

Rotor

BY AIRBUS HELICOPTERS

MISSION

The H145 protects
from above

BEHIND THE SCENES

HForce's
powerful side

LOGBOOK

Florida EMS gets a vital
boost from the H155



The future is now



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FEATURED ARTICLE The future is now



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© Lorette Fabre

After five years at the head of Airbus Helicopters, and at the point of taking up my post chairing Airbus commercial, it is not without emotion that I address all of you for the last time from the editorial page of our magazine, Rotor. Many of you know of my profound devotion to helicopters and the extraordinary missions that they help carry out.

But it is with a great deal of confidence that I pass the baton to Bruno Even. Bruno is at once a very respected manager and an experienced professional in our industry. I am convinced that he will continue Airbus Helicopters' transformation and manage our company's development with success.

The challenges are no small matter. They

“Bruno Even will continue Airbus Helicopters' transformation and manage our company's development with success.”

Guillaume Faury

are also opportunities to innovate and to meet the ever more demanding expectations of our customers and partners. The digital revolution will be for Airbus Helicopters – as for the whole of Airbus – a considerable lever of advancement through the digitisation of our operations, products and services. Data management will allow us to progress in all domains, starting with the most important: safety.

I am now joining the fascinating sector of commercial aviation, but be assured that my attachment to the rotary wing world will always remain with me. Working with you has been a real pleasure for me and a great privilege, and I will continue to follow you with the utmost interest.



SINGAPORE

8 February 2018

**First flight demonstration
for the parcel delivery
drone, “Skyways.”**



Watch the video
on Rotor Online.



QATAR

STATE OF QATAR SIGNS CONTRACT FOR 28 NH90S

Qatar signed a contract for the purchase of 28 NH90 military helicopters on the occasion of DIMDEX, Qatar's biennial defense exhibition. The agreement, which includes 16 NH90s in tactical transport (TTH) configuration and 12 NH90s in naval (NFH) configuration, will support the country's plan to modernise their military helicopter fleet. As part of the plan, Qatar will receive 16 H125 light single-engine helicopters in training configuration for operation by the Qatar Armed Forces Air Academy.

Leonardo will act as prime contractor for the programme management with the end customer, while Airbus will be responsible for the final assembly and delivery of 16 NH90 TTH aircraft from its facility in Marignane (France). Leonardo will be responsible for final assembly and delivery of the 12 NH90 NFH helicopters from its Venice – Tessera facility in northern Italy.

USA

51 ADDITIONAL UH-72A LAKOTAS FOR THE US ARMY

Airbus Helicopters, Inc. has received two contracts valued at approximately \$389 million to deliver 51 additional UH-72A Lakotas for the United States Army. The contracts highlight the US Army's confidence in the product and the growth capability of the Lakota programme.

The two new contracts include the UH-72A production aircraft, associated technical and flight operator manuals, and programme management for the Initial Entry Rotary Wing mission at Fort Rucker and for the Army's Combat Training Centers.



MEXICO

VOOM'S HELICOPTER COMMUTING SERVICE LAUNCHES IN MEXICO CITY

Voom is a wholly-owned subsidiary of Airbus Helicopters that was launched in 2016 as an on-demand helicopter booking platform allowing passengers to request a seat on a helicopter within minutes. By providing a more efficient transportation option to daily commuters, it aims to address challenges associated with rush-hour traffic by offering an alternative form of transportation in some of the world's most congested cities.

Riders can book and take off in as little as 60 minutes or plan their trip up to seven days in advance, and only need to arrive at the helipad 15 minutes before boarding time. The Mexican capital is now the world's second city after São Paulo, Brazil, to offer helicopter commuting services.





FRANCE

FIRST DEMONSTRATOR OF A DRONE FOR A WARSHIP

The DGA (Direction Générale de l'Armement) has just awarded a contract for technology development in the field of rotary-wing drones to the Naval Group and Airbus Helicopters consortium. The contract covers de-risking studies ahead of construction of a future tactical helicopter drone demonstrator aboard warships. The demonstration project will lead to trials of the drone launch system, mission system and airborne vehicle, conducted from a French Navy vessel.

The purpose of the contract awarded by the DGA is to identify, deploy and test the technologies necessary for the integration of a tactical drone-system capacity within a heavily armed vessel. It forms part of the preparation of the SDAM (Navy Airborne Drone System), whose entry into service is foreseen for the middle of the next decade on new intermediate-size frigates (FTIs) and other French Navy ships.

EUROPE

EASA ISSUES SINGLE PRODUCTION ORGANISATION APPROVAL TO AIRBUS HELICOPTERS

The European Aviation Safety Agency (EASA) and Airbus Helicopters have just implemented a new single Production Organisation Approval (POA). This replaces previous national approvals from France, Germany and Spain by a single, integrated framework allowing for simplified industrial exchanges between Airbus Helicopters' manufacturing facilities, and which supports the company's industrial strategy of site specialisation across Europe.



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UNITED KINGDOM

NEW SUPPORT ARRANGEMENT FOR RAF PUMA MK2

Airbus Helicopters and the UK Ministry of Defence have signed a Follow-on Support Arrangement contract to provide support to the Royal Air Force Puma 2 fleet over the planned service life of the aircraft. The contract, worth an initial £100 million, is the first of two pricing periods which will see Airbus Helicopters provide full technical support and logistics until March 2022. The contract has the facility to be extended until the currently planned out of service date March 2025, subject to the agreement of both parties.

As part of the company's support offering, Airbus Helicopters will provide repair and overhaul services in addition to a parts-by-the-hour programme, helping to ensure high availability with stable, value for money maintenance costs. The contract also includes the provision of training to all Puma avionics and mechanical technicians as well as engineering managers.



© DR

TWO H125s HELP RESCUE CLIMBER IN PAKISTAN

P A K I S T A N

Two H125Ms were used in the rescue of a distressed climber on Pakistan's Nanga Parbat peak. Their transport of four members of a rescue team to within a day's journey saved crucial time in getting Elisabeth Revol to safety.

The mission involved picking up four members of a rescue team who were attempting a winter summit of another peak, K2, and dropping them at Nanga Parbat base camp to extricate Ms. Revol, who was suffering from high-altitude pulmonary oedema (HAPE) and frost bite.

