No. 132 - DECEMBER 2023

ROTOR

BY

AIRBUS HELICOPTERS

THE LIFE OF THE RANGE
One flight closer to the future

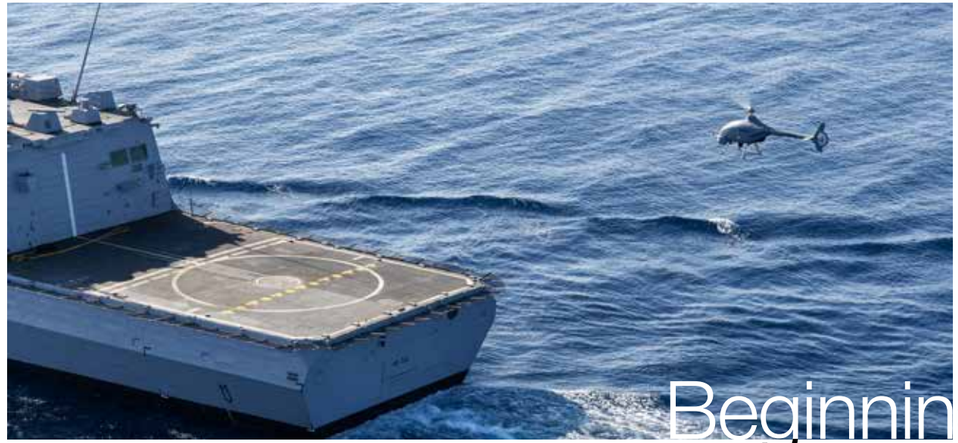
FEATURED ARTICLES
Guardian angels: saving lives and serving the public

OFF THE BEATEN TRACK
To the lighthouse… on an H125

Guardian angels

A TIGER COMES TO THE SEA
The first NH90 Sea Tiger took off on schedule for its maiden flight, at Airbus Helicopters' site in Donauwörth, Germany. The German Bundeswehr ordered 31 NH90 Sea Tiger multi-role frigate helicopters for the German Navy's shipborne operations in 2020. A qualification phase will now begin that will focus on flight testing the helicopter and new systems to be installed on board the NH90 Sea Tiger. Deliveries are scheduled to begin at the end of 2025. The helicopters will replace the German Navy's ageing Mk88A Sea Lynx fleet which entered into service in 1981. The Bundeswehr already operates 18 NH90 Sea Lion naval transport helicopters which were delivered on schedule between 2019 and 2023. The Sea Tiger is the latest version of the proven NH90 NATO Frigate Helicopter (NFH). Specifically designed for the operational needs of the German Navy, its missions include reconnaissance and transport, as well as engaging targets above and below the surface.

VSR700 TESTED AT SEA FROM A FRENCH NAVY FRIGATE
Airbus Helicopters and Naval Group, in collaboration with the French Armament General Directorate, DGA (Direction générale de l'armement), and the French Navy, have tested the VSR700 SDAM demonstrator (Système de Drone Aérien Marine/ Naval Aerial Drone System) from a multi-mission frigate (FREMM). The trials took place on board the French Navy frigate, *Provence* in the Mediterranean Sea between 2 and 9 October. The marine vessel had previously been adapted by Naval Group to operate the SDAM. These sea trials were arranged to demonstrate the system's high level of performance from an operational warship and the SDAM's capabilities for surveillance and intelligence missions.



Beginnings

HMOTION AIMS TO GET MOVING IN 2024
During European Rotors airshow, Airbus Helicopters and ADAC HEMS Academy announced the establishment of the joint venture HMotion, a new simulator training centre for H135 and H145 family helicopters. HMotion will offer a wide range of cost-effective training courses for helicopter personnel, including mission and critical flight training. Subject to approval by the relevant regulatory authorities, it is expected to be operational in early 2024.

TAILORING TRAINING TO MEET CUSTOMER NEEDS
Through a campaign of gathering customer feedback, Airbus has improved and expanded on its training and flight ops portfolio. With this new offering, Airbus has addressed a growing range of customer needs with solutions that reflect greater choice, tailoring and innovation. As one of the pillars in Airbus' HCare service offer in its HCare Store, the evolution in training reflects the overhaul of HCare one year ago to offer customers tailorable combinations of service plans—in the case of training, it includes a commitment to quality and to Airbus' high standards.

H135: FOUR MORE FOR SPANISH FORCES
Airbus Helicopters Spain has simultaneously delivered four H135s to the users of the 36-unit contract signed at the end of 2021 to supply the Armed Forces and State Security Forces. For the first time, the H135s of the National Police, Civil Guard, Air Force and Navy were brought together on 30 November, a historic day. With this quadruple delivery, 17 H135s have now been delivered to date, 11 of them in 2023.

Developments

NORWEGIAN AIR AMBULANCE UPS ITS ORDERS FOR DANISH MISSIONS
Norwegian Air Ambulance has ordered three H135s and two five-bladed H145s that will be used for life-saving missions in Denmark, following a tender the operator recently won in the country. Moreover, the HEMS operator will take delivery of two new H145s in 2024 to expand their fleet in Norway.

AIR RESCUE IN AUSTRIA BOOSTED
Airbus Helicopters and ÖAMTC Air Rescue announced a new contract for two H135s. The announcement follows an initial contract for five H135s signed at the end of 2020. The H135 is the benchmark for helicopter emergency medical service operators worldwide. It combines a wide, unobstructed cabin with excellent performance, range and payload capacity, as well as low sound levels.

LITHUANIAN LIFT OFFS
Airbus Helicopters has conducted two deals in Lithuania. One is the sale of two H125s to Lithuanian operator ASU BALTIJA—the first Airbus helicopters sold to a commercial operator in the country. Used for passenger transport and utility missions in Lithuania and other markets abroad, they will be the first two H125 family helicopters deployed in Lithuania, replacing helicopters manufactured in Russia. The second deal is between Airbus Helicopters and the Lithuanian State Border Guard Service, who have announced a contract for three five-bladed H145 multi-mission helicopters, expanding the service's fleet. These three additional H145s bring the total number of Airbus helicopters in service with the Lithuanian government to eleven, further strengthening Airbus Helicopters' position in this mission segment. The helicopters will be operated for a wide range of missions including search and rescue, disaster relief and medevac, border patrol, firefighting, transport of donor organs, and operational deployment of the Lithuanian Special Forces.

CONTENTS

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Bruno Even, CEO of Airbus Helicopters

"The voice of our customers and operators is vital. Their feedback drives our improvements."

