaged in emergency landing near Nezlobnaya station, Stravropol region, Russia. Helicopter was carrying out patrol inspection of oil line when incident occurred and it rolled over on to starboard side on landing. Two persons onboard escaped without injuries.

16 Rotorway Exec 162F N60932 (cons. number 6429) of R.Rabe destroyed by fire after spinning out of control and crashing on the edge of the central median of Highway 72A in Tuscumbia, Alabama during a training flight.

20 A Eurocopter AS350B2 N606HD (cons. number 7601) of US Helicopters Inc and operated for ABC Action News crashed in woods at Washington Township, New Jersey on 19 December, whilst returning from news gathering on assignment at Jersey Shore. The aircraft was enroute to its base at Philadelphia North airport but was circling the Wharton State Forest at 20.00 hours before impacting trees at just 23m (75ft) above ground level in a remote area of the forest. The helicopter broke up on impact, causing a small fire in a dense wooded area. The pilot and photographer crew both died in the accident.

22 Mosquito Aviation XEL destroyed in crash near Pembroke, North Carolina. The kit-build helicopter was not registered and the sole occupant died in the incident.

28 Bell 206L-1 N571CJ (cons. number 45781) of Rotor Pro LLC operating on a tour flight substantially damaged in forced landing in field near Walland, Tennessee following in flight engine issues. Helicopter landed hard when tail boom partially separated from main fuselage.

30 Robinson R44 N828AK (cons. number 1689) of Old City Helicopter Sales damaged near Daytona Beach Airport when rotor blade was struck by a drone at an altitude of 55m (180ft). The drone, which was filming for a construction company, was destroyed

A **Bell 429** twin helicopter, ordered in March this year and **delivered to Caverton** Helicopters last July, has **begun** offshore transport **operations in Cameroon** following the award of a new contract in the country. The aircraft has been locally registered as TJ-COT and features a blue and white exterior colour scheme.

The first Bell 429 to operate in the oil and gas market in West Africa, the aircraft is also the first of its type to enter service with Caverton Helicopters, which is a subsidiary of the Caverton Offshore Support Group (COSG). This company is a fully integrated offshore support organisation, providing aviation and marine logistics services to businesses operating in the oil and gas industry in Nigeria and across West Africa

According to Bell Textron there are currently more than 450 Model 429s operating around the world, with over 602,000 total flight hours.

Bristow Helicopters has claimed that the company is being forced to **cannibalise** parts from some of its Sikorsky **S-92 helicopters** in order to keep enough aircraft serviceable to meet expanding offshore demand. The spares shortages include a lack of replacement main gearboxes, which Bristow says could put offshore safety at risk.

At least 31 S-92s were reported to be grounded at the beginning of November awaiting essential gearbox replacements, including 20 with Bristow, CHC and PHI, who together account for 61 percent of the total S-92 fleet, a number that the International Association of Oil and Gas Producers believe could double to over 60 by the end of 2024. Aircraft dispatch reliability rates have declined from an industry average of 96 percent to approximately 80 percent, leading to operational challenges and disruption, as well as greater pressure on maintenance, repair and overhaul providers. Apart from the surge in parts cannibalisation, maintenance extension requests and maintenance-related incidents are also rising. In fact maintenance extension requests are reported to have increased by an average 850 percent this year, whilst more than 50 parts being taken from an aircraft entering maintenance is said to be not uncommon. Likewise the time taken to complete a 1,500 hour inspection has increased by 75 percent to 75 days, creating a need for 25 percent more manpower and a 57 percent increase in overtime. A knock-of effect of the problems and delays are the contracts operators have with their offshore customers, which can include punitive financial penalties for not meeting helicopter availability targets.

Sikorsky Aircraft says they have invested extensively to address the gearbox problem, which they partly blame on 22 percent increase in flying hours over the last three years alongside supply chain issues affecting their subcontractors where the company has been assisting to source speciality metals and other materials but admit they don't see a solution before the end of 2024.

Meantime several S-92s are now close to reaching their 30,000 hour life limitation, with the company having no plans to extend it. A low production rate is further complicating the problem, with only four S-92s delivered in 2022 and any new aircraft ordered today would not be delivered before 2025-2026.

The **NHV** Group has **partnered** with **Taiwanese** company **Apex Aviation to** provide helicopter **support** services **for** the growing offshore **wind farm industry** in Taiwan waters. Apex Aviation already has deep industry expertise and a proven track record of collaboration with the Taiwanese government and local authorities. It expects to now expedite the certification process for helicopter operations with the NHV support, with a launch date targeted for the fourth quarter of 2024.

