

# Rotor

BY AIRBUS HELICOPTERS

**MISSION**

100 years of the  
US Coast Guard

**LIFE OF THE RANGE**

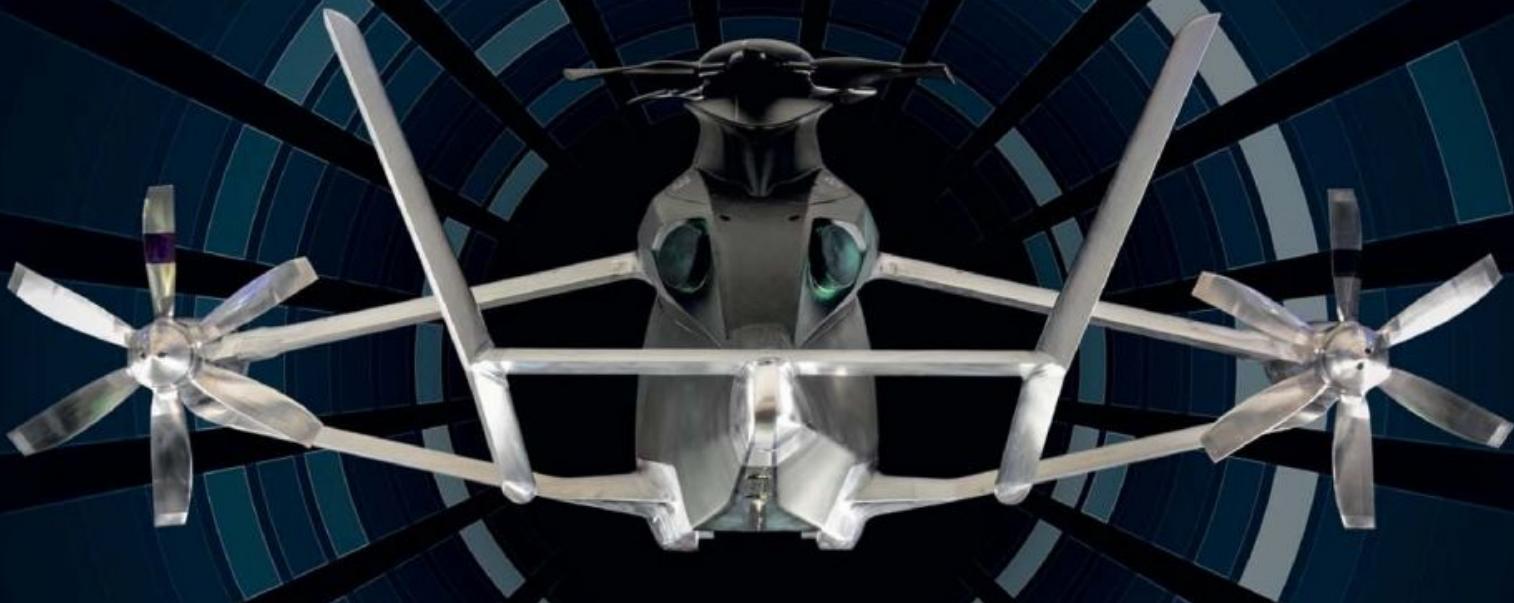
Police helicopters:  
force multipliers

**LOGBOOK**

VIP tourism  
in the Philippines



**One step ahead  
at all times**



08

## FEATURED ARTICLE

### One step ahead at all times



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© Lorette Fabre

The helicopter world is changing fast. Manufacturers are now expected to provide increased safety and competitive prices while also innovating, reassessing what they do and offering new solutions in the short, medium and long term—all with a view to responding to new needs. In the pages of *Rotor Magazine* we reveal our innovation strategy, which seeks to improve our existing range, develop the new programmes the market expects of us, and design the helicopter transport of the future. Seen by some as highly disruptive, these initiatives all have the same objective: to safeguard the satisfaction of customers by providing them with the safest, most reliable, most efficient and most competitive solutions. Technological innovations are the most visible of these solutions. It goes without saying that innovation is at the heart of Airbus Helicopters. It is a central facet of the way it organises and equips itself, and how it goes about its work. A revolution is underway, aiming to make us faster and more flexible, to enable us to reach the highest standards of quality and safety, and to streamline our operations so we can be more competitive.

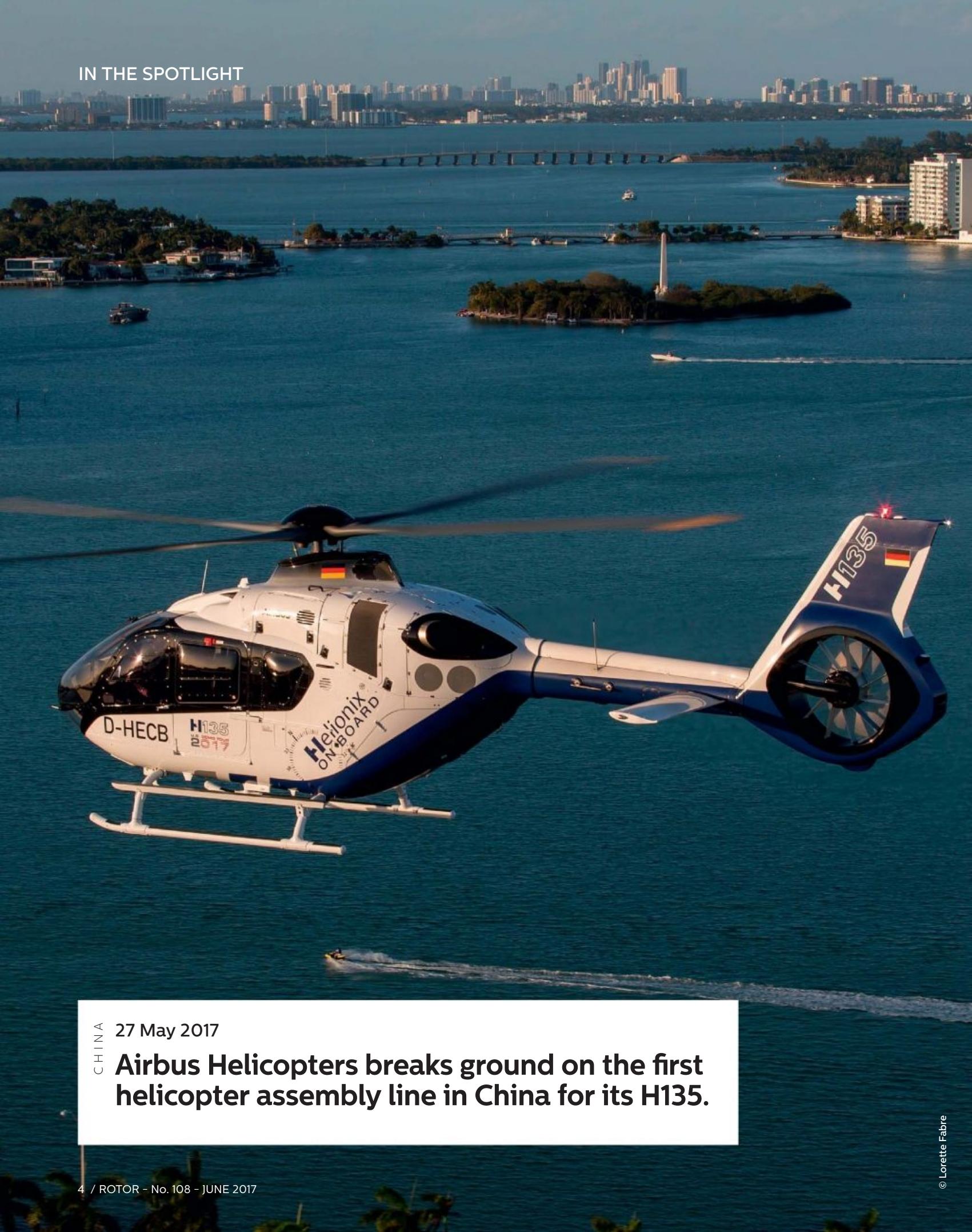
**“A revolution is underway at Airbus Helicopters, aiming to make us faster and more flexible, to enable us to reach the highest standards of quality and safety, and to streamline our operations so we can be more competitive.”**

