

No. 125 - OCTOBER 2021

ROTOR

BY

AIRBUS HELICOPTERS

INNOVATION
**Testing the
hybrid future**

MISSION
**The Lakota
in the eye of
the storm of Haiti**

OFF THE BEATEN
TRACK
**The H125 fighting
desert locusts
in Africa**



H135

A programme in motion



AIRBUS REVEALS THE NEXT GENERATION OF CITYAIRBUS

Ushering in the next generation of CityAirbus, Airbus' fully electric vehicle is equipped with fixed wings, a V-shaped tail, and eight electrically powered propellers as part of its uniquely designed distributed propulsion system. It is designed to carry up to four passengers in a zero emissions flight in multiple applications.

[More information here](#)

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ADAC LUFTRETTUNG TAKES DELIVERY OF ITS FIRST TWO FIVE-BLADED H145s

ADAC Luftrettung, one of Europe's biggest helicopter emergency medical services (HEMS) operators, has taken delivery of its first two five-bladed H145s. Furthermore, the German HEMS operator will upgrade its current fleet of 14 four-bladed H145s to the five-bladed rotor system.

ADAC Luftrettung operates more than 50 Airbus helicopters from 37 stations throughout Germany. In June, an ADAC H145 was the first HEMS helicopter to fly with sustainable aviation fuel.

[Watch the video here](#)



H160 RECEIVES LOCAL CERTIFICATION IN BRAZIL

The H160 has received type certification by ANAC (the National Civil Aviation Agency in Brazil), paving the way for future deliveries in the South American country.

The H160 will be an efficient option in Brazil in the offshore energy market thanks to its high speed and good range, high levels of safety and the latest technology on board, as well as very competitive operating costs with low fuel consumption.

Thanks to its standards of comfort, technology and low vibrations, the H160 has already aroused the interest of corporate and business aviation in the country.

The H160's first Latin American client will be a private owner who signed the acquisition in 2018.

HONG KONG GFS H175 FLEET REACHES 10,000 FLIGHT HOURS

The global launch customer of the H175 public services configuration, Hong Kong-based Government Flying Service (GFS) recently reached a new milestone with 10,000 flight hours of its H175 fleet.

After reaching the first 5,000 flight hours last September, GFS performed another impressive 5,000 flight hours in less than 14 months, while achieving its highest monthly flight-hour record with 406 hours. As of August this year, more than 2,600 life saving missions have been performed by GFS's H175 fleet in 2021, of which a total of over 6,900 occurred since the entry into service of this new type.

FIVE NEW H125s FOR PHOENIX POLICE DEPARTMENT

The Phoenix Police Department in Arizona, US has signed a new order to upgrade its airborne law enforcement helicopter fleet with five new H125 helicopters. Deliveries are expected to begin next year.



Protecting



SUPPORTING THE RED CROSS IN HAITI

The Airbus Foundation supported the Haitian Red Cross and the International Federation of the Red Cross (IFRC) with helicopter flight hours in the wake of a 7.2-magnitude earthquake that shook Haiti mid-August 80 miles south of the capital, Port-au-Prince.

The Airbus Foundation quickly provided 60 helicopter flight hours free of charge to support its partners with an H125 helicopter from the regional helicopter operator, Air Rotor Service AP. The H125 supported the distribution of humanitarian aid and the transport of medical professionals so they could arrive safely and rapidly in the affected areas.

This reactivity was possible thanks to the Airbus Helicopters customer centre in Mexico who set up the mission with Air Rotor Service AP and the collaboration of the local Red Cross.

THE H225 SIMULATOR EXPERIENCE IN ASIA PACIFIC

The Airbus Helicopters Malaysia Simulation Centre based in Subang, Malaysia, houses Asia Pacific's only training simulator for H225/H225M helicopters, as well as a second simulator for AS365 Dauphin training. It has recently welcomed its sixth H225 customer, the Indonesian Air Force, for a series of recurrent H225 simulator training courses for their pilots. Airbus and the customer navigated through COVID-19 challenges and travel restrictions across borders, to successfully conduct their first training session in August, with several more sessions planned for the year.



FIRST LAKOTA UH-72B FOR THE US ARMY NATIONAL GUARD

Airbus Helicopters, Inc. has delivered the first UH-72B, the latest variant of its Lakota helicopter, to the US Army National Guard from its production facility in Columbus, Mississippi. This delivery is the first of 18 UH-72B Lakota helicopters currently on order to support the National Guard's critical missions. Based on the widely successful H145, the UH-72B incorporates technologies that increase both safety and flight performance, including the five-bladed main rotor, the Fenestron shrouded tail rotor, Safran Arriel 2E engines, and the Airbus-designed Helionix avionics suite.

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Bruno Even, CEO of Airbus Helicopters

“What drives Airbus Helicopters to innovate is our desire to meet the expectations of our customers and society in general, both those of today and in the future.”

Innovation is the driver of change and the only way to endure in a high-tech industry. But must we make a choice between evolution and revolution?

In the case of Airbus, our incremental innovation model helps us to continue to lead the way in the civil market by continuously improving products that have proven their capacity to adapt to the demands of our customers. With its new functionalities, improved performance, enhanced safety and more sustainable emissions, the natural progression of the H135 has resulted in a modern helicopter equipped with state-of-the-art technology and the benefit of 25 years of experience: innovation at the service of evolution.

Meanwhile, our pioneering spirit has led us to explore uncharted horizons in the field of vertical flight that will allow us to guarantee a more sustainable future. Airbus is benefitting

from years of dedicated research, innovation, two electric vertical take-off and landing (eVTOL) demonstrators – the CityAirbus and Vahana – and development on sound technology across its portfolio of products, as well as decades of experience in certifying aircraft. Today, our next generation of CityAirbus – a fully electric four-seater aircraft – and the success of the tests of our Flightlab equipped with the engine back-up system show just how convinced we are that leading the way in the aerospace industry takes both boldness and determination. Revolution at the service of innovation.