In addition to transportation services, the collaboration will also include helicopter emergency medical service (HEMS) solutions, as well as inviting additional domestic partners

Regional News

- OFFSHORE WORLDWIDE

Leonardo Helicopters has been flight testing a **fourth AW169** helicopter **for** the Danish operator, **Unifly**, at its Vergiate production facility in Italy, to be utilised in the UK to support one of the largest worldwide wind farms Hornsea Project One in the North Sea. The aircraft, (cons. number 69170) and temporarily registered I-EASK, will join OY-HOW (cons. number 69168) and OY-HOF (cons. number 69073) from the Unifly base at Odense in Denmark, and G-UNIB (cons. number 69152) based at Humberside in the UK.

Hornsea Project One is located 120km (74 miles) off the Yorkshire coast due east of the city of Hull and includes 174 turbines covering an area of 407sq.km (157.2 sq.miles) It became operational in 2019 and is 50 percent owned by Ørsted with the remaining 50 percent owned by Jupiter Offshore Wind Ltd

Portuguese oil and gas operator **Omni Helicopters** International has **ordered** three **AW189** Super Medium helicopters, for operations in the Brazilian offshore market. Whilst two of the aircraft are standard AW189s, powered by the General Electric CT7-2E1 turboshaft, the third is an AW189K variant, which features the more powerful Safran Aneto engines, each rated at 2,500shp (OEI) maximum power.

The new contract follows a significant fleet expansion at Omni, with eight AW139 intermediate twins and two AW189 super medium helicopters procured since 2021. The introduction of the AW189K into the local market will allow the company to meet different mission requirements, while maintaining the combination of efficient long range, high endurance and large capacity operations with lower operating costs compared to larger, heavier types such as the Sikorsky S-92. This is especially advantageous in South America where newly discovered oil reserves offshore Brazil and Guyana are increasingly further from the coast.

Military Helicopter News

January-February 2024

The first of 20 Leonardo RH119A helicopters destined for the Italian Carabinieri, serialled CSX82103 (cons. number 15501), has been test flying from the Vergiate plant. Together with the new UH-169C helicopters currently being delivered, the RH119As will form the future assets for the Carabinieri, replacing the AW109Ns and AB412 helicopters which are currently being decommissioned. Based on the single-engine AW119 Koala helicopter, the RH119A is being assembled in Italy at the Vergiate factory and is similar to the 15 AW119T variants currently being delivered to the Turkish Ministry of Defence for pilot training and which itself is based on the AW119M military Koala.

(*Photo: Oscar Bernardi*)

The Royal Australian Air Force has airlifted **two** MBB/Kawasaki **BK117** helicopters **to** the **Antarctic** in a Boeing C-17 Globemaster **to support** Australian Antarctic scientists carrying out **environmental studies** on the Denman Glacier. The helicopters will be based at Edgewood David Base Camp throughout the next several months.

Prior to the move, the helicopters were flown to Amberley Air Force Base in Queensland for a loading trial to identify any potential issues, before being winched on to the C-17 at Hobart Airport, with the rotor blades removed and tethers attached to prevent any movement. Although quite heavy helicopters are routinely carried on the Globemaster, this was the first time the lighter BK117 had been loaded on the aircraft, requiring extra care by the loadmasters.

The flight itself took nearly five hours, before the C-17 arrived at Wilkins Aerodrome in the Antarctic, with the BK117s being winched off in minus 10 degrees and, with blades attached, flown to Casey for the night and then on to the Bunger Hills to begin work.

Throughout the deployment when away from the comforts of the David Base Camp, where hangarage is available, the helicopters will live outside, with precautions such as using tie downs and blade removal if the weather forecast is for high winds. Likewise panels will be taped if there's a risk of blizzards, as fine wind blown snow can easily get into every crack or opening. In those circumstances the engineers will open all the panels to check there's no snow or ice in critical components before clearing the helicopters for flight.

Bell has released a **concept for** a sea-based uncrewed **tiltrotor** system that can rearm, reload cargo and refuel itself. The project has already secured a Phase 1 contract to further develop the concept under a Defence Advanced Research Project Agency (DARPA) Speed and Runway Independent Technology (SPRINT) X pPlane programme. Bell is one of four companies to receive Phase 1 awards to design an aircraft with a hover ability and a top speed I excess of 740km/h 460mph. The Bell approach is to use a folding rotor system which slows down and stops, to fold back along the nacelle in forward flight, reducing drag to achieve speeds more than 33 percent faster than the current V-280 Valor or V-22 Osprey.