**Guillaume Faury**

This revolution involves an overhaul of our industrial model, a core feature of which will be the specialisation of our Donauwörth, Marignane and Paris-Le Bourget sites. Founded on the concept of interdependence, this new structure will enable us to pool skills according to specific areas. The gradual rollout of new and simplified assembly concepts, some of which take their cues from the automotive industry, will help cut cycles and give customers the opportunity to reconfigure their aircraft at a very late stage of the manufacturing process. The digital resources made available to colleagues will aid them in performing operations safely and more easily throughout the assembly cycle. Finally, thanks to robotisation, challenging tasks will be completed quickly and with greater safety. The first beneficiary of this revolution will be the H160 which, aside from technological breakthroughs, will provide a tangible demonstration of our industrial transformation.

So, as you can see, Airbus Helicopters is committed to delivering innovation that helps us help our customers to move forward.

IN THE SPOTLIGHT



CHINA

27 May 2017

**Airbus Helicopters breaks ground on the first helicopter assembly line in China for its H135.**

## 50<sup>TH</sup> ANNIVERSARY OF THE GAZELLE'S MAIDEN FLIGHT

Fifty years after its maiden flight on 7 April 1967, the Gazelle is still being operated by nearly 100 customers in 34 countries, where it is appreciated for its ease of maintenance and high degree of reliability.

Developed and manufactured in cooperation with the United Kingdom at the end of the 1960s, more than 1,250 Gazelles have been delivered. Today 470 rotorcraft – more than a third of all Gazelles manufactured – are still in service, a hundred of which are operated by the French army. The Gazelle was a major success in the military sector and nearly 80% of the rotorcraft in service are used by armies around the world. By the end of December 2016, the Gazelle fleet had accumulated more than 7 million flight hours.

A helicopter of many “firsts,” the Gazelle was the first Airbus helicopter to be equipped with the Fenestron, which is still present on Airbus’ light and medium rotorcraft.



## AIRBUS LAUNCHES AIRBUS CORPORATE HELICOPTERS

Airbus Helicopters officially launched Airbus Corporate Helicopters (ACH), its high-end, exclusive brand, at business aviation airshow, EBACE 2017. The brand, which will be identified by the ACH logo, will build on the company’s leadership in the private and business aviation market, offering an exceptional level of quality, craftsmanship and bespoke service to meet the most demanding requirements.

Airbus Corporate Helicopters provides an exclusive platform from which customers can benefit from best-in-class products, with tailored completion and service. Mirroring its successful sister brand, Airbus Corporate Jets (ACJ), ACH will provide current and future customers an exclusive ownership experience ranging from advice in choosing the right aircraft to designing a bespoke style. Finally, customers will benefit throughout the period of ownership from a high level of support service which, in addition to ensuring the highest availability of the aircraft anywhere in the world, will help preserve the aircraft’s resale value as a result of a dedicated care and support by the manufacturer.



### Rotor Magazine readership survey

## THANKS!

A great number of readers shared their views with the magazine’s editors during the readership survey in April 2017. We’d like to express our sincere thanks for your time and enthusiastic replies: your interest in our magazine is our *raison d'être* and moves us to continually improve. Your comments and suggestions have been carefully noted and will allow us to propose more topics of interest: innovation, our operators’ missions, and all the secrets behind our products.

Thank you again for your contribution!



360°



© Jay Miller

CHINA

## BEIJING 999 SIGNS FOR AN H145

On 4 May 2017, in Donauwörth, Germany, the Beijing 999 emergency rescue centre signed an agreement with Airbus Helicopters for the purchase of an H145, the first of its kind to be configured with a hoist for medical assistance and search and rescue (SAR) missions. The aircraft will be used for helicopter rescue services in the mountains during the Winter Olympics in Beijing in 2022. In addition to the hoist, the new H145 will be the first in China to be equipped with a full medical interior, so that it can be used for mountain rescue or long-distance air ambulance transfer operations. The subsidiary of the Beijing Red Cross Foundation already operates 2 H135s, the country's first fully equipped air ambulances, which provide emergency medical services (EMS) around Beijing, Tianjin and Hebei Province.



© Ned Dawson

## THE H135 EQUIPPED WITH HELIONIX

In the fourth quarter of 2017, Airbus Helicopters will deliver 3 new H135s equipped with Helionix to STAT MedEvac, a supplier of medical air transport. Helionix is the latest avionics system developed by Airbus. It provides greater flexibility in missions and flight safety thanks to better situational awareness for pilots. Helionix is fully modular, with 4 electronic displays, and will be standard equipment on the new H135s. STAT MedEvac, one of the largest air medical suppliers in the United States, uses a combination of Airbus H135 and H145 helicopters.



## LAUNCH OF “ASSET MANAGEMENT” ACTIVITIES

Designed to manage Airbus Helicopters “assets,” this new service handles transactions and monitoring of second-hand Airbus helicopters. The role of this new body is to develop customised commercial solutions to enable the purchase of new helicopters through the buyback, refurbishment and subsequent resale of older models. The commercial solutions include a business engineering approach that also allows for one-off leasing solutions. Furthermore, this service promotes better control and investment in the second-hand market with the support of the Airbus network and encourages trade in second-hand aircraft.

## O.R.I.O.N. MOBILE

Since March 2017, Airbus' interactive visualisation tool, O.R.I.O.N., has been available with an interface adapted to tablets, and can now be downloaded from the Apple Store or the Airbus Keycopter customer portal. With the help of this tool, Airbus Helicopters is able to provide online and offline access to the company's technical documentation, including master servicing manuals, maintenance manuals and parts catalogues. The offline service, accessible via the eTechPub MOBILE application, is available for the H125 and H130. O.R.I.O.N.'s deployment for all helicopter models is planned for 2017.



© Ted Carlson



## 400 LAKOTAS DELIVERED

**UNITED STATES** More than 10 years after its launch, the UH-72A Lakota remains the main beneficiary of the US army's procurement programmes. At the end of March 2017, the US government received its 400th aircraft. Offering availability above 90%, Lakotas are used for a wide range of missions, including medical evacuations, civil protection, training, search and rescue operations and border surveillance. The United States has ordered a total of 423 units. 5 of these aircraft are destined for the US navy and 6 for the Thai army. The remaining aircraft are in operation with the US army. In December 2016, the customer extended the logistics support contract with Airbus Helicopters for a further 5 years.