CITYAIRBUS REACHES NEXT MILESTONE

G E R M A N Y

The CityAirbus programme has reached another important milestone: the completion and "power on" of the "iron bird" ground test facility in Taufkirchen, Germany. This enables the verification of the entire electric propulsion system of CityAirbus, developed by Airbus' E-Aircraft Systems unit.

The first full electric propulsion test bench has the capability to operate the propulsion system chain from flight controls to the dynamic loads of the propellers. This allows the verification of the electric, mechanical and thermal dynamics. After being matured and verified on the iron bird, the propulsion system will be embedded on the demonstrator by mid-2018.



© Airbus

AUSTRALIAN HELICOPTER AIRCREW TRAINING SYSTEM COMMENCES TRAINING

A U S T R A L I A

The first group of students commenced training mid-January on the Australian Defence Forces' new training helicopter at HMAS Albatross, Nowra. Up to 116 Navy and Army pilots and aircrew per year will be trained by Boeing and Commonwealth instructors using 15 helicopters from the H135 family. The new helicopters are replacing the Royal Australian Navy's AS350 BA and the Australian Army's Bell B206 Kiowa which have served the Australian Defence Force for over 30 and 40 years respectively. The H135 family is used extensively worldwide to train military personnel and is considered the platform of choice for the training of their pilots and crewmembers. These include armed forces from Japan, the United Kingdom, Spain, Germany and now Australia.



© Christian Keller





THE FUTURE IS NOW

Change is the only constant, and adaptation the most reliable path. Helicopters are no exception to this universal law. What would have seemed like science fiction a few years ago has become a reality today. With three prototypes flying, the first pre-series in the assembly line, and a roadmap for support and services tested in real operating conditions, the H160 is now the first helicopter of the next generation offered on the market.

The H160 combines product innovation with the innovation of its industrial model and support planning. This helicopter has been adapted to the demands of customers, who are looking for a silent, vibration-free helicopter that is, above all, easy to maintain and mature when it enters into service. Designed in the digital age, the H160 also benefits from the connected technology of its era. It's the helicopter of the future that's available today.

“THE H160 IS THE FIRST HELICOPTER OF THE NEXT GENERATION”

Programme director Bernard Fujarski takes stock of the H160. The programme is effectively entering the home straight with first delivery planned for the end of 2019.

Article: Monique Colonges

What are the major events that occurred in 2017 concerning the H160 programme?

Bernard Fujarski: The grand finale of 2017 was, without doubt, the takeoff of the third prototype in October. At the end of 2017, the three prototypes together had accumulated nearly 600 flight hours.

Over the course of 2017, we ran three major campaigns. The snow campaign gave us a better understanding of air input behaviour under severe snowy

conditions. The cold weather campaign has allowed us to check that the H160 copes well in extreme temperatures up to -35 °C, while the campaign dedicated to lightning indirect effects (LIE) allowed us to check the design of our composite structure. From a production point of view, we received the first station of the assembly line in December. With the arrival of the first centre structure, made in Donauwörth, we have moved from the design phase to the production phase. On the support side, two campaigns

called Operator Zero dedicated to aircraft maintenance (*see Rotor no. 110*), were also carried out in 2017. The common aim of all these tests was ensuring the best level of helicopter maturity for when the H160 goes into service at the end of 2019.

Which important steps will be taken in 2018 in the H160 programme?

B.F.: 2018 marks the start of the home stretch before the entry into service in less than two years' time. In early 2018,



© Jérôme Deulin

The cold weather campaign was carried out in Canada at the beginning of 2017.

H160



- Capacity: 1 or 2 pilots
+ up to 12 passengers
- Powerplant: 2 Safran HE
Arrano engines
- Fast cruise speed:
155 kts / 285 km/h
- Max range: > 460 NM

The third H160 prototype will be used by the Operator Zero team to simulate flights in completely realistic operating conditions.



© Thierry Rostang

the PT2 went to the US for several months: it participated first in the Heli-Expo trade fair before performing flight demonstrations for customers, after which it will head to Dallas to carry out flights with FAA representatives, with the view to gaining American certification. There will also be a hot weather campaign in Colorado and a new Operator Zero campaign with American customers before the aircraft comes back to France. 2018 also marks an acceleration in delivering certification documents, most of which will need to be delivered by the end of the year. The two other prototypes will be put through test campaigns in parallel. The first pre-series will be the first to be manufactured on a completely new generation of assembly line, combining performance, quality, ergonomics and safety (see page 12). From a support perspective, which is a key aspect of the H160 programme, 2018 will mark the start of production of deliverables for our customers.

What added value does the H160 offer to customers?

B.F.: The H160 is the first helicopter of the next generation that combines product innovation, innovation in production, and innovation in terms of support. The H160 is, of course, equipped with numerous technological innovations which were the subject of no less than 68 patent filings, like the Blue Edge blade which achieves better performance with less environmental impact. But the H160 will also offer customers a high level of quality thanks to our development logic and the verification and validation process that allows us to be fully confident in the level of maturity we can offer to customers, as soon as the helicopter goes into service. What's more, with a simplified maintenance plan, which has been designed with customers, supported by digital tools, and combined with the HCare service, support for this helicopter will be a real asset in comparison to our competitors. ■



© Eric Raz

“We are fully confident in the level of maturity we can offer to customers, as soon as the helicopter goes into service.”

Bernard Fujarski, Programme Director of the H160.

ASSEMBLY LINE INNOVATION

The H160’s final assembly line in Marignane reflects the aircraft it is designed to build: high-performance, innovative and marked by excellence.

Article: Alexandre Marchand

“When designing this assembly line, our aim was to create the shortest possible assembly cycle, while also attaining a high level of industrial maturity from entry into service,” explains Laurence Béjat, Head of the H160 assembly line.

SIMPLER AND QUICKER

To achieve this aim, Airbus Helicopters and Latécoère (see sidebar) capitalised on the concept of major component assembly (MCA) defined in the framework of the company’s industrial strategy: “The H160 is divided into sub-assemblies, the MCAs, which are manufactured, equipped and tested independently before they even arrive at the final assembly line (FAL),” outlines Laurence Béjat. “This simultaneous execution of industrial tasks makes it possible to counter risks far in

advance and thus guarantee an industrial cycle of the aircraft that is twice as short as it was for previous generations of aircraft.”

“Another benefit of using the MCAs is limiting the number of components that need to be assembled on the line,” continues Laurence Béjat. “Fewer components make for quicker, simpler and better-quality assembly. So we’ve evolved from a manufacturing line to a real assembly line.”