2023 has proven that change comes at a fast pace. Crisis is becoming the new normal and there is pressure to adapt as quickly as possible. One area, though, remains consistent: our customers and operators. Their voice is vital, so we must listen to what they have to say and ensure that their feedback drives our improvements.

Many of our customers fly missions in support of the public and perform acts of heroism around the world on a daily basis. It is a source of pride that they have chosen our aircraft. SANPARKS, the South African National Parks Service, uses H125s to protect the country's biodiversity and ensure it is there for future generations. In France, Airtelis uses a fleet of H225s to combat the increasing threat of wildfires—a battle which many of our helicopters respond to worldwide. The Norwegian Air Ambulance Foundation not only supports the country's helicopter emergency medical services operations but uses a five-bladed H145 to continuously push the boundaries of what is possible, in order to save more lives and achieve better patient outcomes. These are shared values, as we both aim to pioneer to make the world a safer place.

Helicopters have long been an asset offshore. Hearing about the recent successful tests allowing crews to support floating wind farms again proves that helicopters can go where other vehicles cannot, in the most demanding of circumstances. We also hear about the role helicopters can have in ensuring history and heritage is protected. Photographer Christophe Beyssier's eye-catching images of a lighthouse restoration remind us why we're so passionate about vertical lift—and what it can help us achieve.

The year drawing to a close also allows us to take stock of our urban air mobility journey. The implications of Vertex will be far reaching for reducing pilot workload and increasing safety within vertical lift, and its achievements are a crucial milestone, especially for CityAirbus NextGen. Speaking of which, with every passing day whether it is on the prototype or as part of the infrastructure, something new is being built. As our Head of UAM, Balkiz Sarihan, notes, it is thrilling to witness a truly paradigm-shifting programme come together.

FEATURED ARTICLES

Guardian angels

From life-saving medical transport missions to keeping a watchful eye above towns and cities, they're there. From rescuing the injured and stranded from mountains to fighting fires and protecting the environment, helicopter operators fly missions which make the world a safer place.

Articles: Grant Duncan-Smith, Alexandre Marchand, Jörg Michel, Ben Peggie

Able to reach almost anywhere, helicopters enable rapid interventions that support the heroes flying in the most challenging circumstances, when there is no time to lose. This edition of *Rotor* shares the stories of the pilots, medical crew and leaders who are involved in these vital operations.

Pioneering for their patients

The Norwegian Air Ambulance Foundation introduced helicopter emergency medical services (HEMS) to Norway in the 1970s—a healthcare game-changer for a country with a mix of remote towns and major cities, often with climatic and geographic challenges. Secretary General, Professor Hans Morten Lossius, explains how the non-profit invests to increase positive patient outcomes.

1: Professor Hans Morten Lossius, Secretary General of the Norwegian Air Ambulance Foundation

2: The five-bladed H145 supports the foundation's vital medical research.

3: A paramedic examines a CT scan image.

4: The effectiveness of the medical cockpit has an important impact on securing better patient outcomes.

THE NORWEGIAN AIR AMBULANCE FOUNDATION WAS THE FIRST OPERATOR OF THE FIVE-BLADED H145. WHAT IMPACT DOES IT HAVE ON YOUR ACTIVITIES?

Hans Morten Lossius: Part of the foundation's role is to fund research and development. Over the last 20 years we have established a huge group of researchers. At any given time, there are approximately 25 PhD students, 15 senior researchers, including professorships, and higher academic positions. Research is mainly focused on HEMS activity, so we needed a realistic platform to conduct our research and the on-call helicopters are needed for patients. Norway is a country with 13 bases running medical transport 7 days a week, 365 days a year. For such advanced research it made sense to have the best and most modern HEMS platform, so we chose the new five-bladed H145.

WHAT ARE SOME OF THE PROJECTS THAT YOU ARE RESEARCHING?

HML: We see that our service does many neonatal transfers, premature children, often in a very fragile condition who are transported from district hospitals to the university hospitals for intensive care treatment. These transports are absolutely critical. When these small infants arrive at the university hospital they get into an intensive care unit with noise reduction, light reduction, controlled temperatures—a really controlled environment. However, during the transport in helicopter, there is noise, vibrations and changing temperatures. We need to look into the impact of the helicopter's environment on these infants, so we have a huge project with engineers, specialist doctors and crews looking into how to improve that transport. Looking at how to improve what we call the medical cockpit, the cabin of a HEMS helicopter, is a continuous focus for us.

WHAT ELSE HAVE YOU IDENTIFIED THAT WILL INCREASE EVEN FURTHER THE POSITIVE HEALTHCARE OUTCOMES FOR THE PATIENTS YOU ARE TRANSPORTING?

HML: We're looking into how on-board 5G coverage is for a helicopter. So, how the telecom companies can read director antennas to get better coverage for HEMS, because we are more and more dependent on 5G connections for lots of activities. For instance, when they do ultrasound, how can those pictures be transferred directly to hospitals, in flight where you're doing the ultrasound? We aim to both improve ultrasound conditions and the telemedicine connections for the ultrasound pictures. Another huge project we are working on is the CT scanner, fitting a CT scanner into a helicopter and integrating it into the medical cockpits of small- to mid-sized helicopters, like the H145. I should also mention that we are doing research on medical intervention called REBOA (Resuscitative endovascular balloon occlusion of the aorta) which involves placing a catheter into a major artery and blowing up a balloon to stop bleeding—we're looking at how to do that in flight.

YOU SIGNED A PARTNERSHIP WITH AIRBUS TO EXAMINE HOW ADVANCED AIR MOBILITY PROJECTS CAN WORK FOR HEMS—WHY IS THIS IMPORTANT FOR NORWEGIAN HEALTHCARE SERVICES?

HML: HEMS is vital and so is reducing our carbon footprint, so we want to examine ways of making operations more sustainable. We share many views with Airbus regarding the importance of regular HEMS and sustainability, so we are working together. We have more than 300,000 dedicated supporters—and that's out of a population of 5 million—so we have the continuing support of a huge group in Norway. That tells us how important the Norwegian population thinks the service is. People want to feel safe wherever they live, and they see health services as an essential part of this, now and in the future.

No mountain high enough for Austrian lifesavers after 40 years of operations

In July 1983, the ÖAMTC air rescue service started operations in Innsbruck with an AS355. Since then, the HEMS* operator has expanded its service throughout the whole country, offering its life-saving services to the Austrian population from the mountainous regions in the west to the plains in the east near the borders with Slovakia and Hungary.

