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ROTOR

BY

AIRBUS HELICOPTERS

IN THEIR WORDS
Firefighting on the night shift

SERVICES
Overhauling the overhaul

OFF THE BEATEN TRACK
Science and helicopters in the Antarctic

The H140: raising the bar

CONTENTS

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Bruno Even, CEO of Airbus Helicopters

"The H140 makes perfect sense to operators. We know, because they helped us design it."

For those who are passionate about aviation, there is always something exciting about the unveiling of a brand-new aircraft. Having said that, the more special the helicopter, the more special the moment. Especially as this is a helicopter which makes perfect sense to operators. We know, because they helped us design it.

Everyone loves the H135 but there are operators who would like more—and we are proud to give them this option. We are confident the new H140's spacious cabin will generate interest from commercial transport operators and from private and business aviation customers around the world. However, with a huge replacement wave of emergency medical services aircraft on the horizon, we have placed a special emphasis on ensuring this helicopter will be the perfect choice for HEMS operators who are looking for that extra space and performance. It's the ideal complement to an H135 fleet. We worked hand in hand with some of the biggest companies delivering HEMS operations to get their feedback and create a product that will make a difference in the most urgent of situations.

Airbus' range of helicopters has always played a role in these essential operations. In recent months the news has been filled with images of devastating fires—and of helicopters and their crews working relentlessly to fight them, save lives and prevent more damage. Talon with their Dauphin and night vision goggles, Custom Helicopters with their Super Puma and Hillsboro with their five-bladed H145 show how crucial helicopters and their crew are to the communities that they serve.

Finally, on the subject of protecting the planet, the H125 is demonstrating its ability to perform missions which are literally polar opposites, in the harsh conditions of the Arctic and Antarctic! Pole Air and DAP are using the H125 to fly medical, scientific and scouting missions, as well as gathering essential research. I have always believed our helicopters and operators would go to the ends of the earth—and now I have the proof.

FEATURED ARTICLES

The H140: raising the bar

Introducing Airbus Helicopters' H140, a light twin-engine helicopter that aims to lift performance, cost-effectiveness and passenger comfort to a new level.

With its bigger cabin, larger windows, five-bladed rotor and brand-new T-tail, the helicopter has been designed in close collaboration with operators. The H140 gives them more of what they need for their missions.
A new standard is being set.

Articles: Ben Peggie and Jörg Michel

H140: finding the perfect balance on the cutting edge

Airbus Helicopters' latest helicopter has been designed to be high performance and highly efficient. Dr. Dirk Petry, Vice President H135 and H140 Programmes, explains how the programme arrived at the ideal blend.

1: Dr. Dirk Petry, Vice President H135 and H140 Programmes.

2: The H140 will offer a perfect combination of low operating cost, larger cabin and a better performance than its rivals.

3: With its T-tail and five-bladed rotor, the H140 is immediately distinguishable.

4: The H140's spacious cabin can comfortably sit up to six passengers.

WHAT WERE THE KEY DRIVERS FOR LAUNCHING THE H140?

Dirk Petry: The major motivation is the clear market demand for efficient, high performance helicopters with larger cabins, low operating cost and an attractive acquisition price. The H140 meets this demand, providing a spacious cabin that can seat up to six passengers comfortably, in a helicopter that is easy to maintain. It is essentially an efficient, compact helicopter with an optimised cabin that performs well at altitude and in hot conditions as well. There is also a large replacement market for helicopters that are performing medical missions worldwide. The H140 is designed to perfectly meet the needs of these operators. Other helicopters offer a large cabin, but they are not optimally positioned in terms of operating cost or performance. We are bringing a product to the market which will offer a perfect combination of low operating cost, larger cabin and a better performance than its rivals.

WHAT IS BEING INTRODUCED TO THE DESIGN OF THIS HELICOPTER THAT WILL ENSURE SUCH A HIGH PERFORMANCE?

D.P.: Naturally, as it is a new helicopter, the H140 will benefit from design solutions, proven throughout the rest of the Airbus Helicopters range —and from our demonstrators such as Bluecopter. The most obvious examples are the T-shaped horizontal stabiliser, the new Fenestron design and the five-bladed rotor. What it will deliver to operators is an attractive ratio of useful load versus maximum takeoff weight (MTOW). It will be fast but with a smooth flight which will really make an impact for medical operators. Indeed, for our operators' helicopter emergency medical service missions, the H140 will offer excellent rear-loading capability and a cabin that is the perfect size for their patients and crew—meaning a new standard in terms of the care that they can deliver. This means it will be easier to load patients onto the helicopter as well as allowing more complex intensive care missions.

WILL THE H140 ALSO DELIVER MISSIONS OTHER THAN HEMS?

D.P.: Yes, definitely. In keeping with the versatility of Airbus Helicopters' range, the H140 will be a fully multi-mission helicopter. While we have designed a cabin with HEMS operators, like every Airbus helicopter, the H140 will feature the modularity necessary to perform a complete range of missions. As such, it is a multi-purpose helicopter, which can cover law enforcement, firefighting and ultimately all mission segments. Its large cabin, for example, will prove very interesting to the private business aviation sector. It is also well worth mentioning how seamlessly the cabin can be modified for different missions. It is designed to allow quick cabin conversions, so public service operators that fulfill a range of missions will have effortless transitions. For instance, in countries where the paramedic and firefighting services are conducted by one operator, this could be very useful.

HOW MANY PEOPLE ARE WORKING ON THE H140 PROGRAMME?

D.P.: There are several hundred people working on this project—across many sites. All the company is contributing to the development, production and support of this helicopter. In this context Airbus Helicopters' site specialisation is playing a huge role. The final assembly line and the programme are based in Donauwörth (Germany) where the airframe is assembled and the airframe major component assembly is integrated as well; the dynamic components are being done in Marignane (France), Paris Le Bourget is supplying the main rotor blades and Albacete (Spain) is assembling the tail boom. This shows you the sheer scope of the project to design and deliver this helicopter. Thankfully we can count on an incredible team of colleagues to work together to do it.

The plateau that makes things flow

For Karsten Krok, Programme Manager – Product Development of the H140, the key to developing a brand-new helicopter is teamwork.

1: Karsten Krok, Programme Manager – Product Development of the H140.

2: A close view of the H140's T-tail.

3: The H140's tail boom has the same design principles as the H145. The new helicopter integrates technology proven throughout Airbus Helicopters' range.

4: The five-bladed rotor will reduce vibrations for a smooth flight—it was also featured on the H145.