## DELIVERY OF THE 700<sup>TH</sup> H130

On 16 May 2017, the 700<sup>th</sup> H130 was delivered to Swiss distributor, Europavia, during a ceremony held in Marignane, France. This aircraft, in Styleline version, is being acquired by a private Swiss customer. The H130 (EC130 T2) completed its first flight in March 2011. The H130 fleet (including the EC130), which had completed more than 1,800,000 flight hours by the end of December 2016, is in service with more than 340 operators worldwide. It is particularly popular in 4 business sectors: passenger transport, tourism, business aviation and medical transport. The H130 recently acquired a new notch on its belt with its capacity to carry out aerial work missions.



© Éric Raz



"Innovation is at the heart of everything we do, including the ways in which we work. It is part of our DNA." Jean-Brice Dumont, Airbus Helicopters Head of Engineering



© Productions Autrement dit

# ONE STEP AHEAD AT ALL TIMES

At Airbus, innovation is more than just an engineer's dream; it is a *modus operandi*. No matter the programme, function, product, working method or even cooperation model, there is always room for improvement. And that is a good thing.

While innovation is a state of mind, it is also a key driver in the helicopter industry, which must constantly strive to reinvent itself in order to satisfy its customers.

Airbus is committed to setting new standards in the helicopter industry, both by improving the existing range and thereby offering safer, greener and more efficient helicopters, and by coming up with groundbreaking ideas in response to the future challenges of the 21st century.

# STAYING ON OUR TOES

“If we are to survive in the helicopter market of the next few decades, we must start anticipating our customers’ future needs, even if it means taking risks.” Jean-Brice Dumont, Airbus Helicopters Head of Engineering, explains how the company goes about the task of staying one step ahead.

Article: Alexandre Marchand

### Today's helicopter industry is beset by uncertainty. What role can innovation play in aiding its development?

**Jean-Brice Dumont:** Though these are anxious times for the company – in the face of increased competition – we stick firmly to our policy of investing in innovation and R&D. Our road map is still the same: to operate in the present while also continuing to prepare for the medium- and long-term future. Our goal at this moment in time is to improve our existing helicopters, which we depend on to make our living, while also remaining true to our core values, the first of which is safety, followed by customer satisfaction, quality and the competitiveness of our products. Innovation remains a key driver in the life of our range. At the same time, however, we must prepare for the long term. And that requires courage and clear vision on our part because our environment is growing increasingly complex by the day. Technologies are evolving at a tremendous rate, as is the helicopter market. Failure to anticipate those developments means failure to survive, which is why we invest so much effort in R&D in response to the market downturn.

### What is your priority when it comes to innovation?

**J-B. D.:** Safety first and foremost! But innovation is not effective if it is unable to satisfy customers by offering them genuine added value. Take a look at the H160. Some technologies are easy to spot, such as the new rotor, the new design for the doors and emergency exits and the very high level of sound and vibration control. But there are others that are not so visible, such as the roll-out of an innovative industrial process that allows us to cut cycles, reduce costs and to facilitate mass customisation. Our range of services has also been extensively modernised, a process that has drawn in particular on new digital technologies. Innovation is at the heart of everything we do, including the ways in which we work. It is part of our DNA.

### Is being innovative enough? Do you have to be visionary too?

**J-B. D.:** You do have to be visionary and stay on your toes. Let’s take urban mobility as an example. This is an area that Airbus is monitoring closely. The CityAirbus flying taxi demonstrator that

we are working on is an original solution for the future, one with the potential to revolutionise the way in which the inhabitants of major conurbations get around. Their dream is to escape the hazards posed by gridlocked streets. We are playing an active part in studies into this topic, working on the transporter, powerplant, operations and the business model.

In terms of drones, we are looking at every possible avenue. We are, for example, working with the Singaporean authorities on an experimental project called Skyways, which seeks to develop an unmanned aircraft system for delivering packages in urban environments. We have also reached a very advanced stage with the VSR700, a military drone developed in conjunction with Hélicoptères Guimbal. Another concept we firmly believe in is the speed capability of the Clean Sky 2 demonstrator, the successor to the X³, known as Racer. The technical solution we have put forward is very appealing because it is simple and inexpensive. It is an illustration of perfect innovation, which is innovation based on reality. ■



© Eric Raz



© Jérôme Deulin



The VSR700 is a military drone developed in conjunction with Hélicoptères Guimbal.



### The innovation portal

There are a whole host of good ideas circulating outside the walls of Airbus, which shouldn't be allowed to go unexplored. The Innovation portal is a resource that helps the company identify and harness those that are of greatest interest to its business. It allows Airbus Helicopters to offer win-win deals to any company that comes up with an innovative idea. And it reflects the desire to open up to the world beyond helicopters and see what improvements are possible, a desire that also manifests itself in international cooperation, with Airbus Helicopters' local entities continually looking to attract innovative SMEs in their regions.



The industrial process to build the H160 is also very innovative and allows Airbus Helicopters to reduce cycles and costs.



Jean-Brice Dumont,  
Airbus Helicopters Head of Engineering.

© Eric Raz

# Welcome to our future

- Mobility solutions for megacities
- New business models & opportunities
- High-speed helicopter
- Protection & autonomy

## PROTECTION VSR700

The VSR700 is an unmanned reconnaissance helicopter developed according to the most stringent naval requirements



What if...  
we could be  
protected  
anywhere,  
anytime?



Deployed from any  
ship greater than  
1,000 tonnes



A versatile and  
affordable platform



Maximum take-off mass  
around 700 kg



A balance between  
performance, operational  
flexibility, reliability and  
operating cost

## NOISE & ENVIRONMENT Bluecopter





What if...  
we could  
reduce our  
environmental  
impact?