1

Today, ÖAMTC Air Rescue operates more than 22 HEMS bases throughout Austria, all named Christophorus after St. Christopher, the patron saint of travelers. Of these, 17 are in operation all year round, while four are in seasonal operation, mainly during winter, to provide HEMS services to the country's more than 400 ski resorts. Since 1999, ÖAMTC air rescue has also been operating an H135 as an intensive care helicopter, which enables inter-hospital transfers of intensive care patients to facilities with the highest standards of care.

RELYING ON THE H135 FAMILY SINCE 1997

As one of the world's first operators of the H135 family, ÖAMTC has relied on the helicopter as the backbone of its missions since 1997. Since then, they have logged more than 212,000 flight hours, including 1 million take-offs and landings, and have flown more than 400,000 missions. One of the pilots who's contributed nearly 3,000 flight hours to these impressive figures is Robert Gallmayer, who also happens to be the head of the Christophorus 9 base in the Austrian capital of Vienna. He praises the H135 for its reliability, safety and ergonomics. He also notes that Helionix, the Airbus avionics suite that's on-board the latest version of the H135, plays a big role in ensuring mission success: "Helionix reduces our on board workload thanks to the high degree of automation, which relieves the crew and allows us to concentrate on our mission," says Gallmayer, who's been flying the H135 for ÖAMTC Air Rescue since 2010. "This includes IFR procedures, synthetic vision, 4-axis autopilot, automatic hover and many other features that make the H135 the perfect helicopter for HEMS missions." There is every indication that this joint success story will continue; in 2020, ÖAMTC air rescue again demonstrated its confidence in the H135 with an order for five more of these helicopters, the first four of which have already been delivered to the Austrian HEMS organisation.

FROM THE ALPS TO VIENNA

When asked what's special about HEMS operations in Austria, Gallmayer, who started his career as a helicopter pilot in the Austrian military, sums it up: "The variety of missions and terrain. From the high mountains to the eastern plains. From remote areas to the urban areas of big cities like Vienna. It's a unique combination."

2

The Christophorus 9 base in Vienna is responsible for around 1,800 of the ÖAMTC's 23,500 air rescue missions per year. "In a big city like Vienna, almost every landing is something special," explains Gallmayer. "We recently had a mission near Schönbrunn Palace, close to the famous Gloriette. This mission also sticks in my mind because the patient was successfully resuscitated and survived the incident unharmed."

1: Flying into action: boarding Chistophorus 3

2: A paramedic and their helicopter in the Austrian mountains

3: The H135 in the gardens of Schonbrunn Palace, Vienna.

3

FIGURES

40 years of air rescue missions:
- 1983 – 2023
- Around 435,000 missions
- 1 million take-offs and landings
- 212,000 flight hours (H135, from 1997)

Air rescue 2022 – figures:
- 21,934 missions
- 23,556 missions (incl. winter locations)
- 701 long line recoveries
- 1,047 night missions
- 11,000 flight hours

Air rescue 2022 – in the air and on the ground
- 67 pilots
- 390 doctors
- 160 rescue personnel
- 66 engineers and maintenance technicians
- 55 back office staff
- 22 locations (17 year-round, 4 seasonal, 1 intensive care helicopter)
- 31 helicopters

*HEMS = Helicopter Emergency Medical Services

H135

Spain's eyes in the sky

Chief Inspector David Díaz Martínez has been flying for Spain's Policia Nacional for nearly 15 years, amassing over 2,000 flight hours. He tells *Rotor* about some of the missions that the force's fleet of H135 helicopters fly to keep the public safe.

It is around 6pm in Madrid and the sun is starting to set over the Spanish capital. With the second-largest population in the European Union and a vibrant culture, the city's nightlife is beginning to stir. Office workers file onto the streets and begin to fill tables at bars and restaurants. Amidst all this hustle and bustle, it is not difficult to believe that nightfall might also tempt those engaged in illegal activities to attempt to conceal themselves under the cover of darkness. For the city's police force, night time surveillance is an important part of their activities and there is much to do. But they have an ace up their sleeve—the fleet of H135 helicopters.

ABILITY TO SEE IN THE DARK

According to Chief Inspector David Díaz Martínez, surveillance missions represent four fifths of the work undertaken by the Policia Nacional's helicopter pilots—who accrue approximately 4,000 flight hours per year. "We mainly use helicopters as a means of image capturing and this accounts for perhaps 80% of their flights. This can be used for public safety during demonstrations, ensuring public order, security for big events, visits of VIPs, or even a European Cup final, which was the case a short time ago." One reason Díaz Martínez and the Policia Nacional's other pilots appreciate the H135 so much is the helicopter's performance. The Helionix avionics significantly reduces workload for the pilots, allowing them to focus on their missions. "Being able to work at night without any worries is very important," notes Díaz Martínez. "In terms of public order over Madrid, we have to fly a lot when it is dark and the Helionix avionics reduces the workload for the pilot. When we are flying over cities at night working at low altitude with, for example, riots or any other matter for the police then anything that allows you to keep an eye on the mission and know that the helicopter is going to be maintaining the altitudes, the speeds, is a marvel for us."

A LONGER ARM OF THE LAW

While the Policia Nacional are primarily responsible for policing in Spain's urban areas, it is possible for work and investigations to take them outside of the city. The H135's watchful eyes have also provided discrete surveillance in the Strait of Gibraltar. On such missions, the helicopter's range also offers a significant advantage. The helicopter's ability to fly further can also support other important police activities. "On a transfer of a person of interest from Mallorca to Madrid, we were able to make a direct flight out from Madrid. The H135 allowed us to go out with four people on board and do the mission with total normality," recounts Díaz Martínez. Back in Madrid, the H135 is also proving itself in a city at high altitude, which can mean challenging environments for helicopters. In such circumstances circumstances, for critical public security missions when every second counts, a pilot needs to be able to trust implicitly the aircraft that they're flying. Fortunately the H135 delivers plenty of power. "We are at 2,600 feet above sea level here," explains Díaz Martínez "and the helicopter's ability to take off with the maximum weight is very noticeable. Having that extra power we are able to work in a more efficient way."

1: Chief Inspector David Díaz Martínez at the controls of the H135

2: The Policia Nacional's fleet of helicopters are nicknamed 'Angels'.

3: An Angel keeping a watchful eye over the Spanish capital.

HIGH FLYING HEROES

Spain's Guardia Civil and their H135s

La Guardia Civil has a fleet of 39 Airbus helicopters at its disposal. Performing a range of missions from search and rescue to law enforcement, their life-saving operations depend on close collaboration and understanding between pilots and medical crew. Commander Santiago Veloso and Captain David Blázquez explain to *Rotor* how the H135 helps when it's life or death.

1: Commander Santiago Veloso (left) and Captain David Blázquez (right) need to have complete trust to perform their rescues.