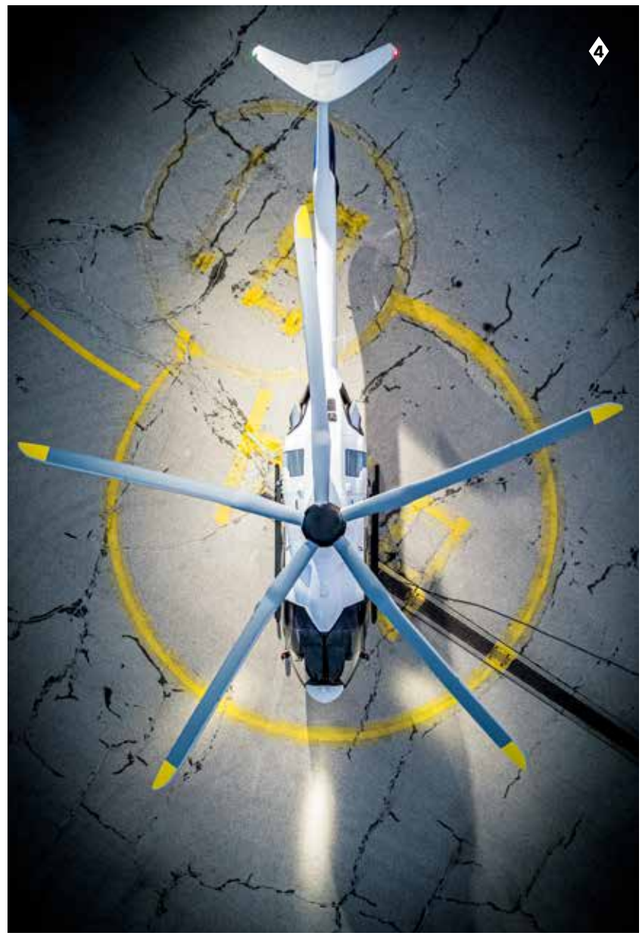
"It only works if everyone helps and supports each other," Karsten Krok insists. "There are myriad challenges to overcome during such a project where someone has to step in and provide support, so it's always team, team, team." At the heart of the design phase of the H140 project has been the creation of a specific integrated plateau, one that brought the key teams together in one space, making it easier to work together. "It means we have all of the functions together... bringing benefits to the development on one plateau," explains Krok. "We have Engineering, Operations and also Support & Services colleagues on one floor in the direct vicinity of the Prototype shop where we ensure that we can collaborate." Krok also points out that this implicit teamwork must flourish equally across each Airbus Helicopters site. "Although the main plateau is based in Donauwörth, a big chunk of the H140 work is done in Marignane so there is also a plateau there, which, among other things, is working on the dynamic systems, environmental control systems and engine integration. There is also a direct link to Support & Services and Operations. Then, of course, we benefit from site specialisation, with the rotor blades produced in Paris Le Bourget and the tail boom assembly in Albacete. Everyone is playing their part in this project."

SUCCESS BREEDS SUCCESS

It is not only teamwork that has been integrated in the H140. Airbus' latest helicopter incorporates some of the best design features from the company's range of helicopters. "Starting with the most obvious, the H140 has the five-bladed rotor which is based on the H145 design," notes Krok. "If we look at the tail boom, it has been elongated and there is the T-tail on top. Nonetheless, the basic part of the tail boom has the same design principles as the H145. Even down to the level of components and fasteners, we are, where possible, reusing the design of different programmes, or at least reusing the technology or the architecture of this design. Examples are the door handles, taken from the H160 design, the electronic master boxes taken from the H145 and not forgetting our Helionix avionics suite which we share with the H135, H145, H160 and H175." The H140 is also integrating a significant number of composite materials. One which Krok particularly highlights is the new composite stator, which comprises a single-shot part. "The complete shroud, stator vanes and the tail gear box mounting is done at once in one tooling," he states. "It's really an advantage to have a very complex part with an integrated design as we are able to deliver more functions in one part. It means the assembly time is reduced to a minimum on top of an advantage to weight, cost and performance."

CUSTOMER FOCUSED

The plateau also has a key function in implementing the feedback gleaned from the helicopter emergency medical services (HEMS) operators. "We have direct exchange with our Support & Service experts on the plateau," Krok states. "And we are implementing feedback into this newly designed helicopter, delivering a cabin that responds to our operators' needs." Unsurprisingly, the fruits of this collaboration have been pleasing for Krok. "I'm very proud of the project," he says smiling. "It's unique to have the chance to join such a project from the start of development, and follow the helicopter's path to its entry into service. Getting together with customers and seeing that the H140 meets their requirements exactly, it's really satisfying."



H140: designed by lifesavers

The H135 is recognised as a global leader for helicopter emergency medical services (HEMS). With this market a key target for the H140, gathering feedback and insight from experienced operators builds on the benchmark for the design and integration of many of the helicopter's new features, as Stefan Bestle (right) explains.

Around 3,000 helicopters fly HEMS operations around the world, over half of which are designed and built by Airbus. As a market leader, it stands to reason that the H135 is already an excellent option for medical missions. Though when conceptualising a brand-new helicopter geared towards the medical segment, the company wanted to go even further. The aim for the H140 is to create a modern, fully modular, versatile cabin that can be perfectly tailored for EMS operations and the crew, who dedicate their time to saving lives.

GETTING THE PERFECT FIT

"We've been working with some of the biggest EMS operators in the world," says Stefan Bestle, H140 Marketing Product Manager and Airbus Key Segment Manager for HEMS missions. Bestle worked closely and extensively with a range of medical operators to ensure their feedback fed into the development of the H140. "The H140 really reflects what the customer requires," explains Bestle. "We did very specific workshops, meetings and interviews. They wanted the cabin size to be bigger and to improve the performance of the helicopter where possible," explains Bestle, but it wasn't a case where the customers simply wanted the biggest possible cabin. "Bigger also comes with some disadvantages. You have more downwash; you need more space to land. Our customers also want the helicopter to be compact. We feel we achieved the perfect balance, offering a long, wide and tall cabin but offering efficiency and agility."

ACCESS AND ERGONOMICS

Having achieved the perfect cabin size, the next priority was innovating the medical cabin—creating a more ergonomic workspace for the crew to perform their jobs. The cabin, featuring a HEMS floor, will offer operators flexibility and modularity. There will be the option to have the stretcher on the left or right-hand side, or even have two stretchers. Also high on the operator wish lists was easy access. "Together with the clients, we wanted to facilitate easier patient loading from the rear of the helicopter," states Bestle. "Whether it is loading patients with CPR devices, roll-in stretchers, or those with specific stretcher bridges carrying medical devices in an upright position, there was an opportunity to improve access for all types of patients. The position of the tail boom has been raised, meaning there's less necessity for the crew to duck down, and the horizontal stabiliser has been removed, eliminating an obstacle when rear loading. The whole rear door opening is bigger. We will have a straight-edge loading edge, which is more comfortable when you do stretcher loading—and safer. The H140 will also have specific HEMS lighting systems, externally, in the cabin and for loading," says Bestle.