Reduction in sound  
emissions 10 EPNDB under  
ICAO limits



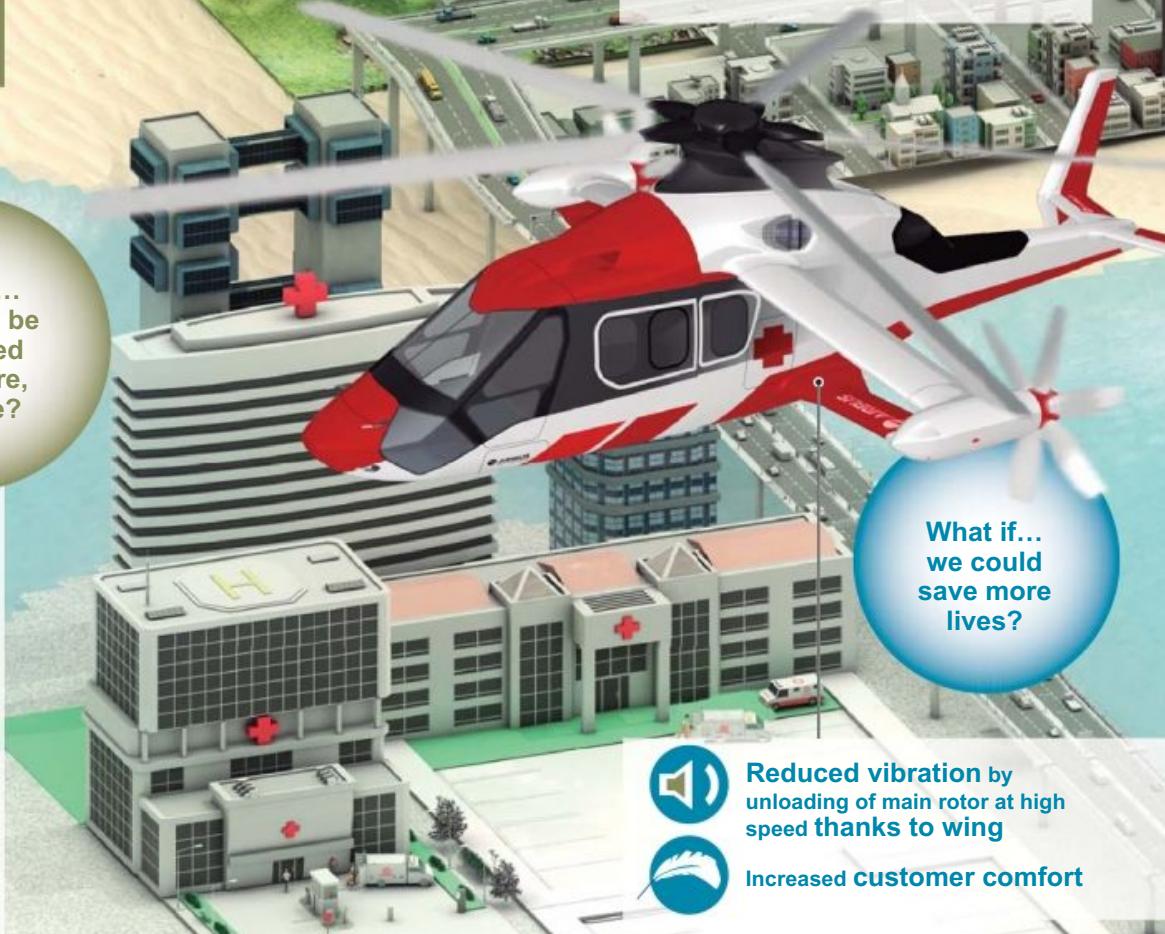
Reduction of fuel  
consumption 10%



Reduction in CO<sub>2</sub>  
emissions in OEL mode  
40 to 50%



Reduction of power  
required 15%



What if...  
we could  
save more  
lives?



Reduced vibration by  
unloading of main rotor at high  
speed thanks to wing



Increased customer comfort

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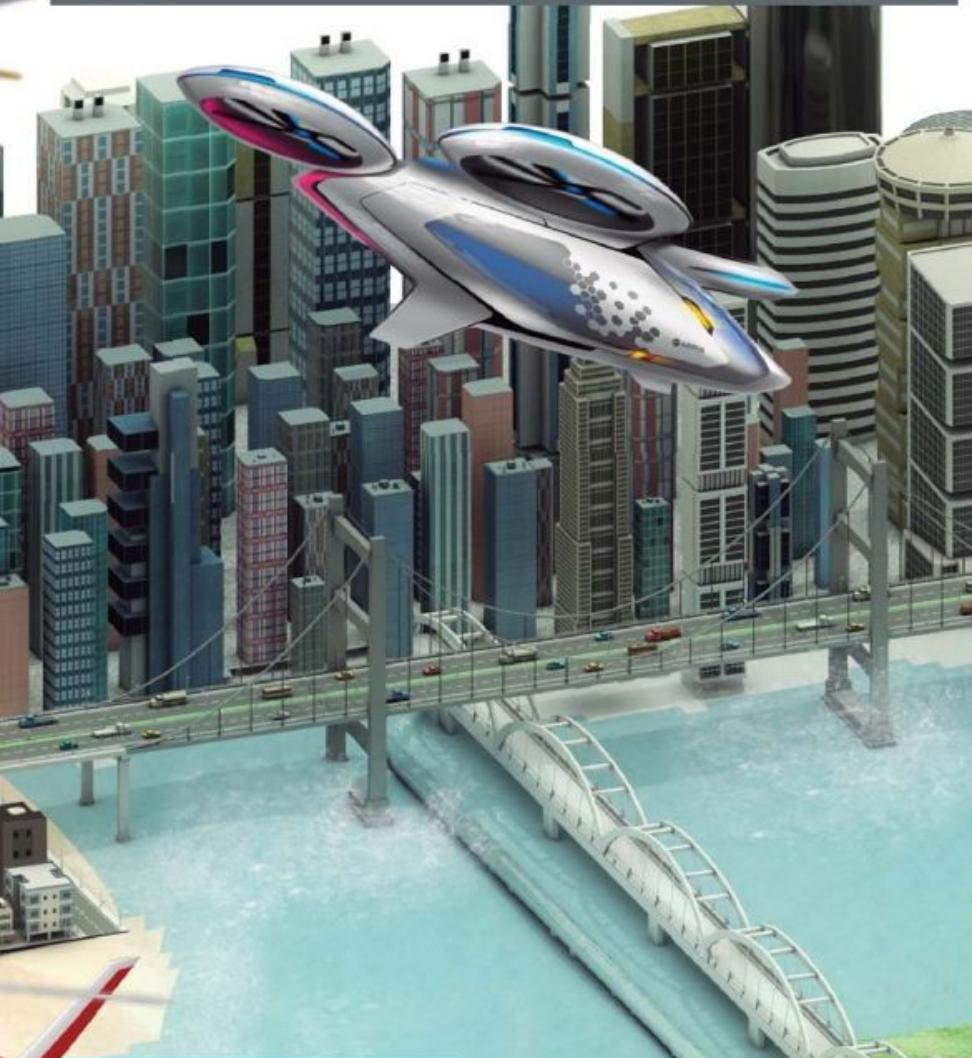
Source: Airbus.

Infographic: © beatrizsantacruz.com, Airbus and Airbus Helicopters Design Studio - 2016

## MOBILITY

### CityAirbus

Customers use an app to book a seat on a CityAirbus, proceed to the nearest helipad, and climb aboard to be whisked away to their destination



## SPEED

### CleanSky2

Ensure full operational compatibility with VIP/Exec, SAR & EMS missions

#### MORE LIVES SAVED:

 Time to target reduced

 More surface covered in the "golden hour" timeframe

 Shorter time on board for a given mission

What if... we could travel more easily within megacities?

The shared economy principle would make journeys in the CityAirbus affordable



Up to 4 passengers will share the aircraft.



A flight would cost nearly the equivalent of a normal taxi ride for each passenger, but would be faster, more environmentally sustainable and exciting



Low emissions



Low acoustic footprint



Multicopter architecture



Electric vertical take-off and landing air vehicle

## URBAN LOGISTICS

### Skyways

The ambition of Skyways is the seamless integration of UAS into logistics networks and daily life in a safe, secure and economically efficient manner

What if... logistics were no longer a problem?

 Commercial drones that operate safely over urban areas

 Enhanced consumer services with economic effectiveness

# INNOVATE FOR TODAY

While Airbus' research programmes have their sights set on future innovations, the company is just as intent on making improvements to its current range—a company-wide objective of using technology for the benefit of today's customers.

Article: Heather Couthaud

On test benches, in innovation labs and scrawled across white boards, Airbus is envisioning and testing a host of new concepts for its current fleet. These might be anything from new technology and materials, to improving maintenance or reducing overall cost—on either a grand scale or right down to the components level.