2: Winching an injured patient aboard the Guardia Civil's H135

3: The H135's 90m winch can support 230kg—enough for the rescuer and the patient.

4: An H135 in action—the Guardia Civil has a fleet of 39 Airbus helicopters

As a mountain rescue specialist with nearly 25 years of experience with the Guardia Civil, Captain David Blázquez makes the point that for urgent rescue missions, an implicit level of mutual trust is necessary between the pilots and medical crew. Every member of the team is performing complex manoeuvres, often when the very life of a patient is in their hands. "The relationship with the pilots becomes a little more than professional, because they are a fundamental element for us, for the rescue, and on many occasions, if we could not count on them, we would not have a rescue—there would be a fatality. That's why we see the pilots and helicopters as guardian angels," explains Blázquez. For Commander Santiago Veloso, a pilot with 2,000 flight hours on the H135, a similar level of confidence is required for pilots in the helicopter they are flying. Fortunately the H135's cockpit has features that allow him to focus on the mission as much as possible. "The H135 incorporates a series of systems, especially in terms of preventing collisions both with obstacles and with the terrain, which has greatly eased the pilot's workload. This has an impact both on the comfort or ease with which the flight is carried out, and also on safety, because by relieving the pilot's workload, the pilot is able to fly more easily."

THE RIGHT STUFF FOR RESCUES

The Guardia Civil rescues up to 150 people per year with its H135 helicopters, which have a range of equipment at their disposal to support these life or death missions. Particularly important is the 90m winch, which Blázquez describes as an essential feature for mountain rescues. "It can support 230kg in normal conditions, giving us a wide margin to lift an injured person and a rescuer." As a pilot, Commander Santiago Veloso agrees, pointing out that for mountain rescue, a winch can enable a rescue in particularly challenging conditions. "Landing [to load the patient] is preferable because at the end of the day using a winch is the most vulnerable situation for the helicopter to be in. So we use the winch more when we are in ravines or close to cliffs where it isn't possible to perform a low stationary or what we call a partial support."

A RACE AGAINST TIME

When asked if there is a particular mission that stands out for him, Blázquez does not have to think for very long before responding. "We had a case about four or five years ago, in the mountains of Segovia, where we had been looking for a missing person for several hours with the helicopter and just as we were about to refuel, they were found by some colleagues on foot. Our first thought was that they had died, though it turned out that they were alive, although there was no time to lose. We had to turn the helicopter around, get there and make the rescue—with supply tanks that only had about 20 minutes of fuel left." The operation could not be carried out with the winch so the helicopter was put in a stationary hover just off the ground and the wounded person was loaded on board directly by stretcher, as fast as possible. Emphasising the gravity of the situation, Blázquez continues: "We were asked to transfer them directly to the hospital because of the urgency and we could only get the patient down from the mountain and land with the fuel we had left. It was a very difficult thing to do." As he finishes recounting this challenging rescue, he returns to his original point. "Like I said… guardian angels."

Parks and aviation

David Simelane is the chief pilot of SANPARKS, the South African National Parks service. With a fleet of three (soon to be four) Airbus H125 helicopters and a team of 11 people (including four pilots), they help safeguard the biodiversity and wildlife in Kruger National Park, as well as protect the animals from poachers—preserving the park for both South African citizens and international visitors.

1: David Simelane, chief pilot of SANPARKS, the South African National Parks service

2: In the cockpit: low level flying is required for anti-poaching operations and recording animal populations.

3: An Ecureuil above a herd of buffalo. The H125 Ecureuil performs a range of operations for SANPARKS.

4: Park rangers stand in front of the H125.

WHY DOES THE H125 MAKE SENSE FOR SANPARKS?

David Simelane: Our responsibility is to make sure that we provide the aerial support that is required over these 2 million hectares. We are also expanding our footprint outside the borders of the Kruger National Park, and servicing the rest of SANPARKS' 19 parks. We use the H125 for its agility, luggage space, the power that the helicopter has, and its versatility. We can convert from a utility-type machine to a VIP machine fairly quickly. The general ease of piloting is also an attractive feature.

DOES THE HELICOPTER PLAY A ROLE IN PROTECTING THE PARK ANIMALS?

DS: Over the past decade we have been busy from an anti-poaching perspective, where we have been pummeled left, right and centre. We have been standing our ground and are happy to say there has been a reduction in poaching over the past couple of months. We completed about 500 hours of flying between the months of August and September completing a census, where we go through the Kruger National Park with a fine-tooth comb, making sure that we have the right population of rhinos and elephants. We are often flying low level, in the vicinity of a lot of birds and nature. When we're on anti-poaching missions, we're flying alongside various other aircraft. We have previously found an orphaned rhino, by the virtue of the fact of the mother having been poached. We have to sedate the rhino.

Depending on the size we either lift it by cargo hook, or we have to put it in the back of the helicopter.

DO YOU OFTEN USE THE HELICOPTER FOR MEDICAL AND VETERINARY MISSIONS?

DS: The Airbus H125 is the best platform for us here at SANPARKS. We are a service provider to the different SANPARKS departments ranging from scientific services to ranger services, conservation services to veterinary wildlife services. If we're going to be darting rhinos whilst doing de-horning, we've resorted to have to de-horn all of the rhinos that we have in the Kruger National Park. We have to fly with the doors slid to the back, and be able to put the vet in position to dart. We have rangers that patrol on a regular basis, and sometimes there are incursions with wild animals. I've personally experienced a ranger who had been trampled by a buffalo. We urgently had to rush a doctor to the scene. Luckily the ranger survived the contact with the buffalo and is back at work, thanks to the helicopter and quick response of the doctor and aircrew.

HOW DOES THE H125'S PERFORMANCE SUPPORT THE OPERATIONS?

DS: The environment we are flying in is an unforgiving environment, so we prefer to have a uniform fleet, ensuring all pilots are familiar with the same helicopter, providing consistency. Ease of flight with the forward looking indicator (FLI) enables us to concentrate on the necessary external factors, which are many in this environment. The H125 is very useful in this environment. From a density altitude (DA) perspective, we often exceed a DA where many other helicopters would struggle. We don't have that many issues when we have a full complement of passengers and full fuel in 40 degrees Celsius, which we often have in the Kruger National Park in summer. In terms of census, we are able to fly with the doors open, which provides us with a full view and that is really important for this activity. The ability to load as heavy as 1,400kg is by far one of the biggest advantages with this particular helicopter in our fleet.

Airtelis rises to the challenge

Every summer, Airtelis hires H215 and H225 water bombers to work alongside French Civil Security aircraft. The helicopters work perfectly in tandem with fixed wing aircraft.