One thing is clear: what drives Airbus Helicopters to innovate is our desire to meet the expectations of our customers and society in general, both those of today and in the future. That's what the incremental and disruptive innovation at Airbus Helicopters is all about: meeting the needs of today to create new opportunities for tomorrow.

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75

YEARS

Of the Argentinian Coast Guard carrying out essential missions with H225, AS365 and H125 helicopters.

4 to 5

BLADES

Helibras completed the first retrofit of a 5-blade ACH145 helicopter in Latin America.

80 km and
120 km/h

This is the range and the cruise speed that the CityAirbus Next Generation can reach.

+700

SUPER PUMAS

are flying in the world today, among which 140 are H225s. The Super Puma family achieved 5,781,800 flight hours in 2020.

+22%

More Airbus helicopters enrolled on an HCare Global contract.

Global Medical Response (GMR) will add a total of **21 Airbus helicopters** from the H125, H130 and H135 families to its growing air medical fleet, with options to include up to an additional 23 helicopters, **bringing the total order potential up to 44 helicopters.**

100 Kw

The 100 Kw electric motor of the Flightlab's engine back-up system, which is connected to the main gearbox, can provide electrical power for 30 seconds in the event of an engine failure.

1,000,000

MISSIONS

On 19 August 2021, DRF Luftrettung carried out its one millionth air rescue mission providing people with medical care.

10,000

FLIGHT HOURS

The H225M fleet of the 1^o/8^o Squadron of the Brazilian Air Force (FAB) has completed 10,000 flight hours.

1,000 km

The total distance flown by the Vahana and CityAirbus demonstrators during their 242 flight and ground tests.

H135

A programme in motion



Offering incremental innovation as a solution to new market needs: that is the secret to the success of the H135 programme, which after 25 years of improvements and more than 6 million accumulated flight hours, remains the undisputed leader in the HEMS market. Proposing more power, more payload, increased mission capabilities and security, but always without losing sight of the environmental challenge, the H135 has many stories to write, and as many lives to save.

“The big success of the H135 is the consistent improvements”

Martin Schneider has been the head of Airbus’ H135 programme for more than four years. He talks to *Rotor* about the evolution of the helicopter, the most recent improvements and what Airbus does to make the H135 more eco-friendly.



TWENTY-FIVE YEARS AGO, THE H135 ENTERED INTO SERVICE – WHY DO YOU THINK THE HELICOPTER IS STILL SUCCESSFUL ON THE MARKET AND VALUED BY OPERATORS?

Martin Schneider: Yes, it is true; the first helicopter of the H135 family entered into service 25 years ago, in summer 1996. Our launch customer back then was the German HEMS operator DRF Luftrettung, who also operates the most recent H135 version. Since then, we’ve delivered more than 1,400 helicopters and the H135 flies on all continents for many different missions, while having clocked close to six million flight hours. I think the big success of the H135 is the consistent improvements we have brought to the helicopter. It is true that from the outside it looks like the H135 has not changed that much, but we have consistently invested to improve the power, the payload, the mission capabilities and most importantly, the safety. One example: the maximum take-off weight (MTOW) of the first H135 helicopter was 2,630 kg. For the most recent version, with alternate gross weight the MTOW stands at 3,100 kg. Even more important, the useful load is approximately 50% of the MTOW.

WHAT ARE THE MOST RECENT IMPROVEMENTS?

M.S.: One important step was the introduction of Helionix to the H135 helicopter family. It has been available since 2016 and is an important upgrade to the H135’s mission capabilities and safety.

“We have consistently invested to improve the power, the payload, the mission capabilities and most importantly, the safety.”

Martin Schneider,
Programme Director for Airbus

The innovative cockpit layout and the 4-axis autopilot help pilots to reduce the workload onboard, increasing situational awareness and safety. A comment we often hear from pilots flying the H135 is that Helionix provides you with the right data in the right place, when you need it. There are already 150 H135s operating with Helionix. Last year we introduced a new alternate gross weight to the H135, further increasing the take-off weight and useful load for many different missions by up to 120 kg (264 lbs). In addition, we just certified a new single pilot Helionix cockpit for flights in instrument flight rules, enhancing the mission capabilities for operations with one pilot. Moreover, there are plenty of small improvements, like a new external camera installed in the tail boom, providing the pilot with another perspective for hoist/sling missions. And don’t forget we are keeping our avionics system permanently up to date with the introduction of the new Garmin GTN750Xi.

WHAT ARE YOU DOING TO MAKE THE H135 MORE ECO-FRIENDLY?

M.S.: Many factors contribute to an eco-friendly helicopter. For me, the two most important are sound and CO₂ emissions. When it comes to sound, the H135 is the quietest twin-engine helicopter available on the market, far below the ICAO limits. The H135 is also the helicopter with



the smallest CO₂ footprint in the twin-engine class, emitting approximately 10% less CO₂ than products of our direct competitors. We have also started to use sustainable aviation fuel (SAF) for flight-testing our helicopters. At the end of last July, one of our company H135s flew for the first time with SAF, using a 40% kerosene blend. All Airbus helicopters, including the H135, are already certified to fly with as much as a 50% blend. We have also started a SAF user group, where we together with the rotary-wing community are working towards implementing 100% SAF flights for future fleets.

1: NASA operates three H135s equipped with Helionix for security operations at the Florida spaceport.

2: With the lowest direct operating cost in its class, the H135 is one of the most financially attractive twin-engine helicopters to operate.

MILITARY TRAINING

The IFR-certified H135 is a proven benchmark for military training helicopters around the globe. It incorporates the latest technology, allowing future aviators to perform the widest range of training from basic flying to maritime and night time operations, with operators benefiting from the lowest direct maintenance costs (DMCs) and direct operating costs (DOCs) in the light-twin helicopter class.