### AN AVANT-GARDE DESIGN

The visually striking H160 introduced in 2015 is a testament to the direction Airbus has taken in its research and development: innovate for today. The helicopter owes a great deal of its visual glory to this approach, but even areas like performance, for instance, exhibited an improvement during some 360 hours of flight testing with 2 prototypes. "We are always thinking about new solutions, even for the existing range," says Tomasz Krysinski, Vice President Research and Innovation Helicopters.

### A FLYING LABORATORY

Such ideas are part of efforts to improve passenger comfort and affect positive changes to environmental factors like fuel consumption and

© Christian Keller

sound emissions, now and in the short term. The H135-derived Bluecopter is the company's flying test bed for new technology which, when successful in bringing looked-for improvements to sound, safety or fuel efficiency, can then be implemented on the current range.

### REDESIGNING WITH A PURPOSE

Seeking to influence the safety and competitiveness of its in-service fleet, the manufacturer is actively exploring new processes and technology. Employing innovative solutions like supercritical shafting technology, ALM (additive layer manufacturing) and cost-efficient redesigns are further enhancements that bring value as these changes are applied across the fleet. ■

### Innovating for safety

"A lot of what we do with safety links to the idea of simplicity and robustness," says Tomasz Krysinski. In partnership with several companies and academic institutions, Airbus is also exploring improvements to helicopter interiors, particularly in composite crash-resistant seats with airbag-loaded seat belts, and windows with a greater facility of egress. Another push is to de-risk technology before it gets to the flight stage. "Whenever I speak about innovation axes, safety is always at the centre of our logic," says Tomasz Krysinski.



# WORKING INNOVATIVELY

Ever-tighter development cycles, the advent of new manufacturing technologies, the emergence of new players in the world of vertical flight, and new consumer habits have all conspired to turn engineering work practices on their head. A revolution is underway, one that demands an unprecedented level of adaptability.

Article: Alexandre Marchand

Engineering is facing an ever-changing environment. Development has to be agile, without it impacting on quality, aircraft maturity and, above all, flight safety, all of which means that agility must go hand in hand with robustness. Working methods are evolving with a view to making that happen, offering teams the opportunity to take more control of their workloads, commitments and performance. Innovation is extending beyond hierarchical levels and the role of management is no longer to control but to support.

A switch like this must be backed up by a workspace that is a tool in its own right and encourages interaction between different functions. Despite the increasing complexity of developments, the growth of specialties and the dispersal of knowledge, only teamwork can deliver a successful solution. Now is the time of platforms and of assembly and rapid-prototyping workshops that make use of new technologies.

## VIRTUAL REALITY AND 3D PRINTING DRIVE DEVELOPMENT

Virtual and augmented reality occupy a central place in all of this, as an extension of the digitalisation that has already taken root in working practices. Products and processes designed on computers come into being in virtual reality rooms. Harnessing a not insignificant advantage, teams around the world can instantly share the same 3D-based working environment. Modern-day engineering would be inconceivable without this virtual collaboration.

There is also a place for the sense of touch, however, with the parallel development of 3D printing: this gives us the ability to handle what

we see on the screen and, in return, to create new forms that were hitherto impossible to produce. It is a rare example of the concrete opening new horizons to the imagination.

## NEW AND INNOVATIVE WAYS OF WORKING

Now is also the time for work to be organised into sprints lasting just a few weeks, with a well-defined deliverable, the pooling of skills and energies, speedy approval, and, at the end of it all, failure or success, Silicon Valley-style. Should it prove to be unviable, a concept should vanish

just as quickly as it appeared. Teams should be given the freedom to invent the applications of tomorrow, the ones that have yet to be even dreamed up. We should not abandon all idea of control, however. Whether it is the maturity gate, product lifecycle management or something else, a solid framework still needs to be in place to support these free spaces, to prepare the ground for both industrialisation and product development. After all, regardless of what the future may hold in terms of the advance of digitalisation and virtualisation, the ultimate aim is for reality to emerge as the sole victor. ■



UP ABOVE





© Anthony Pecchi / The H160 over the Camargue with an A400M and an A350.

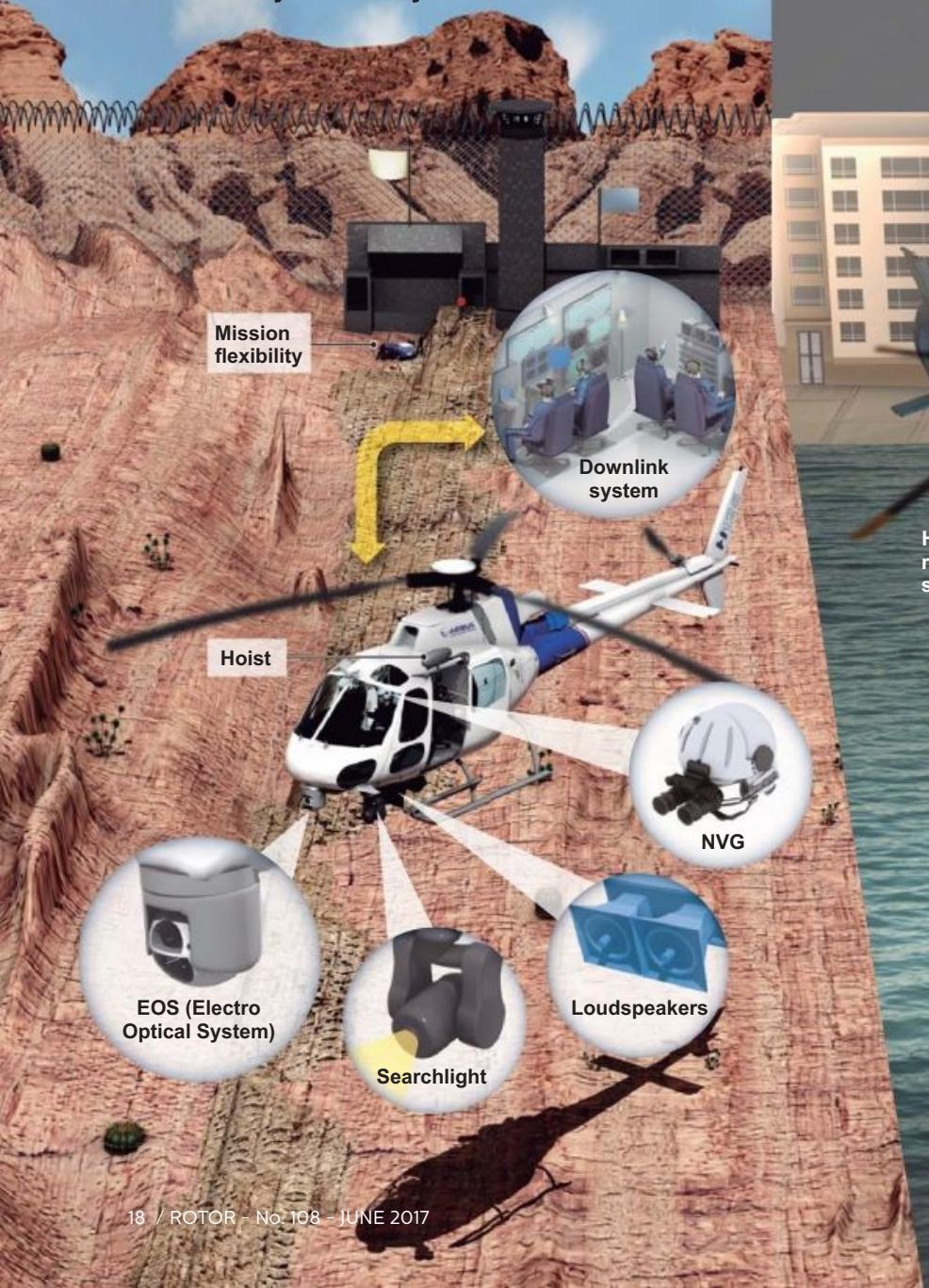
# LAW ENFORCEMENT

For the full complement of airborne law enforcement missions – including those performed with city, state or highway police; carried out by customs, border patrol, and coast guard units; and implemented by drug enforcement, SWAT or search teams – Airbus provides the helicopters, capability and special equipment to get the job done – no matter how complex the task.