The entire concept is part of a vision for carrying out operations in the vast maritime spaces of the Indo-Pacific region, where land based options for landing to refuel and rearm are likely to be very limited Thus the use of a Sea-based Logistics Unmanned Rearm/Refuel platform (SLURRP), that can be prepositioned to provide a base for the unmanned air system (UAS) is seen as a viable option.

DARPA has also selected Aurora Flight Services, Northrop Grumman, and Piasecki for Phase 1A Sprint contracts, with a first flight of an X Plane planned in FY2027.

The **Schiebel S-100** Camcopter, **ordered by** the **Royal Navy** for short range surveillance operations as the Peregrine, is now due **to enter** operational **service in January**, with its first shipboard deployment expected to be aboard HMS *Lancaster*. The unmanned helicopter will operate in conjunction with the ship's Leonardo Wildcat helicopter, providing real-time imagery and radar data that can be fed directly into the ship's combat management system.

The aircraft can be launched rapidly and has a six hour endurance and a range of around 180km (112 miles) depending on the payload. Thales is the prime contractor and systems integrator providing their I-Master airborne surveillance radar, which is capable of detecting small and slow moving targets, including ships at up to 100km (62 miles) and vehicles at 15km (9 miles). The contract with Thales is initially for two years with an option to extend.

This cautious approach is expected to help the Navy to learn from rotary-wing unmanned operations that can be fed into the Future Maritime Aviation Force programme.

The Royal Netherlands Air Force (RNiAF) has placed its **final** Boeing **CH-47F MYII CAAS** Chinook in service **with No. 298 Squadron at Gilze-Rijen** Air Base. The aircraft, serialled D-606 was flown from the Air Force logistics centre at Woensdrecht where it had been fitted out following shipment from the Boeing factory in Philadelphia.

20 CH-47F with the Common Avionics Architecture System (CAAS) were ordered by the Dutch government to replace older CH-47D aircraft, with the first aircraft being delivered to No. 298 Sqdn in April 2021. Originally it had been intended to buy only 14 of the new variant to replace 11 CH-47Ds and to upgrade six older CH-47Fs, but it was subsequently decided to replace the CH-47Fs as well and re equip with the 20 CH-47F MYII CAAS aircraft. 15 of these were allocated to No. 298 Sqdn, with the remaining five now being operated exclusively for training by No. 302 Sqdn at the US Air Force Robert Gray Air Force Base in Texas.

No. 302 Sqdn is operating serials D-474-D-478, whilst No. 298 Sqdn in the Netherlands is operating D-472, D-473, D-479-D-485, and D-601-D606.

After over 50 years of service the Royal Norwegian Air Force retired its **last** Westland **Sea King** Mk.43B helicopter on 27 November in a farewell flight by No. 330 Squadron, that began at the Sola headquarters base in Stavanger and visited Lysebotn, Røldal, Odda, Torpomoen, Gol, Fagernes, Lillehammer, Hamar, Gardermoen, Oslo and Drammen before landing at Rygge air base where the helicopter, serial 189 (cons. number WA874) will be temporarily stored.

Rygge is the last base where the replacement Leonardo AW101-612 will take over the search and rescue tasks from the Sea Kings, which first entered service in May 1973 and since then have logged over 45,000 missions. A total of 14 aircraft were delivered, the majority in 1972-73 but with one following in September 1978 and three upgraded Mk.43B delivered in 1992 and 1996. Only one Sea King was lost, serial 072 which was written off in an accident on 30 April 1977. In addition three former Royal Air Force HAR Mk.3As were received for spares recovery and instructional use in November-December 2015.

Airbus Helicopters carried out the **first flight** on 30 November **of** the first N**H90 Sea Tiger** at its Donauwórth facility in Germany. The aircraft, serialled 98+55, is one of 31 Sea Tiger multi role New Frigate Helicopters (NFH) for the German Navy's shipborne operations, ordered in 2020 and due to be delivered from late 2025.