2022 was one of the worst years for wildfires in France, with almost 80,000 hectares going up in smoke. In the wake of a dramatic summer, the government decided to reinforce its fleet of water-bombing helicopters (hélicoptères bombardiers d'eau, HBEs) by turning to private operators. The request for proposal launched in October 2022 was for 10 helicopters, including six heavy helicopters, for 2023 to 2026. "We secured this contract by forming a temporary grouping of companies (Groupement Momentané d'Entreprise, GME) with the SAF(1)," explains Laurent Giolitti, Executive President of Airtelis. "Under the terms of the contract signed with public authorities, we each provide three aircraft from the Super Puma family for the fire season, from the beginning of June to the end of September. For our part, we own two of the aircraft we provide, while the third is leased from our partner Heliswiss."

POWERFUL AND VERSATILE

Airtelis is a long-standing user of the H215 and H225 in France, and already owns four helicopters (see box). Its blue and white helicopters are regularly used at lifting sites, and one has also been leased to the French Air Force since 2017 to train its H225 crews. "Our helicopters were also well known to the French fire service, as we have been under contract with French Civil Security since 2020," notes Laurent Giolitti. Powerful and versatile, and particularly well suited to slinging heavy loads (up to 4.7 tonnes for the H225), the H215 and H225 make ideal HBEs. The helicopters are equipped with bubble doors to improve pilot visibility, cable cutters and versatile air inlets to protect the engines. "In the HBE configuration, we add radios to communicate with the fire brigade and a siren to alert them of the drop," he adds. The work is done with a 4,000 litre capacity water bucket, fitted with an integrated pump and carried by a 30m or 40m long sling. In this configuration, the H225 offers around 1 hour and 15 minutes of autonomy. "Our pilots in command are HESLO(2) qualified and train with the fire brigade before the fire season," continues Laurent Giolitti. "In flight, they are always joined by personnel from the French Civil Security who liaise with the troops on the ground and give operational instructions." Using the water bucket with a sling makes it possible to reach water in deep ravines and valleys, while still allowing extremely precise drops close to the flames. This makes the HBE ideal for fighting emerging fires or 'beating down' existing ones. Its versatility also means it can move equipment or firefighters if necessary. Thanks to their speed of response, flexibility of use and the fact that they can be based extremely close to high risk areas, with a minimal logistical footprint, HBEs are an excellent complement to Canadair CL 415 and Dash 8 water bombers. The contracts signed with the French Civil Security in 2022 also specify that the HBEs can be deployed outside France, so the French fire brigade's satisfaction now goes beyond borders.

(1) SAF: Secours Aérien Français (French Air Rescue)
(2) HESLO: Helicopter External Swing Load Operation

1: Laurent Giolitti, Executive President of Airtelis

2: The H215's bucket can hold 4,000 litres of water.

3: An H225 douses the flames.

4: The winch can help firefighters escape extreme conditions

AND FOUR FOR AIRTELIS

The company based in Avignon currently has four Super Puma family helicopters: the two H225s aand one H215 it currently operates were joined at the beginning of November 2023 by an additional H225 purchased second hand. The helicopter, which entered into service in 2014, had an initial, relatively inactive career in the offshore oil and gas industry, with just 900 flight hours to its credit. It will be rapidly adapted to utility activities and benefit from a PBH per flight hour maintenance contract with Airbus Helicopters.

Firefighting

Helicopters make the difference by assisting first responders whatever the task. Supporting the fight around the clock - in all types of terrain and in all types of weather, day and night.

H125

THE FIRST ON THE SCENE

Battles blazes at the earliest opportunity and means nowhere is out of reach for firefighters.

Delivering up to **25,000** litres of water in **2h 30min** of flight

H145

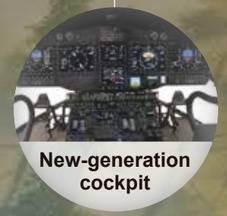
BORN TO SAVE LIVES

Saving lives whilst battling flames, day and night with an extensive array of equipments.

H215

HEAVY SUPPORT FOR FIRST RESPONDERS

The helicopter's excellent payload allows it to transport as many as 20 firefighters and its rugged design means it can handle the most challenging conditions.



96,000 litres in **2h** operation

24 rotations

H225

THE DISASTER RELIEF GUARDIAN ANGEL

Tailored to rescue firefighters in the most extreme conditions, it also makes the difference with powerful and precise water bombing.

Infographic: **BeatrizSantacruz.com** and **Airbus**

NH90: submarine hunter

THE EFA: 20 YEARS OF TIGER SCHOOL

The Franco-German School (L'École Franco-Allemande, EFA) at Le Luc en Provence, which trains Tiger crews from both nations, was created as part of an ambitious joint project backed by a strong commitment from Airbus Helicopters (Eurocopter at the time). And now, 20 years after it was founded, there is no doubt about its success in both human and operational terms.

Article: Alexandre Marchand

"It was an honour for me to be the first Head of the EFA," recalls Alain Salendre, who joined Airbus Helicopters after leaving the military in 2006. "Everything had to be built from scratch and our management put all their trust in us. We were able to do what we thought was best for both countries, and it was an intense experience for everyone involved." Aside from the arrival of the first aircraft and simulators, which were highly advanced for their time, Alain Salendre insists: "The EFA is above all a human success story. It's a project that has brought two cultures and two populations closer together. The school has been very well received by the local community and authorities, and our German partners have had no trouble integrating." Driven by this Franco-German determination, military cooperation has also been a complete success. Discussions have been, and still are, ongoing and sincere, with a view to furthering integration.

1: A Tiger on the runway before the EFA's 20 year anniversary.

TRAINING EXCELLENCE PROVEN TIME AND AGAIN

Twenty years on, the EFA has matured. The excellence of its training has been proven time and again on battlefields from Afghanistan to Africa, where the Tigers have consistently shown their technological superiority, firepower and tactical impact. So much so, that no operation conducted jointly with ground troops is conceivable today without a detachment of combat helicopters. The EFA currently has seven French HAD Tigers and as many German KHT Tigers. Its cruising speed enables it to train around 80 people each year: pilots, captains and patrol leaders, as well as Flight Crew Simulator Instructors (FSIs). For maintenance personnel, type training takes place at the Franco-German Centre for Technical Logistics Personnel in Fassberg (Germany). So, "in this unique place and environment, French instructors train French crews while their German counterparts do the same for their crews," explains the school's current Chef de Corps, Lieutenant Colonel Olivier Mallet. This makes a lot of sense, given that "the HAD and KHT mission equipment differs. That said, the areas where pooling is applied on a day-to-day basis are extremely vast." For example, since 2021, all pilot assessment flights are taken in Franco-German patrols. The same applies to patrol leaders, for whom diversity and cooperation are demonstrated in the simulator, by bringing complementary HAD and KHT patrols together in the same tactical scenario. "For the past two years, we have been qualifying all our trainees to shoot at the Canjuers camp during bi-national shooting campaigns," adds Lieutenant Colonel Mallet. To complete this picture of cooperation, witness the latest example of synergies put in place, namely the activation of computer-assisted courses given in English for trainees from both nations. If figures are anything to go by, the EFA Tiger has passed the symbolic milestone of 1,000 people trained, and "day-to-day life is undeniably 100% Franco-German synergy," concludes Lieutenant Colonel Mallet.