A HIGH LEVEL OF MATURITY

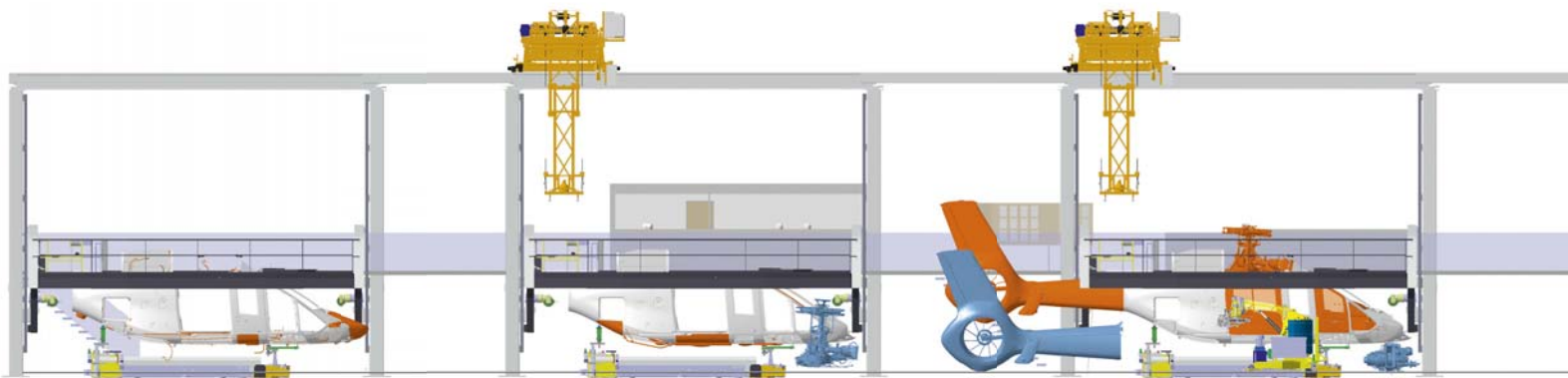
The scenario involves the MCAs converging towards the assembly line, consisting of five assembly stations operating in a flowline. Every eight days, the in-progress aircraft go from one station to the next. At the end of the fifth station, they arrive at the flight line,

where the work has also been optimised to reduce cycles. This innovative and demanding industrial organisation has been validated by taking advantage of the aircraft’s digitalisation and innovative simulation methods, such as RING* or “verify and validate” (V&V) processes. A high level of maturity is expected as soon as the FAL comes into service, where an assessment of workstation ergonomics has made it possible to set the ambitious aim of zero assembly line accidents.

Initially, the manufacture of ten pre-series aircraft will make it possible to check all the FAL’s workings. Ramp-up will occur gradually until 2020 to reach an output of 45 aircraft per year. ■

* RING: Assembly of the first series aircraft by rigorously following the optimal assembly sequence, with the main parties present.

An assembly line in five steps



Station 1: Delivery of MCA centre fuselage and start of assembly with installation of harnesses

Station 2: Installation of air conditioning and cockpit avionics bay

Station 3: Installation of MCA main dynamic assembly and rear fuselage



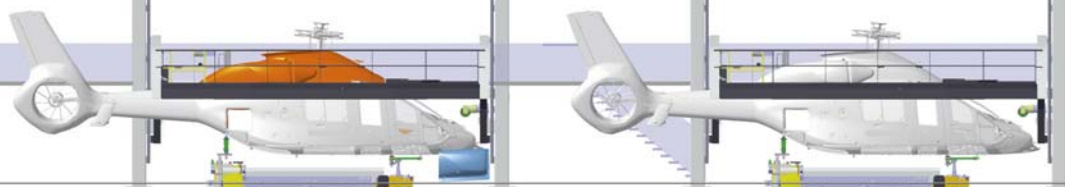
© Eric Raz

An innovative industrial tool

Drawing on the experience of Airbus' commercial aircraft branch, Airbus Helicopters utilised Latécoère's know-how to design and build the H160 Final Assembly Line (FAL). At the heart of the FAL, five assembly stations are organised around elevating tables which raise the aircraft to the optimal position, thus providing favourable working conditions

for the operators. A platform makes it possible for work to be carried out safely on two levels at the same time. The supply of parts directly to the upper zone reduces operator movements, which can result in accidents and wasted time. The engines and dynamic assemblies are installed using semi-automatic hoists. Even more innovation is provided in the form of automatic guided

vehicles (AGVs), robotic vehicles tasked with moving the aircraft from one assembly station to another, at the end of each cycle, every week. It's a job that takes just five minutes, with no human involvement required. Another example is the use of a robotic arm which can place the entire avionics bay into the aircraft in just a few minutes and one sole movement.



Station 4: Installation of engine and landing gear

Station 5: Ground test and final quality check

THE H160'S WOW EFFECT

From EMS to VIP, the H160 seems poised to find its place in a variety of segments. A look at where the first member of the next generation fits in the market.

Article: Heather Couthaud

Since it was unveiled for the first time at Heli-Expo in 2015, Airbus Helicopters' H160 is proving good on its promise to revolutionise the manufacturer's range, rating positive comments from those who have flown aboard its prototypes (*see below*). Targeted for the medium helicopter market, Airbus Helicopters' goal in developing the H160 was to address the needs of the

medium-class segment—in a vastly new and improved way. The H160 was originally designed and developed for civil missions. “But its versatility means that for military customers the H160 can replace aging fleets currently comprising a variety of helicopters. For civil and parapublic markets, it positions as the most innovative and mission-driven aircraft of the market,”

says Luc Bentolila, Head of Marketing and Sales Development for Airbus Helicopters. “It offers the option of combining multiple purposes within just one aircraft.” Among its many uses, the H160 will be configured for law enforcement and public services, private and business aviation, as well as transport and offshore industries such as oil and gas and wind farms. Further, the aircraft

The friendly helicopter: what people are saying about the H160

After more than 600 hours in three prototypes, *Rotor* leaves the floor to customers who had the opportunity to take flight on board the H160.

Photos: Airbus Helicopters / Productions Autrement Dit



Watch the video.



“The first helicopter which is produced for pilots and passengers. There is just one word: it’s amazing. It’s amazing how easy it is to fly. Everything basically which was told [to me], was given [proof] today on the flight.”