PUTTING THE KEY IN TURNKEY

In addition to the H140's HEMS configurations, a fixed provision concept is being developed, which aims to both increase the efficiency of the helicopter and its delivery. "We are looking holistically at the overall equipped aircraft, not only the Airbus Helicopters part," states Bestle. "We're looking at the EMS equipment, which is usually installed later. By offering specific and modular mechanical and electrical HEMS provisions and lighting solutions, plus a dedicated HEMS floor, we will reduce the overall weight. But also by offering a turnkey solution, we are trying to reduce the time which is needed to do additional mass installations. The objective is for everything to be installed in our facilities, so the customer receives a helicopter fully-equipped for EMS."

1: Stefan Bestle, H140 Marketing Product Manager and Airbus Key Segment Manager for HEMS missions.

2: The H140's HEMS cabin has been specifically designed in partnership with HEMS operators, creating optimal working conditions for crew.

3: The H140 cabin is versatile and modular, allowing operators to choose their preferred configuration.

Continuous development reaches new heights

When a new helicopter is launched it has to offer significant advantages over current generation models. Driven by Airbus Helicopters' culture of continuous innovation, H140 Chief Engineer Christian Wehle is the person responsible for ensuring the helicopter will rise to the challenge.

1: Christian Wehle, H140 Chief Engineer.

2: The H140's Fenestron will be more powerful for operations at altitude. This enhances safety for mountain operations.

3: T-time. The H140's tail design will offer up to 80 kg of lift in hover conditions.

4: A face on view of the H140.

5: The aerodynamic shape of the H140 has been optimised to achieve higher speed at equal power. This is a direct transfer of technology tested on the Bluecopter.

WHAT HAS BEEN AIRBUS HELICOPTERS' APPROACH IN TERMS OF INTRODUCING INNOVATIONS INTO THE H140?

Christian Wehle: The primary trigger of everything we are doing is cabin space, where we have invested quite a lot of time working with customers to get a new interior layout that is not only the right size, but also uses the space and volume more ergonomically. The second point is that the five-bladed main rotor is a perfect fit for the H140 and this will bring many advantages in terms of cabin comfort and ride comfort. The third aspect is mission performance, whether that be its operational range or its performance at altitude. The third point is basically a combination of two points: there's one very obvious new feature, the T-tail configuration, moving the horizontal stabiliser to this extreme position and outside the downwash of the main rotor. This offers a performance advantage at a magnitude of up to 80 kg of additional lift in hover conditions for no invested engine power. Last but not least, we worked on the Fenestron to make it more powerful for altitude operations, which also offers more safety for our customers operating in mountain areas.

HOW MUCH OF A ROLE DID BLUECOPTER PLAY IN THE DEVELOPMENT OF THE H140?

C.W.: I led the Bluecopter activities relating to dynamic systems and the airframe roughly 15 years ago. With Bluecopter, we were trying to be quite extreme in testing new technologies, with a focus on noise reduction, simplification and power efficiency. And when you look at the H140 today, a lot of these technologies found a nearly direct implementation. For example, when you look at the Fenestron stator, it is very much like what we did on the Bluecopter. Two other things come to mind. One is speed: we optimised the aerodynamic shape of the aircraft in the frame of Bluecopter to achieve higher speed at equal power and what we have today on the H140 is a direct transfer of this technology. The other thing that comes to mind is the main rotor: we went to the very extreme in the frame of the Bluecopter, maybe a bit too far in terms of blade twist and diameter, but this was intentional, and now one small step back from this is directly what you find on the H140. It's always easy in hindsight but I would say the Bluecopter project showed the relevance of our investment in techno bricks and the important role they play in our research and technology strategy.

AS THE H140'S CHIEF ENGINEER, HOW DOES IT FEEL TO SEE THE NEW HELICOPTER READY TO BE LAUNCHED TO THE WORLD?

C.W.: I have been into helicopters and helicopter development my entire working life. Now in this role as the chief engineer, I have kind of reached the peak of what I have been looking for so far, combining all of the bricks of a helicopter in a single development project. I am learning an enormous amount because, although I have seen many areas of helicopter development in the past, I have never seen everything so comprehensively with all aspects. So, I would say that this is extremely satisfying, but also extremely challenging.

Rising to the occasion: getting the H140 ready to pass the test

Airbus Helicopters' German Chief Test Pilot, Volker Bau, is the person responsible for charting the H140's flight path to certification.

1: Chief Test Pilot, Volker Bau.

"There's no space for emotions during flight tests," says Volker Bau and as one of Airbus Helicopters' chief test pilots since 2011, he knows what he's talking about. With 20 years of flight experience in the military followed by a flight test career now in its 25th year, the H140 campaign is the latest landmark in his career. "It's definitely not another day at the office. It's emotional when you come home, but before that, you're very focused on the mission. It's a kind of positive stress, you work in a team, you choose what you're going to test and, as part of the team, you solve any problems."

HOT, HIGH AND COLD

For every campaign, everything is meticulously planned. "We do a risk assessment for every flight," says Bau. "So if we do CAT A in high altitude by shutting down one engine and we can land safely, then we will carefully increase the weight of the aircraft and see how it operates under these new 'conditions'. When we are on a campaign, there are around 10 people sitting in the briefing and debriefing to discuss the results and how we can improve, how we can change the rotor law, the rotor speed, the engines, the full authority digital engine control (FADEC)." The H140's flight testing will focus on the helicopter's performance in hot, high and cold conditions. "We have to go to environments where it is very cold: we are looking for -40°C or less," explains Bau. "Where it's hot: we are looking for +45°C or more. And for high altitude that's around 10,000 ft up to 20,000 ft."

THE RIGOUR THAT GETS IT RIGHT

One thing that Bau emphasises is that the process is extremely thorough. "On this prototype, we always have telemetry. So, there are up to 10 people in a room monitoring everything. They see every movement you make; they see every input. They hear every voice, every word, and they comment on everything you do. You are monitored," he emphasises. Whilst absolute rigour is essential to create the safest possible helicopter, it is also clearly beneficial to the quality of the product that will be on the market. This is due to the influence pilots have during flight test campaigns, providing feedback that is actioned. "The most challenging aspects are, naturally, working to test vital functions of the helicopter as safely as possible, working in this team and working to develop the most effective helicopter possible, for the operator to use later," says Bau. "In the early days of testing the H145 I was not happy with where the engine knobs were and where the generator knobs were. So, I drafted on paper where I would like to have these knobs, gave it to the team and the next day I had the technical drawing. Today every helicopter that we sell has this installation of knobs. So yes, pilots have influence, and this is part of the challenge, to ultimately ensure that the operator can fulfil their mission optimally, efficiently and safely."

AT THE CONTROLS FOR THE FIRST FLIGHT

With a new cabin, T-tail, and Fenestron, the H140 is a brand-new helicopter and, as one of the first people to fly it, Bau is one of a select few who can describe how it flies. He is happy with the early results. "We had this stroke of genius on the H145 with these five-bladed rotors which reduced the vibrations to almost zero and we now see the exact same positive effect on the H140 with its five-bladed rotor," he notes.

2: The H140's five-bladed rotor helps reduce vibrations to "almost nothing".

3: Testing vital functions of the helicopter as safely as possible is a vital challenge for Volker Bau and the team.