2: Training pilots to optimise Tiger's manoevrability is an asset for French and German air forces.

3: Lieutenant Colonel Olivier Mallet, the school's current Chef de Corps and Alain Salendre, first Head of the EFA

4: Two Tigers conduct firing exercises.

INDUSTRY HAS PLAYED ITS PART

The Tiger programme has played an essential role not only in the creation of Eurocopter, but also in structuring cooperation between the German and French armed forces. "Over and above the contractual terms, we benefited from Eurocopter's proactive and effective presence," recalls Alain Salendre. "On-site technical assistance helped us a great deal during the ramp-up phase, and we had direct access to the Design Office whenever we had technical queries. Eurocopter was genuinely determined to make this cooperation a success."

CITYAIRBUS NEXTGEN LEAVES NO MILESTONE UNTURNED

CityAirbus NextGen's imminent power-on is the latest in a year of exciting developments. An update on the electric vertical take-off and landing (eVTOL) prototype with Balkiz Sarihan, Head of Urban Air Mobility at Airbus.

Article: Heather Couthaud

"Someone asked me about our focus for this year, and I said, 'we're going to build, build, build.' This is what we've done," says Balkiz Sarihan, smiling. At Airbus Helicopters' Donauwörth facilities, the CityAirbus NextGen was being assembled as she spoke. "Anytime we arrive on site, you want to run and see what else is new."

NOT JUST THE VEHICLE

CityAirbus NextGen has taken the best of Airbus' helicopter, commercial and unmanned aerial vehicle (UAV) know-how to produce an optimised all-electric, winged, vertical lift architecture. Yet "because the advanced air mobility (AAM) industry is so new, we focus on the vehicle's 'ecosystem': everything that will enable its introduction into service," says Sarihan. Airbus invested in a dedicated test hangar to mature disruptive technology—especially subcomponents—and conduct the first phases of the flight test campaign. The latter were the subject of Airbus' extensive capabilities, including 'pôles of expertise' at which technobricks developed simultaneously. The battery pack by Airbus Defence and Space and propellers made in Paris Le Bourget have been tested and delivered. The innovative flight control system, in development with the Vertex project (see page 30), underwent successful testing in October on the FlightLab. "The simplicity we want to include as part of this eVTOL design is key," says Sarihan, who stresses that CityAirbus NextGen will initially roll out as a piloted vehicle even as it is envisaged to be as easy to fly as possible.

THE MORE THE MERRIER

Simplicity is vital, and so are partnerships. Beyond developing the vehicle architecture and technobricks, to test the product's flight ecosystem Airbus created the Bavaria-based Air Mobility Initiative (AMI), the first working group of its kind, with key partners such as Munich International Airport, the City of Ingolstadt and the talents of Airbus Urban Mobility, as well as research institutes and universities. Teams are tasked with developing VTOL flight paths and an advanced unmanned traffic management system. They also created the U-space prototype, which showcases scenarios such as how to prioritise emergency flights in a crowded airspace of drones, VTOLs and traditional vehicles. The airspace integration of vertiports at airports and in urban areas is also being examined.

LAYING THE GROUNDWORK (LITERALLY)

How ground infrastructure will accommodate VTOLs is also being looked at. Will the vehicle take off and land airside or landside? A design team at Munich Airport is working with Airbus on the first designs of a vertiport, while two collaborative projects are analysing the integration of vertiports in different environments. Nor has Airbus forgotten to include people in the simulation. AMI projects also focus on the passenger experience, imagining their needs while in transit and soliciting preferences from user studies. To develop the support and services needed when CityAirbus NextGen takes to the skies, Airbus' experience supporting a fleet of vehicles and operators around the globe is "what it means to be a trusted brand," says Sarihan. "When our customers use that vehicle as part of their business, they can rely on the entire support system." Airbus depicts an AAM ecosystem as holistic, from MRO, air traffic management, and service to ferry flights, drawing on the company's vast analogous knowledge in these areas. "This is the first time in modern aviation history where we are building so many elements in parallel," says Sarihan. But, she stresses, Airbus is conscious of its responsibility as a pioneer "to introduce the right product for the right market at the right time and—I cannot emphasise this enough—with the right technology maturity."

1: Balkiz Sarihan, Head of Urban Air Mobility at Airbus

2: The CityAirbus NextGen will provide sustainable connectivity but requires a new ecosystem.

3: AMI sees teams developing VTOL flight paths and an advanced unmanned traffic management system.

ONE FLIGHT CLOSER TO THE FUTURE

At the end of October, Airbus performed successful tests of its Vertex project, significantly advancing progress toward a fully automated helicopter flight.

Article: Heather Couthaud

1: Alexandre Gierczynski, Head of the Vertex demonstrator at Airbus UpNext

2: Vertex was flight tested on Airbus Helicopters' Flight Lab.

3: Vertex's first flight, a mere two metres above the ground, is a huge step for flight safety.

4: The team following a successful test.

5: Flight Test Engineer, Setareh Taheri, at the controls.

Outside the Airbus Helicopters hangars, a test pilot clutched her handheld tablet in an extra-firm grip. She was, after all, holding the controls to the H130 she was in, currently hovering two metres above the ground. The steady hand belonged to Setareh Taheri, Flight Test Engineer for the day's flight test. The H130 was the FlightLab, Airbus' technology demonstrator enlisted to assess equipment developed over three years by Airbus UpNext. This entity's remit to evaluate and mature disruptive technology had given rise to Vertex, a project to validate simplified mission control for vertical take-off and landing (VTOL) vehicles. Vertex technologies will later be implemented on the CityAirbus NextGen prototype or in conventional helicopters.