More than 130 H135s are in use in military training with an accumulation of over 400,000 flight hours. The H135 benefits from a high rate of fleet reliability and simple and cost-effective maintenance. The H135 is used by Germany, Australia and the United Kingdom, among other nations, to train their military rotorcraft personnel.

H135 The right fit



Thanks to continuous upgrades with latest technology and innovation, the H135 has evolved during the last 25 years to become the perfect fit for saving lives and serving communities.

 1,420 helicopters built	 1,347 helicopters in service	 64 operating countries	 301 operators	 6,027,000 flight hours
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AGW

The alternate gross weight (AGW) of the H135 allows customers to fly with extra...

<p>Range Up to +75 NM</p> 	Or	<p>Endurance Up to +40 minutes</p> 	Or	<p>Load Up to +120 kg (264 lb)</p> 
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Maintenance friendly

<p>Unbeatable 1.08 MMH* per FH</p> 	<p>Availability Up to 99%</p> 	<p>Operating cost 14% lower than major competitors</p> 
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*MMH = Maintenance Man Hour

The most environmentally friendly light twin



The H135 comes with the **smallest CO2 footprint** in the twin engine helicopter class

The H135 is able to fly powered by a fuel mix containing a **50% blend of sustainable aviation fuel (SAF)**. SAF has the potential to cut CO2 emissions by up to 80% compared with conventional fossil fuels

It is the **quietest twin engine helicopter** available on the market, setting the standard for a low acoustic footprint in all flight phases

Helionix On board

Airbus Helicopter cockpit family to ease switching from one aircraft to another



4-axis autopilot intuitive and easy to use in all flight conditions

- safety
- comfort

Reduced pilot workload & Increasing situational awareness



The new Single Pilot IFR Helionix cockpit increases the field of view for special missions like aerial work, utility, and law enforcement

Outstanding visibility

Large choice of external mission equipment and lighting solutions

The most compact light twin available on the market

Highly customisable, flexible and proven

360° approachability

Safe high main rotor and protected tail rotor system Fenestron

Rear stretcher loading

New light Airbus HEMS floor and HEMS fixed provision

- Enhanced flexibility and weight savings
- Robust flat surface
- Easier maintenance access without the need to remove the floor

25 years of the H135 in their words

Any momentous birthday comes with its share of reminiscence and anecdote. Here, operators recall special moments and missions in the H135.

Articles: Heather Couthaud / Jörg Michel / Belén Morant

NORTH AMERICA

“A modern, incredible machine”

Geoff Doran, Chief Pilot at Blackcomb Helicopters, and James Houser, President and CEO of the Center for Emergency Medicine of Western Pennsylvania, including STAT Medevac, tell *Rotor* about their experience with their HEMS H135s.

“The most memorable moment I had with the H135 was when we picked it up in Fort Erie at Airbus’ facilities and flew it to the west coast,” says Geoff Doran, Chief Pilot at Blackcomb Helicopters, who specialises in mountain rescues in British Columbia. “We flew through all of Canada’s geographical areas, from Ontario across

the Great Plains, over the Rocky and Coastal Mountains, to British Columbia. Being able to fly that modern, incredible machine across the country was a privilege.”

Doran’s words are echoed by James Houser, President and CEO of the Center for Emergency Medicine of Western Pennsylvania, whose emergency air transport arm is STAT Medevac. “I vividly recall my early days in critical care transport,” he says. “From the 13th floor of UPMC Presbyterian we had a wonderful view of the helipad. Being new, I didn’t know what I was looking at but I knew that the H135 aircraft were different. There was something appealing about their look and styling. You just knew that they were modern.”

CARING FOR PATIENTS

STAT Medevac’s fleet of Airbus helicopters has grown since the company began operating the H135 in 1996, and remains a key element in their strategy of a standardised fleet. Having a familiar cockpit and cabin configuration no matter the individual aircraft provides an extra margin of safety and comfort for pilots and medical crews. “If I had to describe the H135 in one word, it’s ‘workhorse’,” says Houser. “When I look back at our time operating the H135 and see where it is today in the air medical transport industry, it is the go-to

1: With 674 H135s currently flying for the HEMS market, this family of helicopters remains the leader in this segment.



AIR AMBULANCE

The H135 is the market leader in helicopter emergency medical services (HEMS), and is available in a wide range of dedicated EMS interiors that provide operators with a choice of configurations, providing ample room for patient care. Its cabin volume allows for direct access to the patient in the event of emergencies, such as the need to administer cardio-pulmonary resuscitation. Furthermore, the aircraft and its EMS cabin layouts meet the highest standards in patient care, like those required by the European EN13718.

The H135 has up to a 99% availability rate in the EMS segment, with the lowest operating cost in this segment (1.08 MMH/FH). It is especially well adapted to fly in confined and urban environments thanks to its low sound level and CO₂ emissions, as well as its compact size.

aircraft for what we do, caring for patients and transporting the critically ill and injured.” In Blackcomb’s case, the H135’s precision is a crucial aspect for rescuing people, be it “at high elevations in the Coastal Mountains or picking people up off vertical rock faces or out of deep canyons; the H135 is stable underneath us,” says Doran. “Whether we’re doing rescues or putting people onto power lines and need to move the aircraft to get somebody at the bottom of a 150-foot long line to move a small distance—the H135 is there. Our hoist operator was the first to come up with the term: it’s a surgical instrument.”

STAT MEDEVAC (air transport system for Center for Emergency Medicine of Western Pennsylvania)

- **H135 fleet:** 20 H135s (+ 5 H145s)
- **Area of operations:** Pennsylvania (US) and surrounding states
- **Activity:** critical care transport
- **H135 operator since:** 1996



“If I had to describe the H135 in one word, it’s ‘workhorse’.”