In the meantime Airbus will begin a qualification phase that will focus on flight testing the aircraft and the new systems, to be installed on the type to meet the requirements for a state-of-the-art anti-submarine warfare helicopter. Equipment to be certified include a new Electro-Optical System and improved Electronic Support Measures. In service the Sea Tiger will be equipped with a dipping sonar, sonobuoys and weapons, including torpedoes and missiles, to attack targets both above and below the surface. In addition it will also be capable of carrying out reconnaissance and transport missions.

The helicopters will replace the German Navy's ageing Westland Sea Lynx Mk.88A helicopters, which entered service in 1981, and will operate alongside the NH90 Sea Lion variant, 18 of which were delivered on schedule between 2019 and 2023 for transport and search and rescue duties. 135 naval NH90 helicopters have already been delivered to six nations and have logged over 90,000 flight hours in search and rescue, humanitarian, and military operations.

Eleven **former Cyprus** National Guard **Mil Mi-35P** Hind attack helicopters were air freighted from Paphos airport **to** Batajnica in **Serbia** in late November, following their purchase for service with No.714 Squadron, based at Kraljevo. Here they will join four Mi-35M helicopters already operated for anti-armour attack by the squadron.

The eleven helicopters, including at least six non-airworthy aircraft due to a lack of parts, were shipped in an Antonov An-124-100 in three flights on 19-21 November. Previously they were in service with the Cyprus National Guard, which ordered 12 Airbus H145M helicopters as replacements. Six of these were a firm order, with the remaining aircraft as an option.

Defence - INTERNATIONAL

The **US** Department of Defence has **refuse**d a request from Japan's defence minister **to ground** Bell Boeing **MV-22 and CV-22** Osprey tiltrotors based in Okinowa and at Yakota in Japan, following the fatal crash of a CV-22 of the 353rd Special Island on 28 November. All eight crew members aboard the aircraft died in the incident.

Japan grounded its own fleet of six MV-22s following the crash, concerned that the accident was the third fatal incident involving the tiltrotor in the last 13 months. However crash investigators have yet to find evidence of any catastrophic failure that caused the accident, with early signs pointing to a human error cause.

An update on the fatal crash revealed on 4 December that five of the eight crew members on board had been found dead in the aircraft wreckage, which included the cockpit and the main fuselage. Two of the crew were quickly recovered by dive teams and the remaining crew members had all been recovered by 6 December. A number of wreckage pieces had also been discovered around the crash site and brought ashore at Anbo port on the island.

Eye witnesses to the crash said that the tiltrotor flipped over and burst into flames before crashing into the sea, after it had requested an emergency landing on the island. Reports also say that the aircraft had been heading to Kadena Air Base on Okinawa prior to the emergency. Subsequently on 6 December the US Air Force Special Operations Command and the Naval Systems Command grounded all V-22s after a preliminary investigation found that "potential material failure" could have caused the accident, and that casual factors will be determined as part of the main investigation. In the meantime the services have implemented the additional risk mitigation controls to ensure the safety of their personnel.

Defence - INTERNATIONAL

The UK Ministry of Defence (**MoD**) is reportedly **negotiating** the **sale of five** brand new Airbus **H135** helicopters, currently held in storage at RAF Shawbury in Shropshire following a decision to cancel the original requirement for the aircraft, to replace the Army Air Corps Gazelle helicopters operating in Northern Ireland (*HeliData News 18 October*). Instead the MoD allocated surplus RAF AS350B helicopters for the role.

The purchase of the new H135s was agreed in late 2021 and the five aircraft were delivered under the contract with Airbus Helicopters between April and September 2022, from the company's Donauworth factory to the Airbus facility at Oxford Airport. Subsequently they were ferried to RAF Shawbury over the first three months of 2023. Following questions raised in Parliament, it has now been revealed that a government-to-government sale of the helicopters is currently being negotiated by the MoD Defence Equipment Sales Authority, with a joint announcement expected by the MoD and the customer once agreed. Until then the sale is considered to be "commercially sensitive".

The Royal **Jordan**ian Air Force has **taken** delivery of its **first five** Bell Textron 505 helicopters, part of a batch of 10 aircraft ordered in July 2022 **for** pilot **training**. The purchase also included a flight training device and a comprehensive computer-based training package, to support basic and advanced rotorcraft flight training at the King Hussein Air College in Mafraq, Jordan.

The ten new helicopters will replace 12 Robinson R44 helicopters currently used in the training role.