SEE, SENSE AND REACT

Specifically, today's flight was one of ten testing the sensors, computer and human-machine interface (HMI) that would enable the start-to-finish mission to be system-controlled with a tablet. This would involve lift-off, hovering, and taxiing within a two-metre-wide corridor at seven feet, then the aircraft would accelerate and climb—and next fly the complete cruise phase with turns—before coming to land at a spot visually selected by the pilot. Hence the sensors dotting the FlightLab's fuselage: LIDAR to scan the environment in 3D and detect obstacles, cameras to analyse key patterns in the image to identify things like landing zones (in today's case, the system had been trained to recognise the zebra crossing-like threshold of the runway). Inside, vast computational power included new avionics that were able to work with the data sent by the LIDAR and cameras. And a new HMI comprised just a primary display and that all-important touch tablet*.

DEVELOPMENTS FOR A SAFER FUTURE

As flight testing proceeded, it was Vertex's autonomous functions that certainly upped the cool factor. The display shows, for instance, when the flight is under Vertex's control (coupled) or if the pilot has taken over. Green lights mean it is following the mission as designed; it switches colour when a human manually changes the trajectory via the interface. A feature called 'proposition of avoidance' (of an obstacle) requires a pilot to validate it; otherwise, the system brings the aircraft to a hover at a safe distance. And the list goes on. If all this seems headline-grabbing, what ought to stand out are the safety benefits, some of which may find their way onto the current helicopter range as well as future products, particularly the obstacle detection in helicopter low level flights. The HMI interface also is significantly simplified and consists of several layers, with a display showing altitude, height (ground level) and flight route overlaid on 3D terrain graphics. A smart radio displays the most likely frequency a pilot will need during the flight, for a reduction in workload. 3D terrain superimposed with LIDAR and camera imagery enhances situational awareness. If the aircraft is too close to the ground, Vertex's system increases the altitude. All these functions contribute to reducing pilot workload, hence increasing flight safety. "For urban air mobility, the flight control system must ensure the vehicle can follow corridors, function in a safe flight envelope and be reactive," says Alexandre Gierczynski, head of the Vertex demonstrator at Airbus UpNext. There is now no doubt: it can.

* For the purposes of the test, the touch tablet had two joysticks to ensure the pilot had physical input as well as tactile in the event of vibration on board the aircraft.

SUCCESS!

HOIST MISSION FOR FLOATING WIND TURBINES MEETS ALL GOALS

In a world-premiere trial, Airbus Helicopters and partners teamed up to show that helicopters are an important asset to support floating wind farms.

Article: Heather Couthaud

Foam streaked breaking waves and hoist lines whistled in the wind. Yet the helicopters were stable as the team attempted to land technicians atop a floating wind turbine in the Hywind Tampen wind farm operated by energy provider, Equinor, off the coast of Bergen, Norway. On 12 October, an H135 and an H145, from KN Helicopters and HTM Helicopters respectively, hoisted cargo and two crew members onto the nacelles of—yes, floating wind turbines—and what's more, in the rough autumn conditions (30 knots of wind and sea state 6) they'd set out to test. The day before, they lifted cargo onto the nacelle in almost 50 knots of wind and sea state 6. It had taken a year to get here. In late 2022, Equinor agreed to hold the trials in Hywind Tampen, a floating wind farm already producing electricity for nearby platforms.

Excitement built as the Airbus-led team foresaw data from real-world conditions: weather, air traffic, harsh sea states and the operational turbines' behaviour.

STRINGENT PRECAUTIONS

The logistics involved a special permit (Air Operator Certificates) from the Norwegian aviation authority, safety audits, risk assessments and standard operating procedures, in addition to extensive briefings for all crew members. Having highly experienced flight crews was a must. HTM and KN Helicopters, of Germany and Denmark respectively, both leading providers of helicopter hoist services for the offshore wind industry, loaned their pilots for the test flights. "We've been hoisting to bottom-fixed offshore turbines for many years," says Alain

Vigneau, Head of Offshore Wind Market at Airbus Helicopters, regarding missions to offshore wind farms. "Now we want to demonstrate a helicopter's capability in connection to floating turbines." Here on this blustery day, they would do just that. Even in the North Sea's five and a half metre-high waves, conditions were challenging but feasible.

"THE LIMIT OF WHAT'S POSSIBLE"

With wind farms moving further from land, the rush is on to install these 250 metre-high floating structures on supports moored to the seabed. Hywind Tampen is a unique set-up using 11 wind turbines 110 NM from shore to generate electricity to power its oil and gas platforms. But how to get a technician to the wind turbines, far from land, when waves and currents make it difficult for marine craft? "The conditions were at the upper limit of what is possible but we proved we could position the technicians on the turbine in a safe and efficient way," says Bernd Brucherseifer, Managing Director and Pilot at HTM. With 12 GoPro cameras on the helicopters, an H135 from KN Helicopters hoisted a cargo load onto a nacelle atop turbine No 2. Next, an H145 from HTM hoisted two passengers onto the nacelle of turbine No 5. "Today we demonstrated we could safely hoist to and from floating turbines even in high sea states," says Martin Knudsen, Chief Pilot at KN Helicopters. 'Safely' is certainly the operative word when assessing how to send technicians to turbines. A helicopter can transfer personnel in higher seas than marine vessels and in less time. "The helicopter is the only reasonable means to deploy personnel in this sea state," says Christopher Brons-Illing, Senior Engineer Operations at Equinor, one of the trial's organisers and part of the hoist team. "I'd definitely do it again." It all means less downtime for the turbines and more active use of technicians' time—and possibly—a sprightlier technician at the end of the trip. Footage from the cameras, plus motion data from the turbines, are being analysed and will be shared with the industry to mature standard operating procedures for hoisting to floating turbines. A collective effort that augurs well for this emerging technology for renewable energy production.

1: Getting ready to be lowered onto a 250 metre-tall floating wind platform

2: Even in 50 knots of wind, the helicopter remained stable.

3: An H145 in an offshore wind farm, 110 nautical miles from the shore.

4: It was possible to hoist to and from the floating wind platforms.

TO THE LIGHTHOUSE… ON AN H125

After spending part of the COVID pandemic locked down in Africa, merchant navy captain Christophe Beyssier decided to refocus on his first love of photography when he returned to France. Passionate about capturing images of people at work, Beyssier explains how a helicopter opened his eyes to new projects.

Article: Ben Peggie

1: Christophe Beyssier

2: Touching down at Tévennec

3: Sling loading material with Tévennec's lighthouse in the foreground.

4: Beyssier is inspired by industry and building sites—like this cargo ship transporting wind turbine blades.