Sascha Fleischmann
Pilot – LionsAir, Switzerland – VIP



“I had very good impressions with the flight. The helicopter flies fast with very low vibration levels. This is what the pilot is expecting, to be able to speed up the engine without perceiving vibrations. Very good. It is easy to fly and has great visibility for landing in restricted areas, which is where helicopters usually operate.”

Mauro Allegrini
Pilot – Air Corporate, Italy – VIP

will also feature a “green configuration” for emergency medical services (EMS) allowing it to accommodate the most suitable mission configuration.

A CLASS OF ITS OWN

A host of considerations have accompanied the H160’s development, starting with overhauling its industrial model to embrace the digital age and to draw on the experience of Airbus. The H160’s design – reflected in 68 new patents – further puts it in a class of its own, since its designers set out to make the aircraft of tomorrow. Hence its low sound levels – “not only a comfort element, a safety element,” says Bentolilla, commenting that less sound means clearer communication between pilot and passengers – and an overall

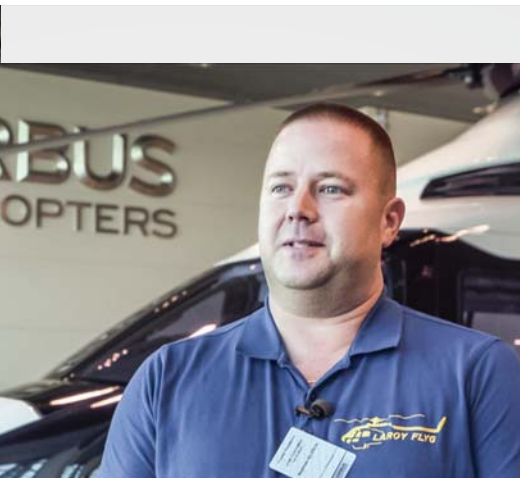
ease of use. The helicopter’s maturity has been steadily honed in anticipation of its certification and entry into service in 2019, giving rise to improvements in maintenance procedures, ease of access to the aircraft, and 3D and interactive documentation.

Interest in the H160 is coming from

many quarters, notably the EMS and VIP segments, where the H160’s low sound footprint has the potential to make a big impact. “Everyone who sees it says wow,” says Bentolilla. “There is a wow effect, and we hope that the same will apply to its maintenance and operation—that it’s wow for the long term.” ■



© Jérôme Deulin



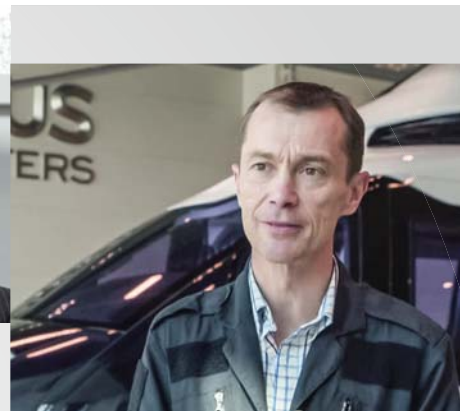
“My general impression is that you can feel that it’s really a new, modern helicopter. It’s completely new. My original expectations, because I’ve seen it online and in pictures, were to feel like it’s a brand new thing, and it really felt like a modern helicopter.”

Mattias Nilsson
Pilot – Larcy Flyg,
Sweden- HEMS



“The cabin volume is pretty impressive. It is a big aircraft, [and] there’s a lot of space, especially in the back. [When it came] time to show us the capabilities of the aircraft, it’s a very manoeuvrable machine, especially considering its size. The autopilot and the avionics are a fantastic improvement over the current generation. But the visibility, you see very quickly that’s a huge improvement. I mean, we have very good visibility with the machine.”

Tom Sherony
Pilot – University of Michigan,
USA - HEMS



“I wasn’t expecting an aircraft with electric commands that really took care of the pilot and sort of managed the systems so well. So I was quite surprised at how well it performed, especially autopilot out. Keep doing a fantastic job! You are building a fantastic aeroplane. I hope to fly it one day up in the North Sea.”

Christopher Daly
Pilot – Bristow, UK - Offshore

UP ABOVE



Ecureuil helicopters supervise the 2018 Dakar Rally. In this picture, the Peugeot 3008 from David Castera during Stage 11 / © Eric Vargiolu / DPPI



H160

The H160 opens a new chapter in the history of Airbus Helicopters. It has been designed to create added value for customers with its performance, economic competitiveness, safety and comfort. Both cleaner and quieter, the H160 takes a step forward in showing respect for the environment.

NEXT-LEVEL PERFORMANCE

- More than one tonne of payload up to 120 NM radius-of-action
- New-generation turboshaft engine
- Faster than ever

NEW-GENERATION DESIGN FOR GREATER PASSENGER COMFORT AND PERFORMANCE

- Blue Edge® blades
- Biplane stabiliser™
- Canted Fenestron®
- Full-composite airframe

Light maintenance plan



Enhanced access to maintenance points

Flexible maintenance plan

Fully digital maintenance tools

Built-in safety



Exceptional handling and external visibility

- Extra-large push-out windows
- Power margins anytime
- Full flight envelope protection

Technical data



Capacity:

1 or **2** pilots + up to **12** passengers



MTOW:

5,670 kg
(12,500 lb)



Fast cruise speed:

155 kts
(285 km/h)



Maximum range:

>460 NM



Maximum endurance:

4 h 10 m
(+20 min reserve)



Less fuel burn:

-15%
compared to previous generation engines

Missions

Transport

Greater passenger comfort thanks to **low sound and low vibration** in a large, bright cabin.



EMS

The largest cabin volume in its class for better patient care.

Private & business aviation

This is how exceptional feels.



Public services

A wide range of equipment for public services missions.

USA **Florida EMS gets a vital boost from the H155**

For its critical care transport, the University of Florida health system looks to ShandsCair, which operates helicopters, including two H135s and one H155, and ground transportation out of five bases in Florida.