Piasecki Aircraft Corporation, now based in the former Sikorsky Heliplex plant in Coatesville, Pennsylvania has been awarded a **$37 million contract** by AFWERX, the US Air Force innovation arm, **to** flight **demonstrate** its Aerial Reconfigurable Embedded System (**ARES**), a **tilt-duct VTOL** unmanned system designed to carry quickly reconfigurable mission payload modules too support small combat forces operating over long distances and in complex terrain.

Featuring a small landing footprint to enable shipboard and expeditionary operations the ARES demonstration vehicle has been produced in partnership with Lockheed Martin, with initial funding from DARPA (Defence Advanced Research Projects Agency) and Piasecki says the follow on funding from the US Air Force and Army would allow the company, in conjunction with Honeywell, to integrate a triplex fly-by-wire flight control system and to begin flight tests by the end of this year (2023).

The contract, awarded in conjunction with the US Air Force Research Laboratory as part of its Strategic Funding Increase (STRATFI) programme, will also include the demonstration of hydrogen fuel cell propulsion technologies for VTOL and other aviation applications. This would include the PA890 compound helicopter under development in partnership with ZeroAvia, which is working on the High Temperature Proton Exchange Membrane that will provide the hydrogen power for the slowed-rotor PA890.

Boeing has handed over the sixth and **final pre-production MH-139A** Grey Wolf helicopter **to** the **US Air Force** for test work, completing the evaluation phase of the MH-139 contract prior to moving to the production phase. Announced on 20 November the company says completion of the research, development, test and evaluation (RDT&E) in October clears the way to transition towards low-rate initial production of the helicopter, with the first delivery due now in 2024.

Whilst the Air Force will continue to carry out critical operational testing of the aircraft, Boeing can now focus on building the first production MH-139A, with the aircraft already in final assembly. Under an initial contract Boeing is building 13 to begin replacing the ageing Bell UH-1N fleet currently used for protection of America's ICBM missile bases and VIP/Security transport missions. Ultimately Boeing is expected to deliver up to 80 MH-139A helicopters to the Air Force under a partnership with Leonardo, whose AW139 airframe, produced at its US plant in northeast Philadelphia is providing the basis for the MH-139 variant.

The **Nigerian Air Force took** delivery on 1 November of the **first** two Turkish Aerospace Industries (**TAI**) **T129 ATAK** helicopters, flown in from the TAI facility in Ankara aboard a Turkish Air Force Airbus A400M heavy lift transport. The two helicopters, serialled NAF500 and NAF501 had previously been handed over to Nigerian government representatives in Ankara on 29 October.

Nigeria ordered six T129s from TAI in 2022, powered by LHTEC CTS800-4A turboshaft engines, with two more to be delivered by the end of this year and the final two in the first quarter of 2024. An option for a further six aircraft has also been pencilled in. The initial batch of helicopters will be operated by the 115th Special Operations Group, based at Port Harcourt and will be deployed against militant rebels and other security challenges facing the country. Developed from the AgustaWestland A129 but with weapons including a 20mm cannon, UMTAS anti-tank missiles, CIRIT laser-guided missiles, rockets and Stinger air-to-air missiles, together with other upgrades for hot and high operations, the T129 first flew in August 2011 and has a maximum take off weight of 5.5tonnes. An Aselsan Aselflit 300T gimbal mounted on the nose features an infrared camera, TV camera, laser rangefinder and target designator.

The new T129s will operate alongside 24 Mil Mi-24 and Mi-35 Hind heavy attack helicopters, with the acquisition of 12 Bell AH-1Z helicopters under discussion since April last year. In addition the Nigerian Army is establishing its own air wing with 12 MD Helicopters MD530F Cayuse Warriors, due to be delivered from the end of this year for ground attack operations.

● At least 24 Agusta A129 helicopters have been withdrawn from Italian service and dumped in the military area of Bergamo airport. These include mostly A129C variants but also the A129CBT, leaving only about 30 A129D still in service pending delivery of the 7-8 tonne class AW249 replacement, due to enter service in 2025.

No. 1710 Naval Air Squadron, based in Portsmouth, together with Royal Navy engineers and a digital Artificial Intelligence (**AI**) team are collaborating at RNAS Yeovilton in Somerset to develop a new defence software tool, **Motherlode.** The **AI capability** is initially **being trialled on** the Leonardo **Wildcat maritime** attack **helicopter** but is expected to be rolled out by the end of this year across all Royal Navy helicopters.