James Houser, President and CEO of the Center for Emergency Medicine of Western Pennsylvania

BLACKCOMB HELICOPTERS

- **H135 fleet:** one H135
- **Area of operations:** British Columbia & Alberta (Canada), the US Pacific Northwest
- **Activity:** mountain rescue, power line maintenance, construction, VIP transportation
- **H135 operator since:** 2014



“Our hoist operator was the first to come up with the term: the H135 is a surgical instrument.”

Geoff Doran, Chief Pilot at Blackcomb Helicopters



© Ned Dawson

1

© Blackcomb

© STAT Medevac

1

AUSTRIA “An expressive moment”

Peter Fleischhacker, Head of Flight Operations at ÖAMTC Air Rescue Regiments, talks about the experience of saving lives with the H135 in the mountains.



ÖAMTC AIR RESCUE



“A big part of our missions are in bad weather conditions or by night.”

Peter Fleischhacker,
Head of Flight Operations
at ÖAMTC Air Rescue Regiment

- **H135 fleet:** 28 helicopters, five more H135s with Helionix ordered in 2020
- **Area of operations:** Austria
- **Activity:** Helicopter emergency medical services, search and rescue
- **H135 operator since:** +20 years

“A special flight was with one of our most experienced H135s, flying from base to pick up the Helionix,” remembers Peter Fleischhacker, Head of Flight Operations at ÖAMTC Air Rescue, an Austrian helicopter emergency medical services (HEMS) provider. “On the flight back, it was an expressive moment because I flew IFR hands off from the beginning to the end.” Fleischhacker’s experience with the H135’s Helionix avionics highlights what he likes about the helicopter. Systems help out in the cockpit, whether it be the increased situational awareness with traffic and displays of the surroundings, or the 4-axis autopilot helping lower pilot workload. “A big part of our HEMS missions are in circumstances which do not allow us to look inside the cockpit and outside at the same time. We have bad weather conditions, we fly at night. The autopilot helps us fly from our homebase to our mission area. We can be aware of obstacles, other traffic, wires,” says Fleischhacker.

ÖAMTC Air Rescue operates in Austria in temperatures that can reach 40°C in summer and minus-20°C in winter. Depending on the part of the country they’re serving, the helicopters might fly at altitudes up to 10,000 MSL. Turbulence, wind, and fog are additional factors, depending on the season, as is night flying.

A REFERENCE FOR SAR MISSIONS

Yet despite the challenges, pilots like Fleischhacker cite the H135’s reliability and ability to handle all conditions. Attributes like the autopilot, night vision goggle-compatible cockpit, first limit indicator – highlighting engine data in one indicator – and navigation systems decrease pilot workload and increase situational awareness.

The H135’s wide, unobstructed cabin combined with excellent performance and payload capacity have made it not only a reference for HEMS services but an asset for search and rescue missions. Oversized sliding side doors and rear clamshell doors ease the loading and unloading of patients on the ground, with added safety from the helicopter’s shrouded Fenestron tail rotor.

“During one of my last type rating trainings with a student, he looked at me with shining eyes and said, ‘Thanks for this flying laptop with rotor blades on top’,” says Fleischhacker. “This is how I would describe the H135.”

1: ÖAMTC Air Rescue operates 28 H135 helicopters from 17 permanent bases and 4 additional bases during the wintertime in Austria.

2: In 2019, the operator performed more than 20,000 missions, with on average 52 missions per day.



MOUNTAIN RESCUE

The H135 has excellent slope landing capabilities and can perform rapid search and rescue intervention in high-risk situations, such as in adverse weather and in the aftermath of natural disasters (floods, earthquakes, landslides and heavy snowfalls, etc.). The performance improvements of the latest H135 version further increase its hover performance, of particular importance in high-altitude mountain rescues.

The H135 has already been recognised by pilots and technicians as one of the most complete, reliable and powerful machines for mountain rescue operations⁽¹⁾.

(1) Source: HeliPress



2

BRAZIL

“Public security in the most extreme conditions”

Major Cleriston Oliveira, head of operational security management at CIOPAER tells *Rotor* about using the H135 to reinforce public security in Ceará State.



“This helicopter has helped save many lives in the state of Ceará.”

Major Cleriston Oliveira, head of operational security management at CIOPAER

CIOPAER

- **H135 fleet:** 3 H135s. They were the first operator of the H135 with Helionix in law enforcement missions
- **Area of operations:** Ceará State, in northeastern Brazil
- **Activity:** law enforcement operations, fire fighting, SAR missions and inter-hospital air medical transport
- 26 years of operations

“Our unit is responsible for providing aerial support for all public security and civil defence operations in the state of Ceará. We use the H135 for law enforcement operations, fire fighting, SAR missions and inter-hospital air medical transport,” explains Major Cleriston Oliveira, head of operational security management at CIOPAER (the public security agency of Ceará State) and himself a pilot of the H125, H135, and H145. In 2021, CIOPAER also assumed a completely new mission, when it flew a total of 144 hours to airlift COVID-19 vaccines to where they were most urgently needed.

After 26 years devoted to serving the local population, CIOPAER notched up 893 flight hours during 899 missions in the first six months of 2021 alone, the majority of which were patrols and support missions for law enforcement operations. “On 21 April we received a callout following an accident at a waterfall in the south of our state. A youth aged around 18 had fallen from a height of nearly 50 metres and access was very difficult,” the Major recalls. “While fire fighters were able to administer first aid, it was impossible to lift them to safety. When we arrived on the scene, the H135 showed just how much power it has: our crew members rappelled to the ground, hooked up the victim and hoisted them aboard. The helicopter’s stability played a vital role to ensure the safety and success of the mission. We airlifted the patient to hospital and in the end they managed to recover quickly from their injuries.”

The state of Ceará is located near the equator and combines a spectacular coastline with jungle, mangroves, tropical forest and high temperatures year round. However, it also has altitudes ranging from 500 metres inland to more than 1,000 metres in the Baturité mountain range, which made



1



2

© Government Ceará

operations somewhat difficult with their previous helicopters.