Article: Heather Couthaud - Photos: Lorette Fabre

The blue-and-orange helicopter touches down, the cheerful logo on its paint scheme just visible to onlookers: an alligator in white scrubs toting a medical bag. As soon as the rotors slow, members of the ShandsCair 1 medical team duck out of the H155, which has been dispatched to transport a head trauma patient to the University of Florida (UF) Health Shands Hospital. The patient is loaded by stretcher into the aircraft's interior – one of just a handful of HEMS-configured H155s in operation in the US – and the aircraft with its precious cargo takes off. New to the fleet since April 2017 is this H155 in medical configuration, which operates out of ShandsCair's Gainesville base located at UH Health Shands. "The H155 not only extends our range a lot further than most helicopters can reach, but increases our payload," says Edward Crews, Programme Director for the UF Health ShandsCair Critical Care Transport Program. "It increases our capability by providing for multiple medical cases on one transport—where other teams would only be able to provide two medical personnel, we can send up to four."

WORKING AGAINST THE CLOCK

Operating critical-care transport for the UF health care system for 36 years, ShandsCair is a specialist in working against the clock. As part of the programme's adult/pediatric team, a medical crew consisting of a registered nurse (RN)/paramedic and a critical care paramedic respond to adult and pediatric cases for infants older than 30 days. For neonatal emergencies, the crew comprises a neonatal RN and a registered respiratory therapist. In the cockpit, one pilot gets direction from the communications centre, which also coordinates the service's fixed-wing and rotary fleet, ground ambulances and vans. En route to the hospital, a flight which averages about an hour for the majority of ShandsCair's rescues, the flight

nurse checks the patient's vital signs while the paramedic prepares the equipment for intracranial pressure monitoring. Because UF Health ShandsCair physicians establish care protocols directly with ShandsCair clinicians, the treatment in flight is immediately followed up once the patient arrives at the hospital.

READY FOR ANY EMERGENCY

"We got called for an automobile crash south of Gainesville and the weather had turned pretty bad," says Crews. "Other operations in the area had turned it down because of weather. Because our H155 is IFR-capable, we were able to lift off from here, pick up IFR clearance, fly down to the middle part of Florida in the clouds, meet the EMS crew at the airport, pick up the patient, and safely bring them back to the hospital where they got the care they deserved."

The helicopter touches down on the hospital helipad and staff quickly wheel the trauma patient to the ICU. His condition has been given the best possible chance for recovery, thanks to ShandsCair's skilled – and fast – work. ■

"One of the things that stands out about the H155 is the safety and capability to work in environments that most other EMS helicopter systems would not be able to operate in."

Edward Crews, Programme Director for the UF Health ShandsCair Critical Care Transport Program.

- 1 – The H135's anti-resonance isolation system ensures that patients are given the smoothest possible ride in the quietest cabin in its class.
- 2 – ShandsCair bases are located in Gainesville, Summerfield, Perry, Panama City, and Milton, Florida.
- 3 – One of the main factors that led ShandsCair to choose the H155 were the cabin size, payload and range.
- 4 – Edward Crews, programme Director for the UF Health ShandsCair Critical Care Transport Program.
- 5 – Among their five helicopters, ShandsCair uses two H135s in EMS configuration.

ShandsCair fast facts

Founded: 1981, initially with neo/pediatric flight and ground teams

Headquarters: Gainesville, Florida (USA)

Fleet: fixed-wing aircraft, 5 helicopters (of which, 2 H135 and 1 H155), 9 ground ambulances, 2 medical transport vans

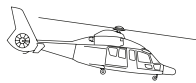
Florida bases: Gainesville, Panama City, Summerfield, Perry, Milton (all of Florida is covered by the H155's range)

Average number of patients transported yearly: 7,000

Average number of heli-missions per year: 1,100, of which the H155 performs around 450



H155



- Maximum take-off weight: 4,920 kg - 10,846 lb
- Capacity: 2 pilots + 13 passengers
- Engine: 2 Safran HE Arriel 2C2
- Fast cruise speed: 266 km/h - 144 kts
- Range: 784 km - 423 NM
- Endurance: 4 h 03 min



MEXICO **Ten Panthers in Mexican seas**

As of December 2017, the Mexican Navy has been operating ten AS565 MBe Panther helicopters, the result of an order for ten units in November 2014, when the Mexican Navy became the aircraft's launch customer. Below, an overview of the qualities of this model, which has become an essential part of the Mexican Navy's fleet.

Article: Belén Morant - Photos: Anthony Pecchi

Versatile, safe and efficient. That's how the Mexican Navy describes the MBe Panther after approximately two years of its use in various operations. Its maximum take-off weight has increased significantly from 4,300 kg to 4,500 kg. But this isn't the only improvement: the MBe Panther also offers optimised performance in high and hot environments, and features modern avionics with a vehicle and engine multifunction display (VEMD) and sophisticated mission equipment for greater operational capabilities, allowing it to achieve a top speed of almost 280 km/h and a range of 780 km. All of these qualities make this helicopter a safe and cost-efficient model for the missions it covers.

"The MBe version is a more modern helicopter with an advanced four-axis autopilot and generally improved performance and features thanks to engines that are more powerful than those of its predecessor. This is the third version of the Panther to be used by the Mexican Navy, which has been operating helicopters from this

family since 2004," explains Admiral José María García Macedo, General Coordinator of Naval Aeronautics for the Mexican Navy. "The MBe's capabilities can be used in both marine and land-based environments for missions like search and rescue (SAR), or to support the civil population in disaster areas or areas affected by natural catastrophes. It can also be used for cargo load jobs and as an air ambulance. In total, each Panther logs approximately 300 flight hours per year."

FIRST-CLASS EQUIPMENT

The Panther helicopters are operated at various bases in the Gulf of Mexico and on the Mexican Pacific coast. Their role also includes being stationed on logistic ships which carry out ocean patrols – Navy ships with hangars and platforms to house the Panthers – from which the helicopters respond to maritime emergencies and provide protection to oceangoing fleets.

To prepare them for a wide range of missions, the Navy's MBe Panthers are equipped with a rescue winch with a capacity of 272 kg and a forward looking infrared (FLIR) camera for SAR missions at night. Furthermore, they can also be equipped with up to four stretchers for medical evacuations and casualty transport, as well as with a load hook. "The personnel of different squadrons consider this helicopter easy to fly, especially due to its technology and avionics, which facilitate operations and increase security throughout missions. We are very satisfied with the new Panther," affirms Admiral García Macedo. ■

"In total, each Panther logs approximately 300 flight hours per year. We are very satisfied with the new Panther."

Admiral José María García Macedo, General Coordinator of Naval Aeronautics for the Mexican Navy.



1 - The Panthers' maximum take-off weight has increased significantly from 4,300 kg to 4,500 kg.