Motherlode processes aircraft maintenance data at a rapid pace, reducing lengthy problem-solving tasks down to seconds. This ensures engineering issues are detected at the earliest possible point, rather than when a fault becomes problematic and allowing personnel to order spares ahead of issues arising. The software will be capable of analysing historical data tailored to environmental and aircraft specific conditions, to predict failures within equipment more accurately. This will allow smarter decision making from the back office to the front line.

Defence - INTERNATIONAL

The Chinese **AVIC Z-10** attack helicopter has recently carried out a day and night **live firing exercise** off the coast of Fujian Province, carrying a mix of munitions and **debuting** a **new** 10 round **rocket launcher.** A group of Z-10s, attached to an aviation brigade under the command of the 73rd Group of the Peoples Liberation Army, carried out the exercise, flying at low level to avoid radar detection and attacking maritime targets and targets on islands and reefs in designated areas.

Following the first wave of attacks the helicopters were then employed to attack multiple waves of more enemies in the area, before carrying out a further attack at night, with the pilots using night vision goggles and other equipment to complete the strike missions. The new rocket launcher, which was only introduced to service in September, provided more fire power and is able to be carried because of the recent increase in the Z-10s maximum take-off weight, made possible following an upgrade of its 1,250shp class WZ9-9G powerplants.

The 73rd Group Army is affiliated with the PLA Eastern Theatre Command, responsible for the Taiwan Straits, and the disputed seas near the island. In this context Z-20 utility helicopters were also included in the exercise.

Defence - INTERNATIONAL

The **Israeli Defence Force** has been **using** a **modified** version of the Lockheed Martin **Hellfire** ground-to-air **missile** in recent attacks on Hamas terrorists in Gaza. The missile is believed to contain a thermobaric warhead, which is better suited to destroy forces hiding in bunkers or tunnel networks hidden under residential or commercial buildings.

Believed to be designated the AGM-114N, known also as the Metal Augmented Charge (MAC) Hellfire, this missile is specifically designed to destroy enclosed targets, able to destroy the entire first floor of a building for example whilst leaving the floors above relatively intact. The warhead works essentially by taking oxygen from the surrounding air to generate a sustained high pressure blast wave, which creates a vacuum followed by a high temperature explosion. It was first used in action by US forces during Operation Iraqi Freedom.

The new version of the Hellfire was seen in an official IDF photograph of an Apache carrying out a rolling take off for a presumed sortie over Gaza, with one of the Hellfire missiles in a four-round cluster on the starboard stub wing pylon marked with a single red-painted band. The other missiles being carried featured the more normal three yellow bands seen on live Hellfire rounds, indicating they contained high explosives. Soon after the photograph appeared the IDF replaced it with a similar picture, but showing an AH-64D taking off with standard Hellfires fitted, featuring only yellow bands but with the same caption.

Speculation on social media favours an incendiary warhead, using a zirconium incendiary mixture to augment fuel initiation, with burning fragments continuing to burn for at least a second after impact. However the IDF has made no comment.

The **first** two **Leonardo AW149** multi-role support **helicopters for** the **Polish Land Forces** were **handed over** to the 25th Air Cavalry Brigade on 30 October by PZL Swidnik and the head of the Defence Ministry, in Tomaszow Mazowiecki County. Serialled 6701 and 6702 (cons. numbers 49104 and 49105) the two aircraft are the first of 32 AW149s ordered in July 2022 from the PZL Swidnik factory, where the aircraft are being co-produced in conjunction with the Leonardo Italian facilities.

As the prime contractor PZL Swidnik is also carrying out the integration of the helicopter systems and dedicated armament, with its domestic logistics base and technical facilities located close to the Polish Land Forces. Depending on the specific tasking the AW149 can be equipped for transport, battlefield support and combat rescue operations, with armaments options including Hellfire anti-tank missiles, unguided rockets, small arms and self-defence systems. These can be installed in the cabin or on stub wing suspension points.

The **interception of** a **R**oyal **C**anadian **A**ir **F**orce **CH-148** Cyclone helicopter in the **South China Sea** on 29 October by two Chinese People's Liberation Army (**PLA**) **J-11 fighters**, whilst flying from the frigate HMCS *Ottowa* in international airspace, has been **criticised as unsafe** by Canadian defence officials, who described two close encounters as potentially dangerous and unnecessary.