FIRST H135 HELIONIX IN LAW ENFORCEMENT

“With the arrival of the H135, we were able to carry out these types of operations with much more power and better manoeuvrability. That power, together with its characteristics and size, makes it a very versatile and reliable helicopter when we need to land or perch in very confined and unstable spaces,” says Oliveira.

In 2018, CIOPAER also became the first operator of the H135 to use Helionix for law enforcement missions. When asked about his experience with the new avionics suite, Major Oliveira highlights that, “Helionix really helps to reduce workloads and to manage the different aircraft systems at a glance using the flight navigation display. That means we can focus on the task at hand with greater flight safety. In addition, the system monitors the engine and general aircraft performance and informs if any of the parameters are abnormal.

“This helicopter has helped save many lives in the state of Ceará and has also helped us to improve our operational capability. Congratulations on your excellent aircraft and your outstanding evolution over the years,” Oliveira concludes.

1: In 2021, CIOPAER also assumed a completely new mission, flying 144 hours to airlift COVID-19 vaccines to remote locations.

2: The state of Ceará combines coastline with jungle, mangroves, tropical forest and high temperatures year round.



LAW ENFORCEMENT

The H135 family of helicopters is used by police forces around the world, with more than 200 helicopters in-service in this segment, making it the most successful light twin aircraft in the law enforcement segment. The helicopter’s compact design lets it operate and land in hostile environments, as well as in densely populated urban areas. The low external sound signature makes the H135 a neighbourhood-friendly aircraft and also provides a tactical advantage.

The H135’s latest technology also fully integrates the aircraft in a unit’s tactical infrastructure by connecting the helicopter to the ground via different means and its Wi-Fi connectivity.

GERMANY “A very special industry”

HTM currently services 12 wind farms in the German Bight. Bernd Brucherseifer, pilot at HTM, tells *Rotor* about their experience in hoisting at wind power stations with the H135.



© HTM Helicopters

HELICOPTERS TRAVEL MUNICH GmbH (HTM)

- **H135 fleet:** 8 helicopters
- **Area of operations:** German bight, North Sea; Southern Germany and surrounding countries
- **Activity:** Offshore wind farm operations, corporate transportation, training, avalanche blasting, EMS
- **H135 operator since:** 2000

“A success story I recall was when we purchased an H135 in 2009,” says Bernd Brucherseifer, Accountable Manager and pilot at HTM, an operator for offshore wind farm transfers. “It went straight to the coast and has performed offshore and hoist missions ever since. Besides exchanging a transmission proactively at 500 hours, we have never had another issue with that helicopter. That’s something that probably does not occur too often in the aviation world.”

The H135 serves many missions at HTM – from corporate transport and ambulance flights to avalanche blasting – but its main role is in offshore wind farm operation and maintenance, transporting service technicians to the turbines and lowering them by hoist. “Offshore is a very special industry with stringent requirements regarding performance, especially for OEI performance in case you lose an engine,”

says Brucherseifer. He goes on to note that this means the choice of helicopter is limited for the type of work HTM specialises in. Happily, both the H135 and H145 fill the need, and are the reason HTM’s fleet leans heavily toward Airbus products.

MORE THAN 40 YEARS OF EXPERIENCE

Having a reliable helicopter when flights over the German bight are often turbulent, windy and with limited visibility is therefore a prerequisite. Yet when asked what he likes about the H135, Bernd Brucherseifer notes its design and comfort. “The H135 is like a house shoe that you slip into and feel well. I’ve flown with the H135 in thousands of rescue missions and a few hundred hours in offshore and I’ve never had an issue with the helicopter,” he says. “The cockpit is designed with an economy of effort in mind. You find every switch that belongs, say, to the avionics or the electrical system on the same row.”

Moreover, the H135 draws on more than 40 years

1: HTM can consider itself the market leader in terms of hoist cycles on Goodrich winches with more than 74,500 cycles completed.

of experience in the offshore segment, in missions like oil and gas transport and sea pilot transfers. The helicopter’s two engine options (Safran Helicopter Engines’ Arrius 2B2 plus and Pratt & Whitney Canada’s 206 B2) give the H135 excellent performance and power reserves, even in OEI scenarios, along with low fuel consumption. HTM Helicopters is one of the largest helicopter companies in the German-speaking world and employs around 150 people. Since April 2020, it has been fully owned by Heristo Aktiengesellschaft in Bad Rothenfelde, one of the top-selling companies in the German food industry. The core business of the HTM Group, founded in 1997, is the provision of helicopters for civilian customers and the German Armed Forces. The business areas range from offshore operations, air ambulance, and passenger flights to flight training and work flights in the mountains. HTM is the market leader in the field of offshore flights with winch operations. With Intercopter GmbH, the HTM Group has its own maintenance company, which ensures the maintenance of their current fleet of 24 helicopters. The HTM Group has locations in Munich/Taufkirchen, Memmingen, Oberpfaffenhofen, Emden, Borkum, Norden/Norddeich, Helgoland and Nordholz/Cuxhaven.



ENERGY

The rapidly growing environmental energy market is generating a new demand for smaller, more agile helicopters that offer the highest safety standards while being extremely cost efficient. This is where the H135 fits in. The H135 has become the reference light twin aircraft for offshore energy and power line maintenance missions, as well as for harbour piloting, missions which require a similar standard of safety and mission capability.



“Offshore is a very special industry with stringent requirements regarding performance.”

Bernd Brucherseifer,
Accountable Manager and Pilot at HTM

The Icelandic Coast Guard performing mountain training near the volcanic eruption in Gellingadalir.



ARGENTINA THE H145 IN TIERRA DEL FUEGO

Article: Renata Ahumada – Photos: Helicópteros Marinos

Helicópteros Marinos will be the first operator of the five-bladed H145 in Argentina. The two new helicopters, which will arrive in South America towards the end of this year, will perform offshore SAR and oil & gas operations in the world’s southernmost region: Tierra del Fuego.