2 - The Navy's MBe Panthers are equipped with a rescue winch with a capacity of 272 kg and a forward looking infrared (FLIR).



View operational pictures on Rotor Online.



2

Rescue in high seas

On 2 August 2017, two crew members of a tuna boat were aboard a piston helicopter as part of fishing activities, where they suffered an accident and fell into the sea 370 km south-east of Puerto Chiapas. An MBe Panther equipped for medical evacuations set off from the ocean patrol of the Mexican Navy “Durango” to rescue the crew members. The injured crew were immediately transported to a regional hospital to receive specialised medical care, given the severity of their injuries.

MISSION



1 – The state of Baden-Württemberg was the first customer to receive an H145 used for police missions in 2015.

2 – The operator workplace onboard the H145 is equipped with large monitors. Filmed material can also be downlinked to police stations on the ground in real time.

3 – The Baden-Württemberg police also use their H145s for rescue missions and winning operations.

4 – The H145s of the Baden-Württemberg police are versatile multi mission police helicopters equipped with a state of the art camera system.

GERMANY

The H145 protects from above

From missing people to manhunts and surveillance, whenever the police force needs aerial support, the pilots of Baden-Württemberg's police helicopter unit take off in their H145 aircraft.

Article: Joerg Michel

It's just a few weeks before Christmas, and temperatures are freezing. At the airport in Stuttgart, Christian Daxkobler is on his way to the hangar. A man has gone missing from a retirement home and Daxkobler, who has been with Baden-Württemberg's police helicopter unit for four-and-a-half years, has been called into action. Daxkobler takes his place at the computer workstation in the passenger cabin and, together with his two pilots, the H145 helicopter takes off on its potentially life-saving mission.

"We've seen an increase in these sorts of callouts in recent years," says Martin Landgraf, deputy chief of Baden-Württemberg's police helicopter unit. "The H145 is a state-of-the-art police helicopter we can use to support our colleagues on the ground in precisely these sorts of situations. It comes equipped with an image-stabilised, high-definition camera system for both natural light and thermal imaging scenarios, which can be coupled with the helicopter's searchlight, allowing us to see much more than police on the ground can see." The visuals can be analysed from within the helicopter by an operator sitting at a workstation equipped with a 22-inch computer screen. At the same time, images are also relayed in real time to the police dispatch and even to patrol cars on the ground as required.

THERMAL IMAGING FOR A SUCCESSFUL SEARCH

The helicopter has arrived at the target area, and it is now that Daxkobler's work begins. He uses the electro-optical system to scan the area in which the missing person is thought to be. "The thermal imaging camera allows us to spot details we simply couldn't see with the naked eye," explains Daxkobler. "And even if someone is partially

obscured by branches and leaves, we can still detect them by their heat signature." A few minutes go by before Daxkobler spots a signature. He notifies his colleagues over the onboard radio, and they land the helicopter near to where the heat signature was detected. The elderly man is lying on his back on the ground—he's alive. The crew administers first aid until the emergency doctor arrives on the scene.

"Saving lives is our top priority," says Martin Landgraf. "Last year, we successfully located 62 missing people, all still alive, but people who might well have died without the help of our police helicopter unit."

POWERFUL AND VERSATILE

Missions are far from restricted to searches for missing people, however. The Baden-Württemberg police helicopter unit's state-of-the-art H145s also assist in flights for environmental protection, the documentation of severe accidents, and hunts for criminals. "The H145's versatility is very important for us," says Landgraf. "We also use the H145 to transport our special units and to perform rescue missions from the air with special abseiling equipment."

Since 2016, Baden-Württemberg's police helicopter unit has operated a total of six H145 helicopters at its two locations in Stuttgart and Söllingen. A total of 72 people are on call around the clock. "Last year, our fleet of H145s flew over 2,600 missions, more than 700 of them at night," says Landgraf. "Thanks to the compatibility of Helionix with night vision goggles, the H145 is very well suited for this purpose. On top of that, the H145's greater payload capacity and boosted performance help us stay in the air longer." ■

Baden-Württemberg police helicopter unit

- 6 H145 helicopters
- 72 employees
- 2,600 missions a year
- Helicopter crew: 2 pilots and a systems operator
- 24 hours a day, 365 days a year

A decade in La Mancha

Ten years after its creation, the Airbus Helicopters factory in Albacete (Spain) has established itself as a fundamental pillar of the company's industrial strategy. Moreover, its commercial development has been a resounding success despite a difficult economic environment.

Article: Belén Morant

Now that its industrial plant has seen a decade of operation, Airbus Helicopters España has become an irreplaceable economic actor in Castilla la Mancha. The company employs about 500 people in Spain, but generates such a large amount of indirect and service-sector employment that it is estimated that in just ten years the direct return on investment has been quadrupled. In the province, it counts as the highest-invoicing company and it has earned a reputation as a committed neighbour thanks to its support for environmental policies and training programmes featuring high technological content.

LOCAL PROTAGONISTS

"In this decade, we have delivered more than 180 new helicopters to a fleet of 320 Airbus helicopters. That is to say, more than 50% of the Spanish fleet of Airbus Helicopters has been renewed," highlights Francisco Vergé, Managing Director of Airbus Helicopters España. Airbus Helicopters now boasts a market share of almost 95% in the Spanish para-public sector. Most are helicopters that carry out activities for various state institutions such as customs, maritime fishing, and maritime rescue, whose trust in Airbus dates back to the nineteen seventies. On the other hand, the market share in the civil sector - mainly EMS operations, fire fighting and aerial work in general - remains stable at more than 60%. As for the military fleet, Airbus Helicopters España expects the current 60% market share to grow in the coming years, according to the master plan of the DGAM*. The creation in 2018 of a

national support centre to support the fleet of the Spanish Ministry of Defence, similar to that in France and Germany, will be a fundamental step in Airbus Helicopters España's commitment to the availability and operational capability of the country's armed forces helicopters.

CENTRE OF INDUSTRIAL EXCELLENCE

As part of Airbus Helicopters' new industrial strategy, its manufacturing plants are being primed to specialise in the production of certain fundamental components. Thus, the Albacete factory is set to become a centre of excellence for the manufacture and integration of rear fuselages for all Airbus helicopters globally.

"This approach means the absolute integration of our plant into the Airbus Helicopters industrial strategy, and offers greater stability, visibility and sustainability to our project in Spain," explains Francisco Vergé. "For us, this decision guarantees keeping sustainable jobs. For the company, this specialisation implies further improving the quality and competitiveness of our products. We all have something to gain from this new collaboration."