4: The feedback supplied by the flight test team leads to adjustments in the performance of the helicopter.

H140

The brand-new Airbus H140 arrives with the perfect blend of innovations, proven technology and optimised maintenance taken from Airbus Helicopters' range of products and demonstrators, to make the difference for its operators' missions.

Efficiently designed airframe

Designed for high performance and high availability

- **Low maintenance and operating costs**
- **Best payload/range in its class**
- **2 pilots**
- **6 passengers**

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

Introducing the HEMS cabin

Multi-mission

- Passenger transport
- Private and business aviation
- Offshore
- Law enforcement

Key figures

MTOW 3 tonne class

The H140: rising to a new standard

ONCE UPON A FLIGHT...

With an already storied career as a helicopter pilot in the US Army, Kodey Bogart saw an opportunity to inspire the next generation of pilots by writing the *Helo Girls™* series of children's books.

Article: Ben Peggie

WHAT INSPIRED YOU TO WRITE THESE STORIES?

Kodey Bogart: I was frustrated trying to find children's books for my own kids that accurately represented the helicopter industry, especially ones that emphasised safety, teamwork, and featured a strong female lead. At industry events, I often hear concerns about the shortage of pilots and maintenance technicians. While recruitment efforts focus on high school and university students, I believe we need to plant the seed much earlier—starting in grade school. To that end, I've been working with a STEM educator to develop aviation-themed STEAM (science, technology, engineering, arts and mathematics) lessons that correlate with the books. Through these stories and lessons, I hope to inspire children to see themselves in aviation roles and spark their curiosity about this incredible industry from an early age.

ARE THERE ANY SKILLS YOU LEARNED AS A PILOT THAT COME IN HANDY AS A WRITER?

K.B.: Absolutely. There are many transferable skills between being a helicopter pilot and writing the *Helo Girls™* series. As a pilot, every mission is meticulously planned, teamwork is critical, and safety is always the top priority. These same principles guide my writing. Each story is mission-oriented and designed to help children understand the value of working as a team and staying focused under pressure. Just like in aviation, storytelling requires problem-solving, decision-making, and a clear sense of direction. I draw from my own experiences in the cockpit to create authentic scenarios that children can engage with and learn from. My goal is to inspire young readers to see themselves as part of a team—whether as a pilot, mechanic, or another critical role—and to dream big while embracing the values of safety and collaboration.

WHAT IS IT ABOUT HELICOPTERS AND THE MISSIONS THEY FLY THAT ARE SO EXCITING TO CHILDREN?

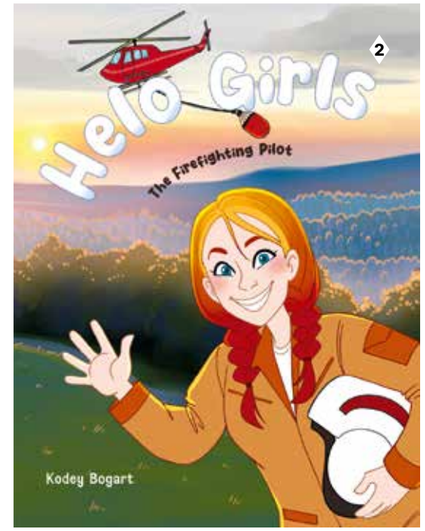
K.B.: Helicopters are inherently exciting—they're just awesome! I vividly remember the moment I fell in love with them—it's the way they feel, smell, and sound. Helicopters are all-encompassing; they command your senses and spark curiosity. Children pick up on these same things, but what makes helicopters even more fascinating is the incredible variety of missions they perform. From firefighting to search and rescue, to law enforcement and medical transport, kids see helicopters passing overhead and imagine the adventures they're undertaking. Through the *Helo Girls™* series, I hope to deepen their understanding and appreciation for the diversity of roles helicopters play and the teamwork that makes each mission a success.

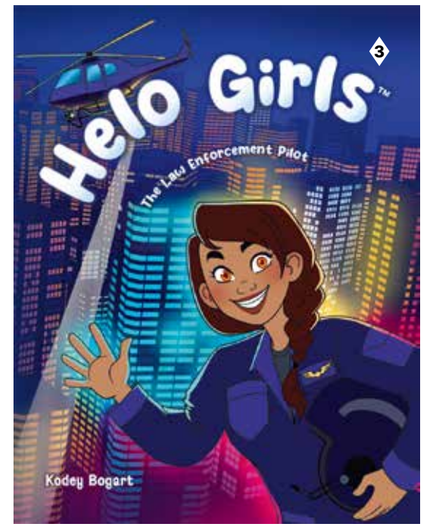
WHICH HELICOPTER FROM AIRBUS HELICOPTERS' RANGE WOULD YOU MOST LIKE TO FLY?

K.B.: The H135—air ambulance. Most of my experience is in air ambulance missions, which are incredibly close to my heart. The H135 is a market leader in helicopter air ambulance (HAA) operations for good reason. It's a robust yet compact aircraft, perfectly suited for tight landing zones and urban environments where precision is critical. Beyond its size and manœuvrability, the H135's Helionix avionics system is a standout feature. Its full instrument flight rules (IFR) capabilities significantly enhance flight safety in instrument meteorological conditions (IMC), which are a well-known challenge in the HAA sector. It's the perfect blend of reliability, performance, and mission-readiness.

THE HELO GIRLS HAVE BEEN ON FIREFIGHTING AND LAW ENFORCEMENT MISSIONS. WHAT'S NEXT?

K.B.: I have around 20 titles planned for the *Helo Girls™* series, each showcasing different missions and roles in aviation. Some of these stories will bring a few of the girls together for collaborative adventures. Up next is book three, *The Air Ambulance Pilot*, which introduces Zuri, a skilled and compassionate pilot dedicated to lifesaving missions. I'm excited to continue expanding the series and inspiring young readers.





Scan the QR code to access the Helo Girls website.

2 & 3: The first two books in Bogart's series focus on firefighting and law enforcement.

1: Pilot and author, Kodey Bogart.

SEND IN THE SUPER PUMA

Since 1977, operator Custom Helicopters has offered a versatile fleet to cater for any mission their customers may require. Historically focused on single-engine utility work in Canada, they recently expanded operations to include larger multi-engine aircraft. CEO Jed Hansen explains the impact the Super Puma is having on their firefighting operations.

Article: Ben Peggie

1: One of Custom Helicopters' H215 helicopters, ready for action.

WHAT ARE THE PARTICULARITIES OF OPERATING IN CANADA?

Jed Hansen: Our operations span coast to coast to coast in Canada, covering from the Pacific to the Atlantic and as far north as possible. The operating environment presents challenges such as varying terrain and temperatures ranging from -40 to +40°C. Additionally, Canada experiences diverse and challenging weather conditions. Our fleet of Airbus aircraft has proven to be reliable and capable in all these environments. Reliability is crucial, especially in remote areas where our customers depend on the aircraft for daily transportation. Our Airbus fleet has enabled us to provide excellent service.