One intercept saw a J-11 conduct several successive close passes, culminating in one overhead the helicopter with little separation and causing the Cyclone crew to experience turbulence and take appropriate action. During a second sortie the helicopter was intercepted again by a J-11 which launched flares directly in front of the Cyclone, forcing evasive action to avoid the risk of ingesting a flare into its rotor or engine intakes. The Canadian Department of National Defence claimed that the J-11 fighters got as close as 30m (100ft) from the helicopter during these intercepts which took place well outside any claimed territorial seas and associated airspace.

Despite the Chinese actions, the air detachment aboard HCMS *Ottowa* and the helicopter remained safe and unharmed and have continued with the mission.

The **Romanian** Emergency Rescue Service (SMURD) **took** delivery of the **first** of seven **Sikorsky S-70i** helicopters on 11 November **for** search and rescue (**SAR**) **operations**. The helicopter, serialled 276 and carrying the test registration SP-YVW, was flown from the PZL Mielic factory where it had been assembled, via Kusice airport in Slovakia to Cluj-Napoca airport in Romania.

Three of the aircraft are being configured for SAR operations over water, three will be dedicated to SAR over land, and one will be allocated to the Police for law enforcement and border operations.

Parapublic

The **Uzbekistan** Health Ministry is expected **to order** 10 new **Airbus H125** helicopters for emergency medical services (**EMS**) deployment across the country, especially in the more rural mountainous areas which are otherwise hard to reach. Like most former Soviet Union satellite countries, Uzbekistan previously relied on Mil Mi-8 helicopters for EMS work, but now operates an almost exclusive fleet of Airbus types for its state-owned companies and military forces.

The purchase of H145s is part of a broader reorganisation of the country's air medical system, intended to mimic European standards by creating a material and technical base and training specialists in the field, as well as developing mechanisms for organising the EMS organisation.

The **San Diego Sheriff**'s Department unveiled two **new helicopters** at its Gillespie Field base in El Cajon, California on 20 November, one of which will eventually join San Diego Fire-Rescue to provide an aerial night time fire fighting capability. The $15.7 million helicopter is a Subaru Bell 412EPX twin, which will meet the safety requirements to be flown on night missions to drop water on fires, but only after the Sheriff's Department flight crew have undergone several months of intensive training.

The Model 412EPX will replace one of the three Bell 205 helicopters in the Sheriff's fleet, all of which are over 50 years old and suffering from spares shortages. The retired aircraft however will be retained for spares recovery to keep the remaining two Model 205s airworthy until there is a budget to replace them too. Meanwhile the Sheriff's Department has received a new patrol helicopter, a Bell 407GXi, for tracking suspects and for search and rescue missions within the Sheriff's jurisdiction.

The **Yorkshire Air Ambulance** Trust has officially confirmed that it has **ordered** a **third** Airbus **H145** helicopter, to provide a back up for the two H145s delivered earlier this year. The order was revealed in the Trustees annual report, with a sum of £7.8 million allocated in the company's reserves.

The purchase will take place in October 2024 with delivery expected of the fully-equipped aircraft in that same time frame. In service the new acquisition will provide improved coverage when either of the two existing H145s are undergoing maintenance, as well as being available for surge medical and rescue disasters and crew training.

Gulf Med Aviation Services, which recently took over the Irish Emergency Medical Service (EMS) under an agreement with the country's health service (HeliData News 44/22 1st November) has **sold its remaining shares to Medilink International.** The company, headquartered in Qarmi, Malta already held the majority of shares in Gulf Med Aviation Services since the founding of the company in 2016.

The completion of the acquisition represents a significant step forward for Medilink, which will now be able to further integrate the resources, expertise and services inherited from Gulf Med and strengthen its ownership and control over the company. As of early November Gulf Med was operating from 12 bases across the African continent plus bases in the Middle East, Spain, Turkey, the UK and Ireland, with both onshore and offshore contracts. The company also holds an EASA Air Operator Certificate as well as Part 145 maintenance approval.

LEVL Leasing, which is a joint venture between Lobo Leasing and EMB Structured Assets GmBH has closed a **Euro 50 million sale and leaseback** transaction **of** six **Airbus H145D2 and D3 helicopters** with Avincis. The agreement has seen the helicopters put into service on emergency medical service (EMS) contracts in different regions across Italy.

The LEVL Leasing joint venture currently manages a portfolio of 26 assets deployed on EMS, search and rescue and fire fighting missions across Europe. The partners are already planning to further develop their relationship with Avincis, which operates across six countries in Europe and also in Chile and Mozambique, with a fleet of over 200 aircraft providing live-saving services.