In addition to its industrial activities, Airbus Helicopters España also takes care of engineering R&D, maintenance and modernisation of helicopters, certification and qualification (including flight tests), deliveries, as well as logistics support for customers in the civil, military and para-public sectors. ■

*DGAM: Dirección General de Armamento y Material (Directorate-General of Armament and Material).

1 - The Albacete plant was inaugurated in March 2007. It has 90,000 m² of buildings on 150,000 m² of land next to the airport.

2 - Francisco Vergé, Managing Director of Airbus Helicopters España.

3 - Eight NH90 are in operation in Spain, with a ninth to be delivered very soon.





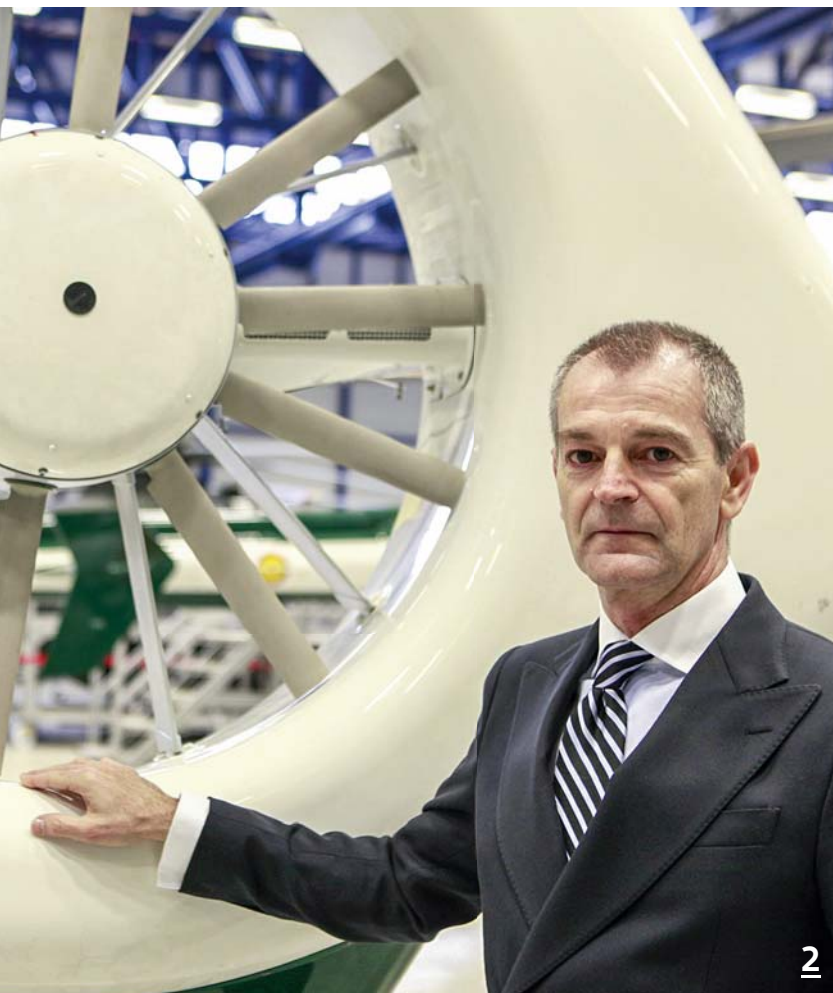
Airbus Helicopters España

- **Workforce:** 500 employees (more than 600 counting temporary employees and direct subcontractors)

- **Activities:**
 - Sales and marketing
 - Production and development engineering
 - Aerostructures production and final assembly
 - Maintenance, retrofitting and modernisation (including non-Airbus military helicopters)

- **Revenue:**
€390 million in 2017

- **In-service fleet:**
340 helicopters





Watch videos on Rotor Online.

PARTNERS

Gun pods:
FN Herstal HMP400

Cannon pods:
Nexter NC621

Unguided rockets:
Thales FZ231

Laser-guided rockets:
FZ275 LGR from Thales

Helmet-mounted display:
Scorpion from Thales

EOS: **MX-15D from L3 WESCAM**

HForce's powerful side

HForce – Airbus' H-generation weapon system – was designed based on the experience gained from the Tiger helicopter. It can be fitted on Airbus' military range of helicopters to offer the entire spectrum of operational capabilities. This system will allow military forces that may or may not be able to invest in specialised helicopters to complete light attack missions at an affordable cost.

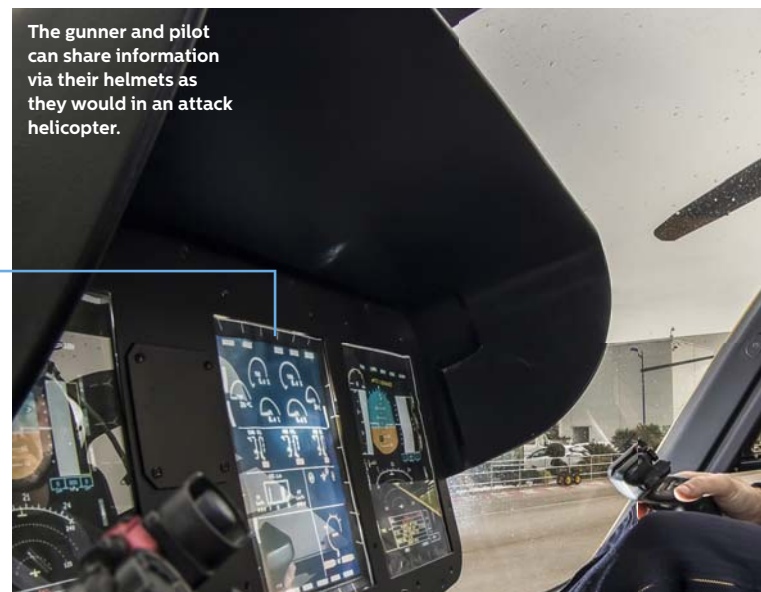
Article: Belén Morant and Joerg Michel



Defence agencies gain more flexibility in the management of their weapons stock because weapon pods allow arms to be interchanged from one aircraft to another.

EQUIPMENT JUST FOR MILITARY HELICOPTERS?