HOW ARE YOUR SUPER PUMAS DEPLOYED ON FIRE SUPPRESSION MISSIONS?

J.H.: Primarily, the Super Pumas are used for water bombing. However, their civilian certification allows them to perform additional tasks, such as transporting crews to and from the fire line and moving people in emergency situations. For instance, during a fire that threatened a remote community, the Super Puma was instrumental in evacuating hundreds of people to a nearby airport, providing a swift and effective means to get out when there were limited options and time was critical. Another time, we evacuated a community, we got the people out, but in an emergency only essentials can come, so the pets got left behind. We worked with the community and sent in the Puma. It was quite the scene when it showed up back at the airport loaded with pet crates from front to back, floor to ceiling. Seeing all those pets being saved, reunited and the smiles on the faces of the families and specifically the kids was amazing.

WHAT ARE THE ADVANTAGES OF FIGHTING FIRES WITH A SUPER PUMA?

J.H.: The Super Puma is a proven utility aircraft capable of operating in challenging, harsh, and remote environments. It boasts an increased external gross weight compared to other variants, allowing it to lift substantial loads. With its impressive speed and range, the Super Puma can carry more fuel than other heavy aircraft while lifting the same amount of water. This capability enables extended operations on the fire line, delivering more water to combat fires threatening homes and communities. Fire operations are often conducted at remote or temporary bases rather than returning to a hangar each day. The Puma L2 has proven effective in this environment, and its 10,000 lbs of lift with a close water source means it is the leader on the amount of water it can drop on a fire in an hour. If the water is close enough, which is often the case in Canada, we can do really quick turns. If we get 10 or 12 drops an hour on a fire, we're looking at 40,000+ litres of water, which really makes a difference. If we look at increasing capability with the addition of a tank on a Puma and we can drop water both day and night, that volume of water on a fire in a 24-hour period is material. It's going to make a difference. Looking at the dollar cost per litre of water dropped, the Puma does start to set itself apart.

WHAT IS NEXT ON THE HORIZON?

J.H.: We are collaborating with United Rotorcraft and DART Aerospace as a launch customer supporting their development of a 1,000-gallon firefighting tank for the Puma family. We anticipate the tank will be available later this year. They have a proven system that is utilised on many other aircraft types, and we have no doubt this new innovative tank system will be a great new option for the Puma. The water bucket is effective, but we expect the new tank to improve our operations, particularly with night vision goggles (NVG). We anticipate that significant forest fire incidents will continue to occur, like California recently experienced, and this superior tank will significantly enhance our effectiveness.

2: Custom Helicopters CEO, Jed Hansen.

3: Historically, Custom Helicopters' single-engine fleet focused on utility work.

4: A Super Puma and water bucket. With impressive speed and range, a Super Puma can carry more fuel than other heavy aircraft while lifting the same amount of water.

FIREFIGHTING ON THE NIGHT SHIFT

In addition to search and rescue, marine pilot transfers, and a variety of other charter work, Talon Helicopters have the right equipment to intervene when fires break out at night. Chief Pilot Jarrett Lunn has been with Talon for over 11 years. He explains the positive impact that night vision goggles (NVG) have in their fire suppression and mitigation operations.

Article: Jarrett Lunn
Introduction and editing: Ben Peggie

1: Talon Helicopters Chief Pilot, Jarrett Lunn.

2: Talon's Dauphin hoisting a crew member during a mission. Talon is the only commercial helicopter provider in the province of British Columbia that is approved for night-time search and rescue ops. The company's area of coverage expands drastically at night.

3: With night vision goggles Talon's crew can start operations immediately, which helps prevent fires from getting out of control.

4: Night vision goggles take ambient light, the very little light that is available at night, whether it's from the stars, the moon, or even from the wildfires, and amplify that light by up to 60,000 times to create an image projected on a set of goggles worn by crew.

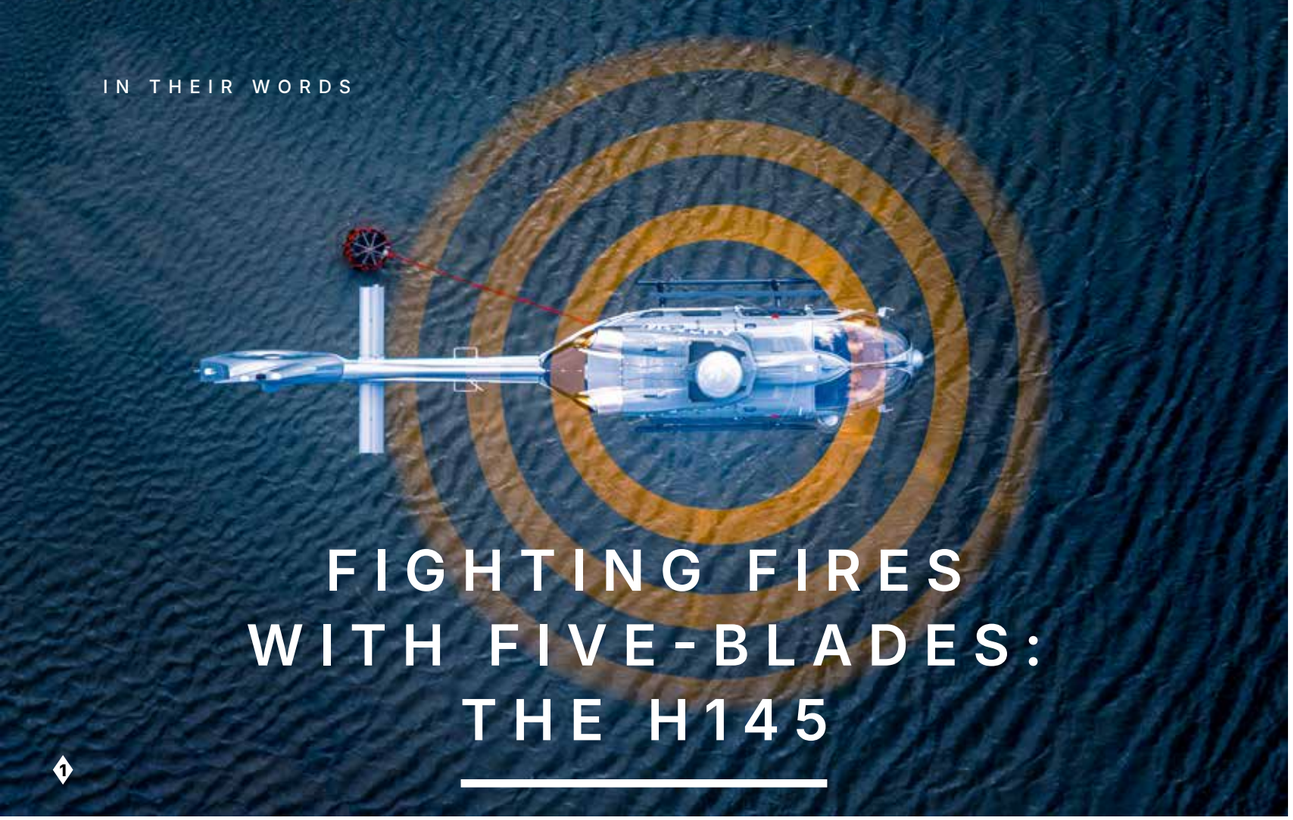
"Though we're based in Vancouver, typically, our Dauphin goes to Alberta for the summer months on a firefighting contract. It's supported with a truck and trailer, with parts, stores, tools, whatever we need. We're quite mobile, living with the helicopter away from base for the summer. Pilots and engineers work on two-weeks-on, two-weeks-off rotation while away from home."