## H125

### SURVEILLANCE AND BORDER PATROLS

Patrol a wide perimeter in strategic areas in a short amount of time with a customised eye in the sky.



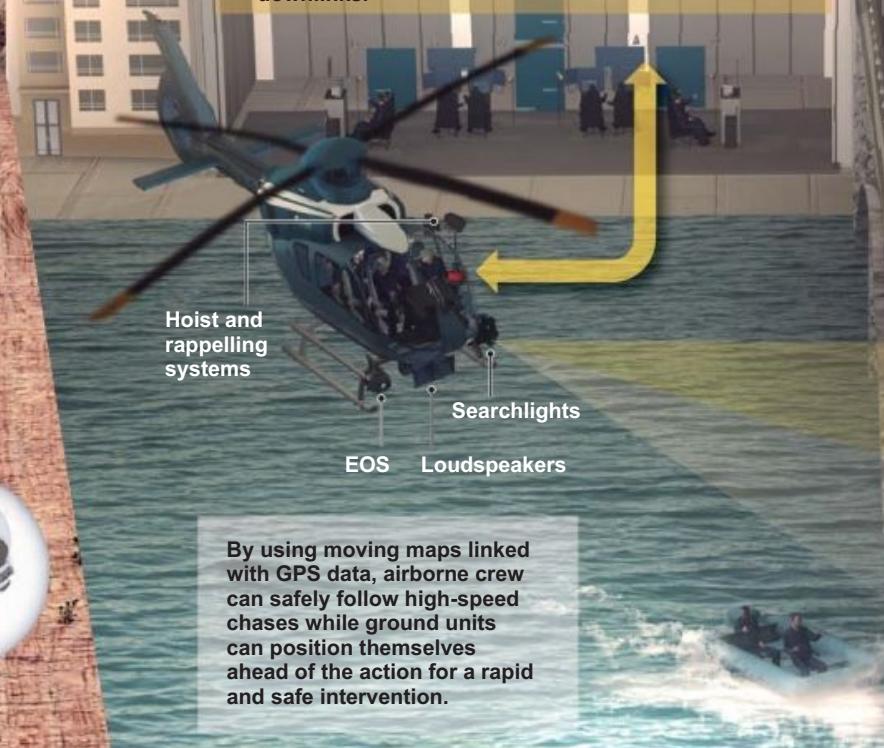
## H135

### AERIAL SUPPORT

Airbus' lightweight helicopters are ready in no time, with a quick and automatic engine start-up sequence, excellent performance and high availability rate.

#### DLINK SYSTEM

Transmit data from the helicopter's equipment to personnel on the ground, using microwave digital downlinks.



#### Key figures



Endurance

**H125**

4 h 28 min

**H135**

3 h 28 min

**H145**

3 h 57 min

## Law enforcement helicopters, the force multipliers



Risk minimisation



Fewer personnel required



Discretion



Time savings



Airborne imaging technologies

# H145

## ANTI-TERRORISM

The aircraft can be converted from surveillance to SWAT unit configuration and back within 1 hour.



The H135's compact size allows for landings in confined areas.



### Useful load



### Capacity



### Maximum range



### Fast cruise speed

997 kg / 2,198 lb	1 / 4	631 km / 341 NM	251 km/h / 136 kts
1,417 kg / 3,124 lb	1 / 6	614 km / 332 NM	252 km/h / 136 kts
1,781 kg / 3,926 lb	2 / 9	651 km / 352 NM	240 km/h / 130 kts

1 - Thierry Tea,  
CEO of PhilJets.

2 - PhilJets transported about  
1,000 passengers on VIP  
tourism flights in 2017.

3 - The H130 lands on the  
Flower Island helipad.

4 - Passengers fly over the  
turquoise lagoons of the  
Palawan Archipelago.

5 - The Flower Island team  
with Captain Bonavente.

# VIP tourism on the other side of the world

**From fleet management to luxury tourism, to air operations, charter flights or even EMS,** PhilJets has become a key player in the aviation industry in the Philippines since it was founded in 2013. Rotor embarks on a unique flight towards the emerald islands.

Article: Marine Belaresque – Photos: Anthony Pecchi

It is 8 in the morning in Manila. The PhilJets hangar in the airport is opening its doors. An exceptional tourist flight is planned for the morning and its preparation is meticulous. "Customer satisfaction is the priority," explains Thierry Tea, the airline's CEO.

## READY FOR TAKE-OFF

Dressed in his impeccable white shirt, Captain Eduardo Bonavente gathers today's team around him to remind them of the safety measures of the flight and to give instructions. In a few hours, the customers will arrive and the helicopter will be ready for take-off. On the programme: a paradise destination and a breathtaking flight. On behalf of its customers, the airline manages a fleet of Ecureuil helicopters, 6 aircraft including 4 H130s, 1 EC130 B4 and an AS350 B2. Today it is an H130 that will take off on a trip in the Palawan archipelago. Unveiling its blue indigo paint scheme, the helicopter basks in the sunshine for a few minutes. The ground crew carries out a pre-flight inspection and refuels and performs a fuel quality check while others check the weather and prepare the flight clearances. It's 11 o'clock, and the customers have arrived. The businessman and his wife make themselves comfortable in the helicopter while the pilot performs the final checks with his mechanic. There is hardly the time for a head-to-head selfie before the helicopter is flying over the Airbus Helicopters Philippines hangar a few hundred metres from the PhilJets facilities.

According to Thierry Tea, the space and comfort offered by the cabin are real assets for the airline. "We are working to offer a unique experience to our customers," he says,

explaining the choice of the H130 with which PhilJets has been operating since March 2014. "The H130 meets the needs of our customers in terms of both capabilities and operating costs."

## DREAM IN MIDAIR

Heading to northeast Palawan. The couple has chosen to spend the weekend on Flower Island, a desert island bordered by a pristine beach of white sand, floating on a turquoise blue sea, with a backdrop of dense green jungle. "Palawan is a prime site for luxury tourism," explains Tea. "The Philippines is becoming an increasingly popular destination. Our customers want to explore the archipelago from the air and go off the beaten track." The airline transported about 1,000 passengers on VIP tourism flights in 2017.

Fitted with air conditioning, an anti-vibration system and large windows offering an unmatched view, the H130 knows how to win the affection of its passengers. With their eyes fixed out the window, the ecstatic couple admires the exotic landscapes and breathtaking seabed of the archipelago.