"What interests me is industry, building sites, that's what excites me and what I want to capture. Whether it's an incredible restoration site, or the construction of wind turbines at sea, I'm inspired by rather extraordinary sites and I enjoy telling the stories of people who work there." Beyssier is sharing which subjects he is most passionate about in his photography and with an increase in offshore wind farms being built, it is likely that he will have plenty of stories to share. "Every day, technicians are sent out to work on wind turbines, either to build them or do maintenance, and I'm being asked more and more to go with the teams to document their work," continues Beyssier. "I coordinate with the crew to find the best position for the light and send the drone to take aerial images of the wind turbine construction." One recent project that particularly caught Beyssier's attention was the Tévennec lighthouse restoration in Brittany. This opportunity came his way thanks to an H125, with a pilot he'd previously collaborated with inviting him to document the work that would be undertaken.

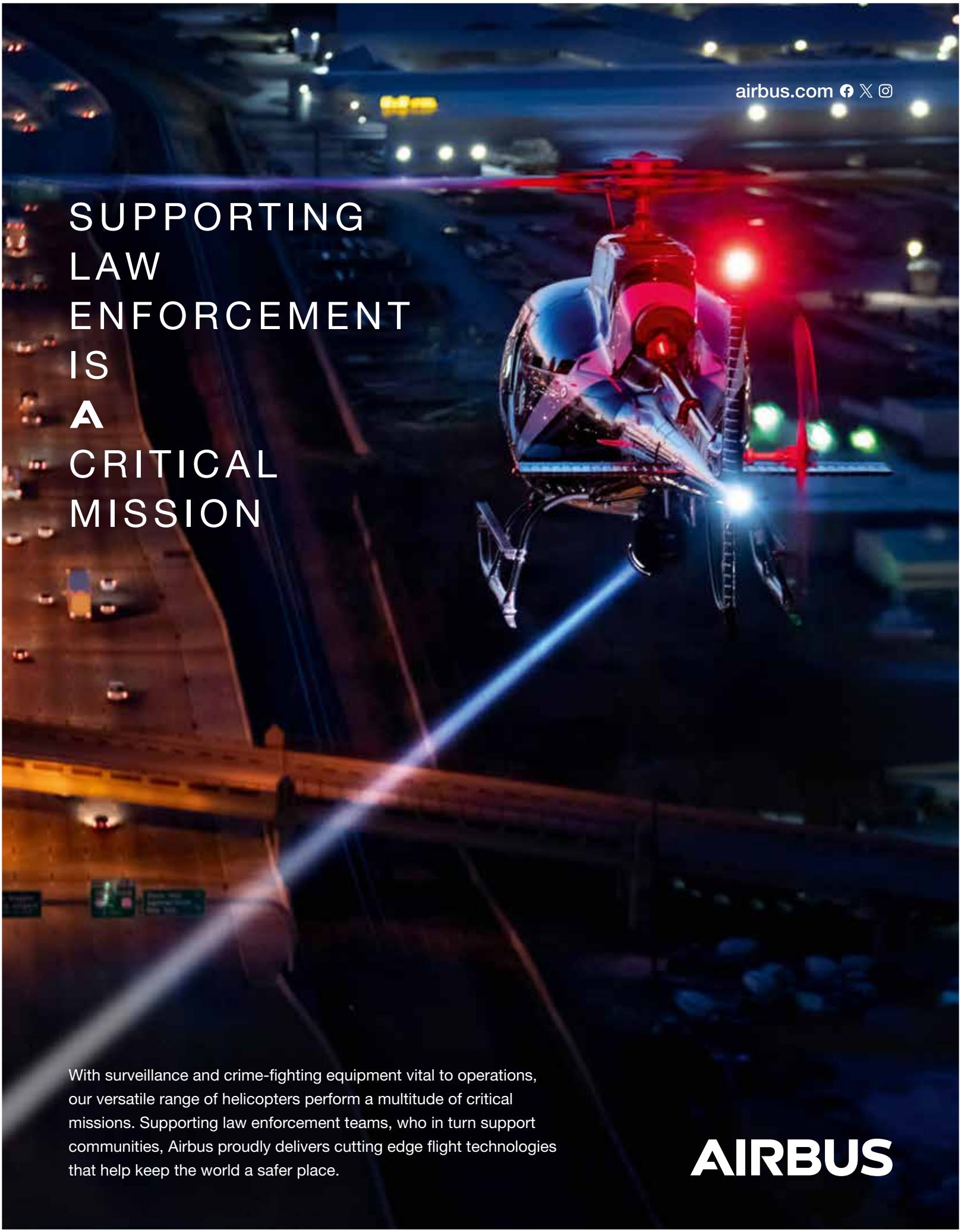
THE LIGHTHOUSE OF THE DAMNED

The lighthouse was built between 1869 and 1875 and sits on a remote rock in the Atlantic Ocean, off the northwest coast of France. The lighthouse lantern is 11m from the base, but in all, since it's on a rock, it rises 28m above sea level. "It was manned until 1910, but it's in an area where there's a lot of wind and a lot of currents. There were many legends of the lighthouse being cursed, or damned and keepers not wanting to stay there—even being driven insane, hearing eerie ghost-like winds as they lived there in solitude," says Beyssier. In 1910 the lighthouse was automated and there was no keeper. The French Lighthouse and Beacons Administration continued to maintain all the lighthouses, but over time the roof began to deteriorate. "Water was seeping in, there was a lot of damp, the wooden framework was rotting, the boards inside were rotting, the partitions, the wall cladding, everything was starting to rot. The first phase in restoring this lighthouse, which was essential, was to redo the roof," explains Beyssier. The photographer was roped in to capture the renovations and there was evidently much to do.

ROCK OF PAGES

To transport the crew and material to the rocky and remote island, a helicopter was the best option, which proved to be an inspiration to Beyssier who felt the project deserved to be remembered. "I said to myself: 'There's a story to tell here,'" he notes, "because, on the one hand, it's about restoring maritime heritage, the lighthouses, and at the same time, it's about the helicopter giving access to an isolated site, carrying people and heavy loads. I thought it would be interesting to write a book on the subject." The book is titled *Levage au phare maudit – L'hélicoptère au service du patrimoine* (Lifting the cursed lighthouse – the helicopter at the service of heritage). With the photos taken, the next step is printing and Beyssier is currently raising funds to publish the work. Consisting of stunning photos that cover both the history of the lighthouse and the important role the helicopter played in the project, the story covers each step of the restoration. "I end the book with more of a human side, the key stakeholders in the lighthouse, and some people have written a short text to explain what this project meant to them and why they found it exceptional."

To follow Beyssier's journey and find out more information about the book, follow him on social media:
LinkedIn: https://www.linkedin.com/in/cbeyssier-photography/
Website: https://photographe-offshore.com/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