FIRE FINDING

"In order to do the night-time firefighting and our other night-time operations, whether it's search and rescue or marine pilot transfers, we need the night vision goggles to be able to fly into unlit areas at night. They allow us to see where we're going, what the hazards are and navigate safely, [and fly] low level at night. We're not flying high-level instrument routes from airport to airport, we're down working in the terrain. The goggles let us see the terrain and hazards around us. We can see everything from sticks to trees and ponds. Sometimes you're looking for a dip site, and the dip site has got a family of moose in there, so you're going to circle and wait for the moose to clear out before you go in to fill up. The pilot wears the night vision goggles as well as a trained Alberta wildfire crew member, so they can assess the fire, the terrain as well, help with GPS programming, radio frequencies and, most importantly, they liaise directly with the province for dispatching in priorities. Whether it's a member of the public phoning in a fire off the side of the highway, or they have a lightning detection system—so we might get a call from dispatch with coordinates for the most recent lightning strikes—we'll make sure the active lightning is gone so we're not flying into the storm. Often, we're following behind a storm checking on where lightning strikes have been detected and looking for new starts."

IMMEDIATE IMPACT

"Fires burn day and night. One of the biggest problems lately with climate change: fires are starting earlier in the year. They're going later in the year. They're getting bigger quicker. We're seeing a lot more aggressive fire activity. If a fire starts at sunset, often aircraft can't touch it for 8 to 10 hours until sunrise in the morning. With NVG we're able to go immediately to that fire. Initial attack has been a key focus of the night operations, where we try to get on a fire while it's still small. Once a fire gets up and running and gets to a certain size, they're just hard to catch. If we can catch them when they're small, we see a lot of success with that.On year one of our night firefighting contract with Alberta, the first two weeks were dedicated to training, mostly for the Alberta wildfire staff so they could get to know the new helicopter and its capabilities. We were on night one of training, and a dispatch came in for a fire roughly 50 NM from our training centre. We loaded up and we took the crew to an actual fire rather than a training fire and put the tool to use. As we were inbound, we started discussing over the radio with the ground teams and it was an interface fire, which means the forest is now burning into the built-up area. There were actually two houses caught in that fire. We were able to help out, working with the local ground crew. We were tanking on the fire. We provided an overhead view of where the fire was going, where it had gone and where the priorities were for continued action. It was our first night on contract with the province, supposedly a training night, but it turned into an operational training night! It was an 'aha' moment, where at the end of the night, we all came home and thought, okay, this is going to be a really effective programme. We're going to do a lot of good here."



FIGHTING FIRES WITH FIVE-BLADES: THE H145

Since upgrading to the new five-bladed H145, Max Lyons, CEO of Hillsboro Aviation, believes he has found a modern firefighting helicopter that is ready to go the distance—and his team agrees.

Article: Ben Peggie

1: Bullseye. Hillsboro Aviation's five-bladed H145 filling its bucket.

2: Pilot Nicole Ludwig in the cockpit of the H145. The more she worked with the H145, the more she fell in love with it.

3: With a 240-gallon bucket, the H145 could release water at the beginning of the cycle and use a full bucket later on.

4: Max Lyons, CEO of Hillsboro Aviation.

"The main thing about the H145 is that it is new technology," explains Max Lyons. "It's a modern engine, parts are available, the aircraft is very reliable. And Airbus, from my perspective, is committed and has been very good at continuing to increase performance on their models." With decades of experience in aviation, Lyons has been an extremely interested participant in discussions around the next generation of firefighting aircraft. In 2024, Hillsboro's five-bladed H145 completed its first firefighting season and he believes the helicopter has a big future ahead of it.

JUST FLIP THE SWITCH

For Hillsboro pilot Nicole Ludwig, who's been flying helicopters since 1997, one aspect of the H145's modernity that quickly became apparent was the autopilot. Firstly, it takes you straight there and then after flying a taxing firefighting mission, having an autopilot that would support the pilot in returning to base was certainly appreciated. "On any incident, when I could be flying 30 to 40 miles back to the airport in the evening, it was so nice to set the autopilot and just head back," says Ludwig. "Or for ferrying it, it's six hours here for a straight and level flight, [and] the autopilot is great. It's just amazing how straight it actually flies." The 2024 fire season was Hillsboro's first with the five-bladed H145. "We flew over 200 flight hours across the season in Arizona, Nevada, New Mexico, Colorado, Wyoming and South Dakota," says Franz Bergtold, Director of Operations at Hillsboro Aviation. "Bucket work, crew transport and reconnaissance." He was immediately impressed with the H145: "You just flip the start switch and it's ready to fly. It is amazing how this complex technology has made it so easy on the pilot side."

RISING ABOVE THE REST

Fittingly, all of Hillsboro's pilots attest that where the H145 really elevated itself above its competitors was when performing at altitude. "It just seemed to perform really well at high-density altitudes and better than I would have expected or imagined," says Charles Baker, a pilot at Hillsboro with around 25 years of flight experience. "The Fenestron, the tail rotor authority that it provides: I was impressed with that, too." Ludwig agrees with her colleague: "I felt that the higher you go with the H145, the more it surpasses the older generation helicopters. When we were up in the higher altitudes of Wyoming and Colorado, the helicopter really shone and showed what it's capable of. It amazed people. My highest landing was 11,500 ft. I dropped three guys and all their gear off with no problems," continues Nicole Ludwig. "I fought fires at around 10,000 ft. That crew wanted to fly with the 240-gallon bucket. It's a variable fill bucket, so you could actually release water at the beginning of the cycle and use a full bucket later on. Again, [the H145] did it with no problems at those altitudes." For Ludwig, her adaptation to the H145 has been incredibly smooth. "I think the H145 is a great aircraft," she says. "The more we worked with it… I really fell in love with it. At the end of the season, I went and helped out on a [different] helicopter that I'd been flying for years and all of a sudden that seemed so foreign to me, as if I'd never flown it before."

THE H175: THE FURTHER, THE BETTER

Opening a new chapter in offshore helicopter operations, Transportes Aéreos Pegaso has signed a contract with Woodside-Pemex to provide deepwater services. The agreement, which may involve up to three H175 helicopters, underlines the growing importance of this super-medium in long-range maritime operations in the Gulf of Mexico.