Parapublic

The San Diego Police Department is to receive three new Airbus H125 helicopters to replace three older AS350B aircraft that have been in service since 2005. The prime role for the H125s will be a continuation of the surveillance, vehicle pursuits, missing person searches, and emergency call-outs already well practised by the Department's helicopter unit.

The driving force for the new aircraft, budgeted at $18 million, is the rising maintenance costs for the three AS350Bs and the advancements in technology which the new aircraft will provide. This includes better navigation systems, crash resistant fuel tanks, back-up hydraulics and an autopilot option.

The new H125s will join an H125 purchased in 2020 to replace a 2004 AS350B, this bringing the strength of the Police Department helicopter unit back up to four aircraft.

City officials believe the trade in or sale value of the three older helicopters is at least $2,400,000, helping to offset the cost of the new aircraft.

Babcock and Airbus Helicopters have been awarded a new contract by the French Ministry of Defence Directorate of Aeronautical Maintenance to support the four new Airbus H145-D3 helicopters operated by the Securitie Civile that performs rescue services across France. The four year contract covers maintaining the five-bladed H145s in operational condition including the mission equipment and support resources.

The Securitie Civile operates a fleet of 37 Airbus helicopters, on call 24/7 and carrying out 15,000 missions each year, the fleet comprises of twin-engined H135 and H145 aircraft all supported by Babcock. The first H145s were delivered in December 2021 following certification of the five-bladed variant in June 2022 and an initial order for two aircraft placed later that year. Two additional helicopters were ordered in December 2023. The new five-bladed variants are gradually replacing a fleet of 33 EC145s that entered service in 2002-2009.

Sikorsky Aircraft has delivered the first replacement MH-60T Jayhawk airframe to the US Coast Guard logistics centre in Elizabeth City, North Carolina, to start a ten year programme to extend the service life of the existing MH-60T fleet into the 2040s. Over the past 33 years the logistics centre has maintained and repaired the Jayhawks close to their airframes maximum operational life limit of 20,000 hours with the per aircraft average currently at 16,000 hours. The fleet has logged more than 730,430 flight hours during more than 48,300 search and rescue missions since 1990.

The first MH-60T to enter the life extension programme has received its new airframe, consisting of the nose, cabin and aft transition structures combined as a single assembly in time for work to begin this month (December). This also involved the Coast Guard logistics centre removing all the dynamic components, engines, digital cockpit, and mission systems before rebuilding the aircraft around the new airframe. Sikorsky is under a $374 million contract to deliver all 45 MH-60T airframes to Elizabeth City through 2027 at a rate of 12 per year and has recently been authorised to move to full rate production with the fourth airframe.

China Aviation Rescue & Emergency (CARE) signed a letter of intent at the end of November with Bucher Leichtbau in Switzerland for the joint development of emergency medical service (EMS) and air rescue equipment for an Airbus H135 helicopter, which operates in the Yangtze River Delta region.

Bucher has equipped the helicopter with its AC67 Flex system, which is rapidly deployable for EMS missions and marks the first ever application of a 20 minute quick change between VIP and medical configurations in China, significantly expanding the versatility of helicopters in the country. Included in the collaboration agreement is theoretical and practical training for Chinese medical personnel, adhering to international standards and regulations, with the innovative training model assembled by Bucher already receiving praise and recognition from international HEMS exports.

Meanwhile Bucher is also offering an AC70 Flex version for Airbus H145 helicopters, designed to provide flexible and easy changes between EMS, VIP transport, police operations, cargo transport, fire fighting or military applications. According to Bucher this versatility has also attracted interest from private helicopter operators seeking to maximise operational efficiency.

The Lithuanian State Border Guard confirmed a contract with Airbus on 29 November for three five-bladed H145 multi-mission helicopters to carry out search and rescue, disaster relief, medevac and fire fighting support, alongside the operational deployment of Special Forces to protect the country's borders. Funded in part by the government with European support, the H145s will further strengthen the intelligence and response capabilities of the State Border Guard, which has been in partnership with Airbus since 2002 when it put into service its first EC120 helicopter.

With the addition of three new H145s Lithuania will operate a total of 11 Airbus helicopters, including also three AS365N3 Dauphins and alongside a small number of other types, such as the obsolete Mil Mi-8 and six replacement Sikorsky S-70 Black Hawks.

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