The time for photos has gone; now is the moment simply to enjoy the beauty of nature. A succession of black cliffs, coral, islands and islets, the helicopter ride is a journey of discovery over an extraordinary panorama. An hour and a half later, after flying over picture-postcard landscapes, the aircraft lands delicately on the helipad of one of the most beautiful islands in the world, Flower Island. Next rendezvous in 2 days' time to collect the Robinson Crusoe couple. ■



**H130**



- Capacity: 1 pilot + 6/7 passengers
- Engine: 1 Turbomeca Arriel 2D
- Maximum cruise speed: 237 km/h (128 kts)
- Range: 617 km (333 NM)
- Endurance: 4 h



## MISSION

### Coast Guard total workforce

87,569 of which:

- **Active duty:** 40,992
- **Reserve:** 7,000  
(part-time workforce)
- **Civilian:** 8,577
- **Auxiliary:** 31,000  
(all-volunteer workforce)

**Aircraft fleet:** 201, of which  
100 MH-65 helicopter

**Average number of rescues per year:** 16,000 cases with  
3,650 lives saved

**Total number of SAR rescues with MH-65:** over 94,000

**Total MH-65 flight hours:** over  
1.5 million

**Air stations and bases:** 16 Air Stations in the continental United States, Alaska, Hawaii and Puerto Rico; 1 Aviation Training Center (ATC) in Mobile, Alabama; 1 Helicopter Interdiction Tactical Squadron (HITRON) in Jacksonville, Florida



1



2



3

**1** – The US Coast Guard has 100 MH-65 helicopters, a version derived from the Dauphin.

**2** – A military service and a branch of the armed forces, its missions include search and rescue (SAR) operations, among others.

**3** – The Coast Guard service can call on more than 87,000 members, of whom 40,000 are on active duty.

UNITED STATES

## “A phenomenal service”

In 2016, US Coast Guard aviation celebrated its 100<sup>th</sup> anniversary.

This service has an illustrious history helping with everything from war efforts to bolstering US borders in homeland security. Below, a closer look.

Article : Heather Couthaud – Photos: US Coast Guards

They changed to orange for missions in the Arctic. Traditionally, US Coast Guard aircraft bear the distinctive “racing stripe” paint scheme – a white body marked with a red and blue stripe. Aboard ice-breakers in the Arctic, someone realised the Coast Guard needed a helicopter livery that would be visible against the snow. Today, its fleet of 100 MH-65\* helicopters are painted a bold orange, a sign of the Coast Guard’s versatility in the face of need. Versatility serves in good stead; the Coast Guard is tasked with ensuring the United States’ maritime safety, security and stewardship. A military service and a branch of the armed forces, its missions include search and rescue, homeland security, environmental protection, the interdiction of illegal drugs and migrants, and the enforcement of fisheries laws.

### A HIGH VOLUME OF MISSIONS

It is a visibly huge service. With a total workforce of more than 87,000 – 40,000 of whom are on active duty – the Coast Guard’s presence is recognisable to nearly anyone who has seen its helicopters pass overhead or its boats buzz harbours. The huge ice breakers and cutters – 243 in total – are perhaps its most iconic symbols, yet its 2 groups of smaller “assets” – boats and aircraft – are more ubiquitous, accomplishing a high volume of varied missions. “The Coast Guard is a phenomenal service because we adapt to what is needed,” says Commander Scott Sanborn, operations officer and chief pilot of Air Station Houston. “Depending on the mission requirement, the Coast Guard is always ready to respond with an aircraft, a boat, a cutter, or a combination of assets. We will find a way to make it work.”

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**Scott Sanborn,**  
operations officer and chief pilot of Air Station Houston.

201 planes and rotorcraft comprise its airborne fleet. In 1985, the Coast Guard began procuring Aerospatiale HH-65 helicopters\* and assigning them to air stations – bases serving a particular geographic region. As the Coast Guard’s primary short-range rescue aircraft, they are equipped with a rescue basket, hoist and sling, and, if necessary, a litter or dewatering pump. A SAR crew comprises 2 pilots, a flight mechanic, and an EMT rescue swimmer.

### “CARRY A SIGNALLING DEVICE”

Over the course of an 18-year career in which he’s seen his share of rescues, Sanborn’s advice to boaters is: notify someone where you’ll be going and how long you’ll be out, carry a signalling device and wear a life jacket. Spotting a man overboard isn’t always easy.

One such case occurred last year. Two fishermen in Galveston Bay went overboard when their boat swamped. The Coast Guard was alerted when the men didn’t arrive back when they were due. For two days, Coast Guard crews searched but, though they located the boat, they couldn’t find the men. On their last leg, with minimal fuel remaining, they spotted something from the window. “He was hanging onto an abandoned oil platform,” says Sanborn. “He’d spent two days there. Finally, he took off his shirt and got the crew’s attention by swinging it around over his head.”

Sanborn adds that people who join the service do so because they want to help others. “In the Coast Guard, you get talented folks who are motivated to find a way. There’s a lot of creativity to come up with a solution.” ■

\* MH-65 helicopter: a variant of the Dauphin, it is an enhancement of the HH-65 initial version operated by the USCG.

# Performance counts

**The German operator Wiking Helikopter Service GmbH is the first to use an H145 to operate off the North Sea coast in offshore wind parks or to transfer harbour pilots.** The key advantages of this new helicopter: the Helionix cockpit and more powerful engines.

Article: Eva Schaar – Photos Wiking Helikopter

It would be difficult to find a German company with more experience in heliborne civil missions in the marine environment than Wiking Helikopter Service GmbH. Since 1975, the operator, based at the JadeWeser airport near Wilhelmshaven, has been transferring harbour pilots to vessels in Helgoland Bay, transporting staff and equipment to floating wind farms in the North Sea, and participating in air rescue missions off the German coast. “When we operate offshore, the highest standards are required,” says Lars Hilgert, director of flight operations and himself a pilot at Wiking. The aircraft must meet the operators’ and customers’ most stringent safety, performance and cost-effectiveness requirements. This is why Lars Hilgert scrupulously tested the H145 before integrating it in the company’s fleet. Since the beginning of the year, it is the first H145 in offshore configuration to operate in the North Sea.

## SPECIALIST: OFFSHORE WIND INDUSTRY FLIGHTS

“An important factor for us was the helicopter’s increased maximum power with one engine inoperative (OEI), along with the ability to hover outside ground effect (HOGE) for 2 minutes. This allows us to carry 350 kg of additional payload, which is crucial for work in offshore wind farms,” says Hilgert. Wiking transports men and equipment to offshore wind power platforms and facilities for companies in the energy sector. Heli drop and handling of people by hoisting or as HEC - Human External Cargo - are demanding tasks that always require the on-board

presence of 2 pilots and a hoist operator. Before the helicopter reaches the wind turbine, the control room brings the rotors to a standstill and sets the turbine to what is known as the hoist position. The helicopter hovers over a 4-by-4-metre basket positioned directly on the turbine housing. Then, from a low altitude, the hoist operator eases the engineer and bags of equipment down onto the platform, or drops the rope for harnessing returning offshore personnel and their equipment. “During these missions, the visibility in the Helionix cockpit is a real advantage,” says Lars Hilgert. “Using the main multifunction display (MFD) and the First Limit Indicator (FLI), I can immediately see all the important information and can focus on the transfer.” The 4-axis autopilot and automatic hover function make the task much easier.