Article: Belén Morant

1: Pegaso's H175 in flight.

2: Offshore workers boarding an H175. The expansion of deepwater energy operations requires helicopters capable of reaching distant platforms while maintaining a significant payload capacity.

3: Ships ahoy! The H175 on board.

4: Airbus models such as the H130, H145 (pictured), and an H155, as well as the H175, strategically positions Pegaso to support the growth of this industry.

With 44 years of experience in helicopter operations in Mexico, Pegaso has been at the forefront of the H175's success story in difficult deepwater conditions. The company's confidence in the aircraft is evident in its recent fleet expansion, with two additional H175s delivered in 2024, bringing its total H175 fleet to five aircraft. "We chose the H175 for its range and its economic efficiency in transporting 16 passengers over long distances," explains José Erosa, Pegaso's Director of Operations. "We like this helicopter because it is very smooth and quiet... our passengers love it." This passenger comfort, combined with the helicopter's long range, has made it particularly suitable for deepwater operations.

DEEP WATERS IN THE GULF OF MEXICO

Operating helicopters in the Gulf of Mexico presents a series of unique challenges that put both the aircraft and the crews to the test. "High temperature and humidity are the main challenges we have to face," says José Erosa. The corrosive marine environment requires rigorous maintenance protocols and specialised protective measures for the aircraft, while the region's changing weather patterns add another layer of complexity to maintenance and require extraordinary expertise on the part of the pilots. The capabilities of the H175s have been extensively tested in these demanding conditions with 8,500 flight hours accumulated. Pegaso shares that they successfully completed a remarkable mission, flying 220 NM out and back with eight passengers without refueling to reach a vessel offshore. Under the new contract between Pegaso and both Woodside and Pemex, the H175s will operate from the Pegaso base in Matamoros, covering distances of between 120 and 140 NM, and providing passenger and cargo transportation and search and rescue support services, with two hoist teams that will be supporting rescue needs in the Gulf of Mexico. The timing of Pegaso's fleet expansion coincides with growing activity in the deepwater sector of the Gulf of Mexico. The region is experiencing an increase in exploration and production activities, and energy companies are venturing into ever deeper waters. This expansion requires helicopters capable of reaching distant platforms while maintaining a significant payload capacity. The success of the H175 in this environment is reflected in the achievements of the global fleet, which has accumulated 250,000 flight hours as of January 2025, of which 225,000 are dedicated to maritime transport.

A STRATEGIC PLAYER IN THE REGION

Pegaso's modern fleet, which includes several Airbus models such as the H130, H145, and an H155, as well as the H175, strategically positions them to support the growth of this industry. Their aircraft, with an average age of less than ten years, guarantee optimal reliability for deepwater operations. Now, the H175s will take them even further.

OVERHAULING THE OVERHAUL

2024 saw Airbus Helicopters' facility in Grand Prairie, Texas certify a new multi-purpose test bench for dynamic component repair (DCR), the latest step to improve customer service and reduce waiting times. Vice President Customer Support & Services in North America, Niko Szodruch, and Senior Manager Dynamic Component MRO, Sebastien Mathiot, talk about the journey so far and the next steps.

Article: Ben Peggie

DCR focuses on repairing components between the helicopter engine and blades, such as the main and tail rotor gearboxes and shafts that enable the helicopter to fly. Without them, the helicopter isn't going anywhere. With them, even if the engine fails, the components allow for a safe landing. Getting these parts back to customers in a timely manner is a challenging task and improvements to the turnaround time process remain a key priority.

CHAIN AND GAIN

At the Grand Prairie workshop, approximately 1,000 components are received annually, with 80% being scheduled overhauls and 20% unscheduled repairs. About 200 are major components (main gearboxes). Airbus Helicopters defines specific turnaround times to complete these jobs, but according to Sebastien Mathiot, "delays sometimes occur due to supply chain strains; the additional workload that comes with increased activity, particularly from military programmes; and the rapid expansion of the team and facilities which has required significant organisational change."

1: The dynamic component repair test bench in Grand Prairie, Texas.

GETTING BIGGER, STAYING LEAN

Mathiot has the task of turning around the turnaround times (TAT), through restructuring to enhance efficiency. There has been the introduction of specialised roles, supervisors, and the strengthening of the Quality Assurance team to improve efficiency and training. Recruitment has been a priority, with the team tripling in size over four years. The physical workspace has been expanded by approximately 50%. Investment in both Visual Dimensional Inspection (VDI) and Non-Destructive Inspection (NDI) areas has resulted in improvements, with the NDI line now considered a state-of-the-art worldwide benchmark. Digitisation and modernisation have been at the heart of the changes, delivering many improvements including bringing more reliability and transparency to information-sharing with customers. The latest enhancement is the DCR test bench, which was fully qualified and certified at the end of 2024. "At the end of the DCR process, we perform a full load test," emphasises Mathiot. "We install the dynamic component on a huge machine that mimics it being on a helicopter. We monitor the torque, power, vibrations, flow, temperature, and then we know it's ready to be reinstalled. The test bench will help us handle a much larger workload because it is qualified for every big component. We are already using it to test the main gearboxes of the H135, the AS365, the H145 and it's even ready for the H160, which will come in the next few years."

MORE TO COME

While improvements have already been achieved with 25% faster TATs for large components and more than 45% faster TATs for small components, Niko Szodruch recognises that for customers waiting on key components, improvements can never go far enough. "Yes, we see that TATs have gone down significantly on average, but improving that of major components remains a priority. The changes are still scaling up, and they will help us get to where we want and need to be." More investment is planned. A three-axis milling machine and computerised numerically controlled machining centre will facilitate the repair of more parts on site, reducing reliance on external machine shops, while digitisation will increase. As Szodruch underlines, "this transformation has taken incredible collaboration between many teams. Every single initiative is a brick to build a huge project to overhaul, become better and more efficient."

2: The test bench helps handle larger workloads as it is qualified for every big component. It is already working on the H135, the AS365 and the H145.

3: Grand Prairie's non-destructive inspection line has become a worldwide benchmark.

4: Vice President Customer Support and Services in North America, Niko Szodruch.

5: Senior Manager Dynamic Component MRO, Sebastien Mathiot.

SCIENCE AND HELICOPTERS IN THE ANTARCTIC

Antarctica truly deserves the nickname ‘International Science Land’, bestowed upon it by UNESCO’s magazine *The Courier* in 1962. This followed the entry into force in 1961 of the international treaty that designated the Antarctic continent an exclusive place for peaceful purposes and where cooperation in scientific research is key.

Article: Renata Ahumada

1: One of DAP’s two H125 helicopters that helped conduct vital scientific research in the challenging conditions of Antarctica.

2: Maintaining the helicopters and ensuring crew got sufficient rest was one of the mission’s key challenges.

3: DAP’s H125 helicopters circumnavigated the Antarctic continent for≈the first time.