Helicópteros Marinos has been based in Tierra del Fuego in southern Argentina for more than 34 years, operating from the city of Río Grande and the Total Austral operations base in Río Cullen to provide support for the production and exploration platforms of its customer, TotalEnergies. Located between 10 and 50 NM off the coast, the platforms of the concession zone managed by TotalEnergies comprise the world’s southernmost offshore oil and gas production field. Since 2010, Helicópteros Marinos has been providing passenger and cargo transport to the platforms using two four-bladed H145 helicopters, which have clocked more than 13,000 flight hours. However, customer demand for greater safety, comfort, load capacity and range has prompted the company to renew its fleet.

IMPROVED FEATURES

“One of the reasons for renewing the fleet was that we needed a greater available payload. The new helicopter achieves this due to its lightweight design, offering a greater maximum take-off weight than the earlier version,” explains Marcelo Florio, CEO of Helicópteros Marinos. “Secondly, the five-bladed version provides increased power, ensuring we can keep flying safely in all flight conditions, including situations of engine failure and when operating from offshore platforms or ships. “In addition, the Helionix avionics suite – with its 4-axis autopilot – considerably reduces crew

“The five-bladed version provides increased power, ensuring we can keep flying safely in all flight conditions, including OEI situations.”

Marcelo Florio,
CEO of Helicópteros Marinos

workloads, especially in instrument flight conditions, which are very frequent in these latitudes. The autopilot offers the possibility of hover flight with pinpoint accuracy, allowing our second helicopter, which provides SAR support, to perform rescue winch operations in very low visibility conditions over water,” he adds. There are no SAR services with immediate response capacity in the region where Helicópteros Marinos operates. Coupled with low water temperatures and strong winds, survival time in the event of a forced water landing is minimal. Due to these hostile conditions, Total has established strict safety protocols, with one of the two aircraft devoted exclusively to SAR support while the main helicopter

performs passenger and cargo transport missions to the platforms.

THE IDEAL HELICOPTER FOR COMPLEX LOGISTICAL CONDITIONS

“Over the last 12 years we have achieved very high availability levels with the H145. We are confident that with the new version we will continue to reduce maintenance downtime to ensure we offer a better quality of service, an essential aspect in an area with such difficult access and complex logistics,” Florio explains. To overcome these logistical difficulties, Helicópteros Marinos also performs external and internal load transport operations to both platforms and ships. The helicopters are equipped with a state-of-the-art cargo hook, which can even be used for personnel recovery in emergency situations. “Other advantages of the five-bladed H145 are its reduced rotor diameter and blade folding capabilities. The health and usage monitoring system (HUMS) also sends real-time data on each landing and take-off on the different platforms to our maintenance base. These records are monitored daily by both our technicians and Airbus specialists, allowing us to perform predictive analysis to anticipate maintenance tasks and thereby enhance safety levels,” adds Florio.

1: One of the main reasons Helicópteros Marinos chose the five-bladed H145 was the greater payload it offers.

2: Helicópteros Marinos have been operating the previous versions of the H145 for 12 years.

HELICÓPTEROS MARINOS

Founded: 1978

Fleet: 2 four-bladed H145s, 2 five-bladed H145s, 1 H125

Missions: passenger and cargo transport to support offshore and onshore oil & gas operations, medical air transport, seismic prospecting for oil and mining operations, search and rescue, inspection of high voltage power lines and major helicopter maintenance.

Bases: main base - Don Torcuato, Buenos Aires. Workshop - Río Cullen, Tierra del Fuego.

Other: approved Airbus Helicopters and Safran Maintenance Service Centre for Argentina and Uruguay.

A LONG-STANDING RELATIONSHIP WITH AIRBUS

The relationship between Helicópteros Marinos and Airbus Helicopters goes back more than 40 years, during which the company has amassed more than 95,000 flight hours with Airbus aircraft. “This means we have detailed knowledge of the maintenance programmes and the peculiarities of the procedures for importing spare parts to our country, knowledge which we can also pass on to new owners operating Airbus aircraft,” says Florio. In addition to its role as an operator, Helicópteros Marinos also has a maintenance workshop, which is an approved Airbus Service Centre. The workshop is currently qualified to service the H120, H125, H130, H145 and Dauphin family models. Its hangar occupying over 4,000 m² is the largest facility in Argentina devoted exclusively to helicopter maintenance. It includes a heliport for day and night operations and an FBO service for owners who wish to park their aircraft in its facilities.





FRANCE MARATHON RAID FOR THE CAÏMAN

Equipped with additional fuel tanks, three NH90 Caïman helicopters from the 1st Combat Helicopter Regiment (RHC) of the French Army Light Aviation (ALAT) unit completed a two-stage mission lasting more than nine hours. The raid demonstrated the long-range penetration capabilities of their new tactical helicopter.

Article: Alexandre Marchand – Photos: Frederic Lert

On Thursday, 10 June, at the Phalsbourg base (north-eastern France), two hours after midnight, the three Caïman helicopters emerged from their hangar. They had been refuelled the day before and carefully checked. They were at their maximum weight of 11 tonnes, including almost 3,300 kg of fuel, a configuration never seen before in France and directly linked to the use of two 625-litre (500 kg) external tanks on each aircraft and an additional 437-litre (350 kg) tank in the hold. Together with the two tonnes of fuel in its fuselage tanks, the NH90s had a range of almost six hours of flight.

The stage was set for an exceptional raid which would allow the three aircraft, identified as Pulsar

70, 71 and 72, to travel across France and back, with only one refuelling stop. A technical feat to be accomplished tactically, with the recovery of a dummy target and involvement of a Tiger escort.

NEW HORIZONS

“The use of additional tanks and the longer range they offer our Caïman aircraft is an additional element in the preparation for high-intensity combat, which is now the focus of our thinking in terms of tactics, the use of forces and operational readiness,” explained General Vallette d’Osia, ALAT commander.