HForce is much more. It is a simple, modular and incremental weapon system designed by Airbus to be fitted to any military version of an Airbus helicopter – all with the capacity to be retrofitted – to convert the aircraft to a light attack helicopter with the minimum of integration. Today, there are HForce offers for the H125M, H145M and the H225M for the entire spectrum of missions, ranging from armed reconnaissance to utility and attack missions. ■



The gunner and pilot can share information via their helmets as they would in an attack helicopter.

HOW DOES IT WORK?

Like a Swiss Army knife, HForce offers a multi-purpose mission computer and a large set of weapons (air-to-air, air-to-ground, ballistic or guided) to address any operational need. This technically-advanced solution takes into account the different aspects of firing accuracy: weapon recoil, centre of gravity, ground clearance and vehicle separation. Moreover, the gunner and pilot can share information via their helmets as they would in an attack helicopter, thus ensuring extremely effective firing accuracy, mandatory when providing fire support to troops in combat. ■



H145M firing campaigns in Hungary and Sweden

Following the first flight of an H145M with HForce weaponry in August 2017 at the Airbus Helicopters site in Donauwörth, Germany, the helicopter successfully performed two firing campaigns over the course of last year. In October, the H145M completed a ballistic development test in Hungary with the HForce weapon system that included gun pods, cannon pods and unguided rockets using a helmet-mounted sight display developed by Thales. In a second firing campaign, which took place in Sweden in December 2017, laser-guided rockets were tested with target engagement capabilities of the electro-optical system. All fired rockets hit the target with a deviation of less than a metre fired at a distance of up to 4.5 km. Final qualification of the ballistic HForce system on the H145M is scheduled for the end of 2018, while that of the laser-guided rockets is planned for the end of 2019.

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BUILDING ON EXPERIENCE

Airbus Helicopters' mission goes far beyond providing helicopters, ensuring that operators have everything they need to complete their mission successfully. Airbus Helicopters used its experience with the Tiger helicopter, especially concerning crew resource management, to offer an interchangeable armament system similar to the Tiger's, in which the gunner manages the helicopter's weapons while the pilot concentrates on flying. Affordable and available, HForce allows defence agencies to acquire armed scout or light attack capabilities as an initial procurement or as an ideal complement to specialised helicopters. ■



Andes operates four H125s for transport of staff and cargo (internal and external), seismic exploration, or magnetometry missions, among others.

PERU **There's no mountain high enough**

A thirty-minute commute to work is normal. However, if your work is in a mine at an altitude of more than 4,000 metres, things get more difficult. With its new H145, Los Andes Air Services transports workers to the Las Bambas mine in just 28 minutes, instead of four hours by car. Below, a summary of this and many other high altitude missions with the H145.

Article: Belén Morant - Photos: Andes

The arid coasts, high Andean altitudes and lush Amazon jungle have marked the development of companies in Peru. Rural roads and the lack of access have made many raw materials in the country go unexploited for decades. The company Los Andes Air Services (Andes) was founded in this context nearly 13 years ago. With more than 80,000

“After concluding the certification process of the H145, we had the opportunity to take a direct flight between Lima and Cuzco, something extremely rare for such a light helicopter. The flight took just three hours and 30 minutes, whereas it normally takes four hours, including a stopover in Ayacucho.”

Enrique Torres, Andes Commercial Director.

flight hours, it currently has eight aircraft, including four H125s and one H145—the first of its kind in the region.

“Our activities with the helicopter include transporting staff and cargo (internal and external), aerial work like seismic exploration, magnetometry, search and rescue, and medical evaluations, as well as tourist flights in the Cusco area. Now, we are also exploring new possibilities in the field of the urban air taxi in Lima,” explains Enrique Torres, Andes Commercial Director.

THE H145—A HIGH AND HOT EXPERT

Ever since Andes acquired its first H145 in April of last year, the company has carried out all kinds of passenger transportation missions in the regions of Cuzco and Abancay, an Andean area with altitudes that go up to and above 6,000 metres above sea level. Aerial operations in the Peruvian Andes are very demanding, not just due to the difficulties of the typical mountain environment, with unpredictable winds and abrupt weather changes, but also because of the temperatures, which vary from -10°C up to 30°C in



Workers from MMG Las Bambas appreciate the H145's security, comfort, silence.

summer. "Given these conditions, it was necessary to find an aircraft with exceptional characteristics, like the H145, an aircraft that surpassed our expectations," says Luis Fontenoy Miranda, CEO of Andes.

"As a state-of-the-art aircraft with cutting edge technology, the H145 offers features that are adapted to our country's geography, and our operations," Enrique Torres points out. "The flight is super comfortable, safe and pleasant, both for the crew and for the passengers. The automated control makes the helicopter very stable, and allows it to be operated in all of its dimensions. Our customers especially appreciate the efficiency, comfort and safety of the aircraft."

CLIMBING UP TO THE MINE

Andes' customers include the company MMG Las Bambas, which manages a copper mine that is in southern Peru, with an estimated total of more than one million tonnes of the precious metal. Each day, the H145 transports MMG personnel to a mining complex in approximately 30 minutes: a route that could take between seven to eight hours by ground transportation, without counting all of the safety risks involved with driving those unpaved, sinuous roads, not to mention the dangers inherent to the Andean mountain range.

"One time, on an early morning flight between Cuzco and Las Bambas, one of our passengers fell asleep during the flight, and was only awakened when alerted by the pilot. After leaving the aircraft, he explained that it was the first time he was able to sleep in a helicopter, because it was so comfortable and silent...anecdotes like that are proof of the comfort and tranquillity that the H145 provides in flight," Enrique Torres recounts with a smile. ■

The road to the mine of Las Bambas is unpaved and sinuous: bus transport can be risky and long.



"The versatility and multi-mission capacity of the H145 have allowed us to quickly respond to medical evacuations by air that have occurred in places that are difficult to access and far from medical centres that can handle emergencies."

Luis Fontenoy Miranda, CEO of Andes.

THE H160. WHAT THE PEOPLE YOU RELY ON, RELY ON.



**FLY
WE MAKE IT**

The new generation H160 boasts a range of unparalleled safety features. Maximized pilot visibility, intuitive information display, unrivalled pilot assistance with Helionix[®], and unmatched flight envelope protection. What's more, it carries up to 12 passengers with a radius of action of 120 NM, while burning 15% less fuel. With so many impressive features, the H160 is a huge step forward not just for its category, but for the environment, too.

Safety. We make it fly.