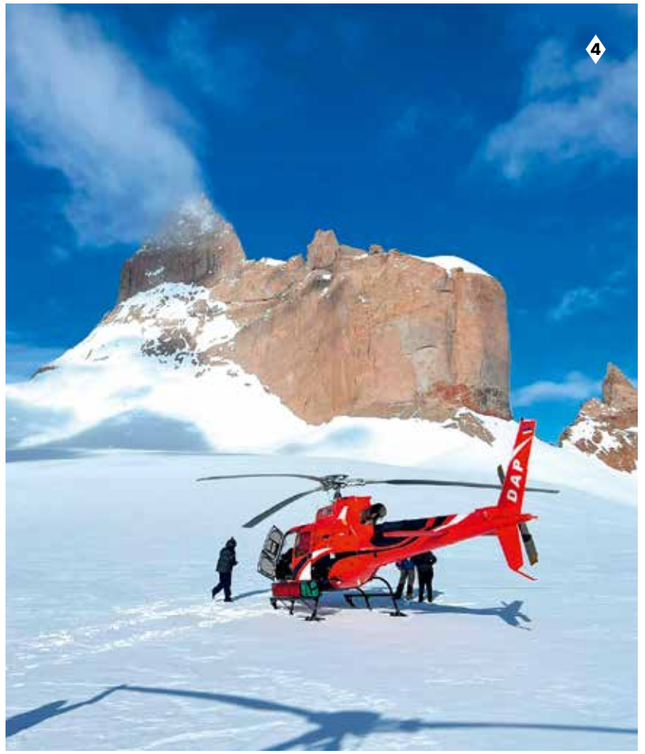
4: The helicopters flew 260 flight hours between 4 December 2024 and 17 January 2025.

Because of this, during the last months of 2024, the world’s southernmost territory received various research teams, one of them being the SWIDA-RINGS project, an aerial campaign. The objective of these investigators was to map and study the majority of the main outlet glaciers of Antarctica, with the aim of providing key data to understand the mass balance of the ice sheet around the Antarctic continent, in addition to obtaining data to correct errors in satellite data and climate models. This is where two H125 helicopters became relevant to the research. The scheduled flights between 4 December 2024 and 17 January 2025 not only collected aerial data, but also transported passengers to take samples and make measurements with gravimeters. At the same time as this mission was being completed, DAP, Chilean operator of the two H125 helicopters, also achieved an international aeronautical milestone by circumnavigating the Antarctic continent for the first time with their aircraft. It was more than 8,000 miles, facing all the extreme conditions typical of that area. The helicopters visited 12 different Antarctic bases, providing support in the construction of the ice runway, as well as other logistical aspects of air operations. “There were 260 flight hours.

H125: missions to the ends of the earth

The H125 has been proving its mettle in the challenging conditions of the Arctic and Antarctic, performing missions that further scientific research.

The mission required a great deal of planning to maintain the aircraft remotely, comply with crew rest periods and guarantee operational and technical safety, all in a remote, unknown area with a complex climate,” says the executive director of DAP, Nicolás Pivcevic. DAP is positioned as one of the international leaders in Antarctic air operations from Chile, thus ensuring the highest standards of operational safety for all those who visit the frozen continent.



BATTLING THE COLD WITH THE AIRBUS H125

Onboard *Le Commandant Charcot*, an imposing 150-metre icebreaker ship, cruise company Ponant has added an unexpected visitor to the guest list. Operated by SAS Pôle Air, Airbus' H125 is becoming an invaluable partner on the ship's journey around the Polar regions, acting as a workhorse for a variety of missions to support the crew in their tasks. Olivier Mabille, helicopter pilot for SAS Pôle Air, shares his insights on what makes the H125 a true pioneer on the ice.

Article: Isis Franceschetti

As part of the expedition, the H125's main mission is to ensure safe navigation in the ice for the *Commandant Charcot*. "Before the ship reaches new ice to break, the helicopter performs a reconnaissance mission to sound out whether it's safe to progress on the planned itinerary," says Olivier Mabille. The helicopter also serves for medical evacuations of passengers and crew members, from the ice towards the boat or from the latter to reach an airport or a land base. In addition to contributing to saving human lives, the H125 was recently mobilised as part of scientific missions to check the evolution of animal species in the region.

Mabille recounts an impressive example of this: "We usually receive international scientific teams on *Le Commandant Charcot*, who come to collect data in the Arctic and Antarctica. Some time ago, a team of scientists was trying to spot a colony of emperor penguins which needed to be updated from scientific surveys. With the help of the H125, we managed to track down the new location of this colony, which was actually doing quite well."

A SINGULAR WAY TO TEAM UP

In addition to its demonstrated capabilities for essential missions, the H125 also provides an unrivalled advantage for the ship's crew, thanks to its high degree of adaptability and agility. "It is a helicopter which is very reliable and very powerful and has strong assets, like an autopilot, a large glass cockpit navigation display and advanced means of communication," explains Mabille. When navigating icy environments where weather conditions can easily become unpredictable and flight ceilings are limited to protect natural surroundings, the H125 also benefits from the most modern equipment to ensure the highest levels of safety. Mabille explains: "The H125 is ideally suited for polar missions. We operate at very low temperatures in a saline environment, and we regularly have to land on the ice or in the mountains. It is the perfect tool for us, and we are very happy and proud to be able to operate this rotorcraft in these latitudes." A testament to the added value of the helicopter for polar missions, Mabille just took delivery of a new H125. "This rotorcraft will leave for Stockholm, where the ship will make a stopover, and from there on, we will journey towards the Arctic to start operations in Greenland around April. It's a really exciting step to start preparing for new adventures with the H125."

FROM THE THREE POLES ONWARD

When looking back on his most striking flights with the helicopter, Mabille has difficulty actually picking one. "We've had so many opportunities to fly over exceptional landscapes, particularly in Greenland, under a magnificent sun with the Inuit populations in dog sleds, hunting or fishing under the helicopter. In Antarctica, we saw Tabular icebergs the size of certain French departments, and we even flew over the Erebus volcano." But amongst recent memorable experiences he took part in, Mabille shares the story of three flights that took the crew over three different poles in five days. The crew first passed the geographic North Pole, when leaving Alaska (US) to reach Svalbard, an archipelago located to the north of Norway. Two days later, the H125 then made its way toward the magnetic pole, which gathers the earth's magnetic field. "And that's when the H125 made a true first," highlights Mabille. "The day after, reaching the pole of inaccessibility: the point in the Arctic Ocean that is the furthest from any land. That is a truly extraordinary event in the life of a pilot, and the H125 was definitely up to the task."

1: The H125 is an Arctic pioneer.

2: Olivier Mabille and the Pôle Air H125.

3: The H125 staring at the sun.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IS A
MISSION
LIKE NO
OTHER
Helping to keep the world a beautiful place, Airbus HCare portfolio offers the best combination of support and services for every customer. Starting the moment an Airbus helicopter is delivered, we'll make sure your operations are carried out efficiently, safely and cost-effectively. Because when your focus is on the mission, our focus is on you.
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