Prior to the mission, the crew of the 1st RHC selected for the raid carried out assimilation flights

1: Tigers escorting the Caïmans on the return leg of the raid.

2: Each Caïman carries two 625-litre external tanks.

3: The mission was a non-stop flight across France with 6 hours of autonomy.

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General Vallette d’Osia,
ALAT commander

of around 45 minutes. “Pilots, commanders and flight engineers were able to measure the impact of this maximum weight on the aircraft’s flight performance,” said Captain Matthieu, commander of EHMA 3 (Tactical and Assault Helicopter Squadron) and mission commander.

At the base in Phalsbourg, it was explained:

“The configuration remains very interesting for positioning flights, medical evacuations or special operations.” However, with these tanks on board, the aircraft’s payload is largely consumed by the fuel being carried. Launching massive aerial assaults is therefore out of the question.

In the long term, ALAT could also study an asymmetrical configuration, with a tank on one side and an M3M heavy machine gun on the other. This would combine autonomy, firepower and the ability to carry commandos.

GROWING COMPLEXITY

Getting back to the Pulsar mission though: after taking off from Phalsbourg, the three helicopters reached the Mediterranean coast at first light. They landed on the Île du Levant, where they picked up about 20 commandos, simulating the evacuation of a group of civilians. They then took off again and headed for the Canjuers military camp, where they took on additional fuel after a tactical flight phase. The return flight went straight to Phalsbourg, where they landed at 1 p.m., having covered a total of 2,200 km in 9 hours and 20 minutes of flight, including 4 hours at night. The three aircraft consumed an average of 550 kg of fuel per hour throughout the journey, at an average speed of 120 knots.

“This raid is a first step,” said General Vallette d’Osia. “In the future, we will repeat the same kind of exercise, adding more elements and challenges, in the context of increasingly complex scenarios, but always in line with the Caïman’s formidable capabilities”.



TESTING THE HYBRID FUTURE

The next generation of helicopters will benefit from disruptive technologies that are currently being developed in Airbus laboratories. The engine back-up system (EBS) is one of these innovations, which will increase performance and safety, especially for single-engine aircraft.

Article: Alexandre Marchand



“First step towards a future hybrid propulsion system”

“The engine back-up system is a good example of the incremental approach in our innovation strategy. The current EBS flights are a very important first step towards a future hybrid propulsion system and we already foresee a second phase of the project with more energy and power on board. We are looking at developing a parallel hybrid propulsion system mixing thermal and electrical energy together with the aim of optimising fuel consumption and enabling hybrid single engine flights over urban areas.”

Tomasz Krynski,
Head of Research and Innovation at Airbus Helicopters.



WHAT IS IT?

The EBS combines a 100 Kw electric motor connected to the main gearbox, which can provide electrical power for 30 seconds in the event of an engine failure. By giving the pilot extra time to react and maintain rotor speed, the engine back-up system contributes to a safer and smoother autorotation manoeuvre to the ground. An ongoing test campaign, conducted last September and October on board the Flightlab, has enabled the safety and performance benefits of such a device to be accurately assessed. The test programme included the simulation of engine failure during different phases of flight, with all associated constraints, including those during take-off and landing.



MULTI-LEVEL BENEFITS EXPECTED

With the EBS, the first benefit is safety: in the event of an engine failure, pilots can adjust their descent by injecting power when they need it and choose their landing point more easily than with a simple autorotation. The second benefit is performance: the flight campaign also aims to demonstrate a performance increase, thanks to the availability of prompt electrical power input. The potential benefit in terms of maximum take-off weight could compensate for the mass of the EBS system itself and provide helicopter operators with additional payload.



CERTIFICATION AS A GOAL

Initial work on the use of an electrical back-up engine took place in 2011. Since then, reduction in the equipment’s weight and volume, improvements in energy density and better integration into the airframe have made it possible to obtain an EBS that weighs only 120 kg for a TRL6⁽¹⁾ maturity level. Previous work with EASA has also made it possible to consider certifying and manufacturing this hybrid engine solution, the first of its kind in the helicopter industry. In addition to its initial use in the future on a new-generation single-engine aircraft, this technical solution could be used on eVTOLs and twin-engine aircraft to improve performance, or even for heavier hybrid applications requiring more power.

(1) TRL6: Technology Readiness Level. Level 6 is reached when the correct functioning of the equipment is validated in a simulated environment.

HAITI IN THE EYE OF TWO STORMS

Article: Heather Couthaud

When a 7.2 earthquake hit Haiti this summer, the Puerto Rico National Guard was called up to be part of the disaster response effort. Their UH-72 Lakota turned out to be an asset for ISR missions.

Images can be haunting. Corrugated roofs lying twisted on the rubble of homes they sheltered. People dotted like colorful pins in the grey debris where once stood a school or market. The human tragedy of the magnitude-7.2 earthquake that rocked Haiti on 14 August is still ongoing. Its devastation was made worse by the

passage of Tropical Storm Grace, which added landslides and flooding to the “perfect storm” of political instability, social hardship, and food insecurity facing the country.

RELIEF FOR A POPULATION IN NEED

An international disaster response was on the scene from the first days after the quake. Coordinating the aerial arm of this effort for the United States was the Department of Defense US Southern Command (SOUTHCOM), which called on assets from the Puerto Rico National Guard. Their team of 22 military reservists and 3 helicopters – among them a UH-72 Lakota – departed on 17 August and remained three weeks.

They were sorely needed. The first line of response was to search for and rescue injured Haitians, as well as transport some 70 members of disaster assistance response teams. In all, they carried out nine medical evacuations and delivered more than 17,300 pounds (7.7 kg) of supplies, food and shelter.

UNIQUE CAPABILITIES

Within days, another issue became apparent – the necessity for an informed view of the scale of the destruction. Col. Samuel Agosto, Task Force Puerto Rico-Haiti Commander, recalls the need from aid agencies to survey available routes, bridges

and runways—information that was critical for building field hospitals, for instance, which require flying in large resources like generators and water purification systems. “To bring those assets to the area, we needed to understand if the runway was capable,” says Col. Agosto. “The Lakota was unique among the airframes there,” the colonel says. “It drew a lot of attention from the commander asking what its capability could bring. We explained it had a video camera and could be used for intelligence, surveillance, reconnaissance [ISR] missions.” With the Joint Task Force’s need to understand the environment, “the Lakota became vital. Its ISR helped in analysis and future planning,” Col. Agosto adds. The Puerto Rico National Guard carried out 26 aerial surveys and the Lakota’s ISR gathering ultimately allowed more than 700,000 pounds (317 kg) of international aid to reach communities in Jérémie, Les Cayes, Miragoâne, Petit Trou de Nippes and Maniche, among others. “There was a lot of international engagement, a lot of synchronisation,” says Col. Agosto. “Our folks there did a great job.”

*USAID: US Agency for International Development



US National Guard

The US National Guard is comprised of 54 units: one for each of the 50 states; plus the District of Columbia and the three territories of Puerto Rico, the US Virgin Islands and Guam. Their role is to supply trained military units to protect life and property, both domestically and in defense of the US internationally. Through the State Partnership Program, several National Guard organisations also have a State Partner internationally which they may be called on to help. Although Louisiana’s National Guard would ordinarily have responded to Haiti as its State partner, Louisiana itself was bracing for Hurricane Ida—prompting the call to Puerto Rico’s National Guard, which is allied with the Dominican Republic and Honduras. Despite the procedural intricacy of mounting a relief mission – compounded by COVID-19 and the need to vaccinate and medicate troops against typhoid, yellow fever and malaria – the crisis in Haiti saw an exceptional mobilisation of the National Guard.



AFRICA
**PROTECTING CROPS
 FROM AN ENEMY
 THE SIZE OF A THUMB**

H125s are the perfect tool for locating swarms of desert locusts in uninhabited lands and helping to forecast where they'll land next.

Article: Heather Couthaud. Photos: Savannah Helicopters

Their coming can look like a pink smudge on the horizon as they quickly cover up to 200 km in a day. In 24 hours, they eat their own weight in grains like teff, millet and khat. When they take off again, they leave behind human starvation.

The 2020-2021 desert locust crisis has been devastating due to favourable weather conditions, resulting in the destruction of East Africa's crops and food resources. Combatting it requires 24/7 surveillance to spot the swarms of insects and their non-flying offspring in the act of devouring fields of grain and coffee. The United Nations Food and Agriculture Organization (FAO) is behind the efforts to monitor and fight the locust outbreak, and is drawing on numerous resources.

1: Working with an FAO coordinator, Savannah's teams went to remote areas where swarms go overlooked.

2: When desert locusts arrive somewhere, they are destructive, ravenously devouring vegetation.

3: Savannah Helicopters has bases in Pretoria, George and Cape Town.

One is a trio of H125s operated by Savannah Helicopters, which won a tender in collaboration with Zemen Flying Services, a local Ethiopian operator, to conduct survey flights in Ethiopia to locate the insects. Locust swarms in Ethiopia, Somalia and Kenya hitch a ride on eastern winds, moving across the region in numbers that reach 50 million per hectare. Covering several hectares, the locust threat to human food security is high.

A CONTINENT IN LOCKDOWN

The H125s first had to be ferried from Savannah Helicopters' base in South Africa. An early attempt was scotched when the continent went into lockdown to prevent the spread of COVID-19.

Paying no heed to human plagues, the locusts continued their advancement, and Savannah Helicopters made a second attempt across Zimbabwe, Tanzania, Malawi and Kenya, and eventually to Addis Ababa, Ethiopia. As if a twenty-two flight hour journey wasn't enough, with the prospect of meeting crawly insects at the end, in compliance with COVID-19 protocols the crews had to bed down in tents beside the helicopters at night to avoid quarantining at each stop.

PLAGUES OF LOCUSTS

After a 10-day isolation on arrival, the crews were stationed at three bases in Ethiopia, where they soon met their adversaries. "You see them clearly because they're dense. One of our pilots

"The seasons changed, the locusts seem to disappear but then show up again... like the Ethiopians say, 'it is the cycle of the insect.'"

Conrad Maree, owner of Savannah Helicopters.



SAVANNAH HELICOPTERS

Founded: 2004

Staff: 22, of which 10 pilots

Bases: Pretoria, Cape Town and George (South Africa)

Fleet: 10 helicopters of which 9 H125s

flew around one of these swarms and they could calculate the area: it was 35,000 hectares. That's enormous," says Conrad Maree, Savannah Helicopters' owner.

From April to June 2021, each helicopter flew 70 to 80 hours a month. Working with an FAO coordinator, Savannah's teams went to remote areas where swarms go overlooked. Locals contributed to sightings, leading to investigations that sometimes required the H125s to land in sandy unprepared sites.

"The helicopters performed without any major snag and never disappointed," says Maree. "There's a lot of high and steep terrain. Historically, we've operated the Ecureuil in worse areas and they've never let us down."

"We are very proud to see the H125 involved in the combat against the desert locust swarms in East Africa," says Gilbert Do Nascimento, Airbus South Africa Managing Director. "The H125 is a versatile platform capable of conducting a broad array of missions for the benefit of local populations, especially in Africa. We are standing by Savannah's side making sure they receive the necessary support to conduct their vital missions."

At the time of writing, Savannah Helicopters had replaced one of its H125s for another equipped with a spray system and is attacking hopper infestations from the air.

"Being vigilant has shown to be the solution in dealing with the desert locust infestation. The Ecureuil has proven that it is the most capable platform for such remote and challenging conditions," says Maree.



BEING FIRST ON THE SCENE NEEDS TOTAL SUPPORT BEHIND THE SCENES.



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