## THE H145, WITHSTANDING ANY TEST

Above all, when exterior conditions are challenging! The helicopters are most frequently deployed during the colder months of the year, when the sea is too rough to transport people by boat. They take off in visual flight conditions and transport service technicians, depending on customer specifications, at wind speeds of up to 27 metres per second. This corresponds to force 10 on the Beaufort scale: storm conditions. “The worse the weather, the more we fly,” explains Hilgert. “This is exactly why offshore pilots need powerful and reliable aircraft. The first H145 is a great complement to our fleet and we’re already looking forward to receiving the second one, due for delivery in October.” ■

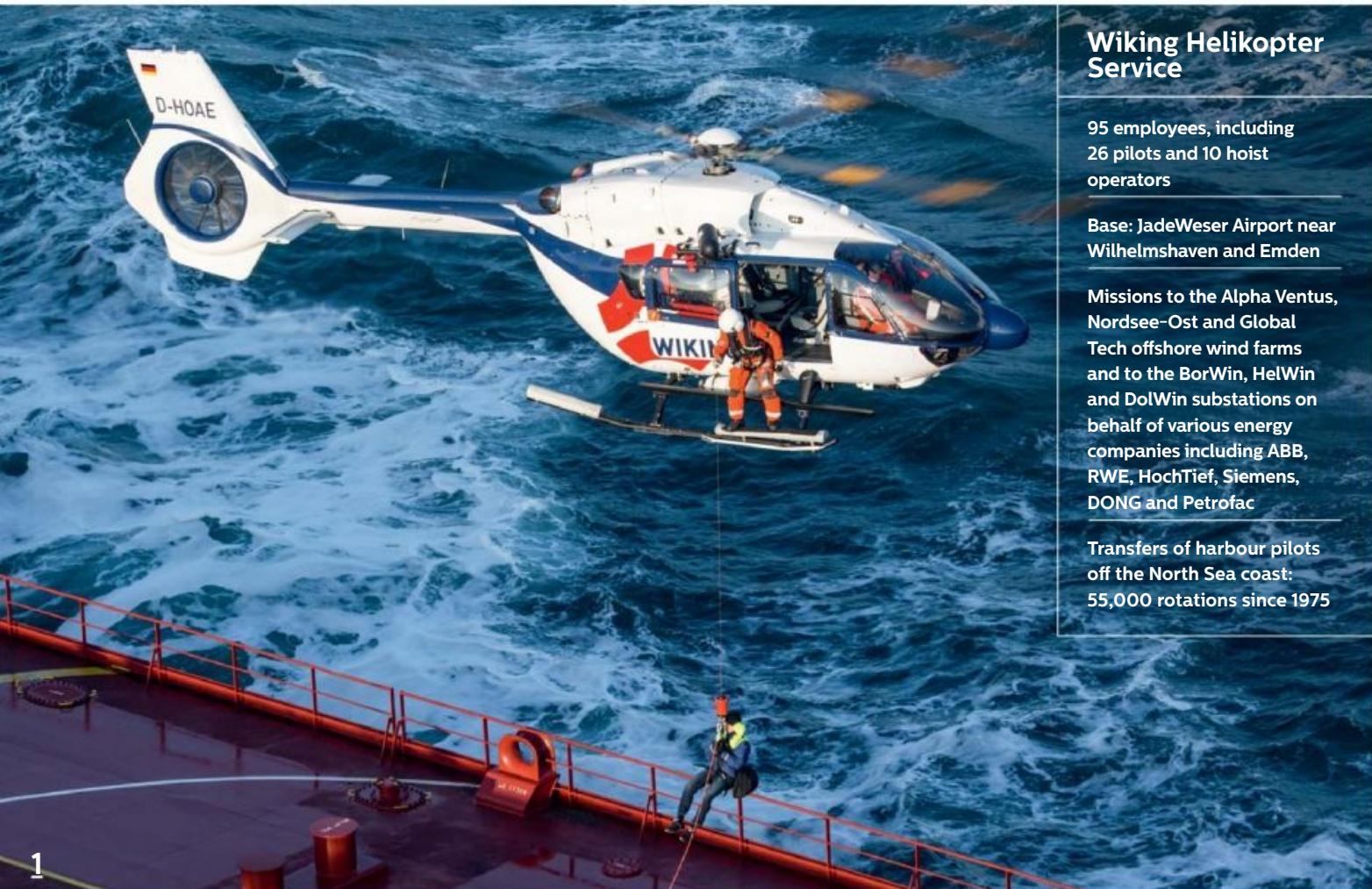
**1 – The improvements on the H145 mean that Wiking can carry up to 350 kg of additional payload.**

**2 – Wiking transports staff and equipment to floating wind farms in the North Sea.**

**3 – Lars Hilgert, director of flight operations and pilot at Wiking.**

“During missions on the high seas, the visibility in the Helionix cockpit is a real advantage.”

**Lars Hilgert**, director of flight operations and pilot at Wiking.



## AROUND THE WORLD



**1 – In 2014, the emergency centre Beijing 999 took delivery of an H135, the first helicopter dedicated to HEMS missions in China.**

**2 – Marie-Agnès Veve, Managing Director of Airbus Helicopters in China since September 2016.**

**3 – An H155 from the Dalian police.**

CHINA

## Being Chinese in China

**This year, Airbus celebrates 50 years in the helicopter industry in China.**

Below, we take a look at the country's rotorcraft market and outlook for the future.

Article: Heather Couthaud

Where commercial strategy is concerned, Airbus Helicopters in China is noteworthy in its ambition: to become more Chinese. "The market in China is large and promising," says Marie-Agnès Veve, Managing Director of Airbus Helicopters in China since September 2016. "There are so many new customers in China within all market segments that we need to move fast and rely on a strong domestic distribution network."

Airbus has had a presence in the country since 1967, with its first helicopter sale, and lays claim to more than 35 years of industrial cooperation. With a 40% market share in the civil helicopter market, the manufacturer has clearly found a formula that works: a history of good relations and a strong local footprint. "We differ from our competitors because we are our own distributor and are equipped to provide support and services in China," says Marie-Agnès.

### SERVING MULTIPLE MISSIONS

Having a local presence is a critical path the manufacturer has taken, and one which is opening avenues in China's main segments. Currently, a fleet of 240 Airbus helicopters serve multiple missions; of these, there are 200 in civil and parapublic sectors, including oil and gas, law enforcement, search and rescue (SAR), helicopter emergency medical services (HEMS) and firefighting. Light single-engine models like the Ecureuil make up a large part of the Airbus fleet in China (100 as of December 2016, the largest fleet of single-engine helicopters in the country), centred mainly on utility missions. The Super Puma and Dauphin families are favoured for homeland security, law enforcement, and firefighting.

### PROMISING MARKETS

Several favourable market segments remain as-yet underequipped. Provinces and megacities like Shanghai, Guangzhou, Shaanxi, and Dalian have started outfitting their police forces with helicopters, a relatively new development.

In emergency services, currently only 24 helicopters are dedicated to HEMS, for a population of 1.4 billion people. By way of comparison, in mature markets the need is an average of 2 EMS helicopters per million. To meet these needs, in 2016 Airbus entered in a joint venture with a Chinese partner to build 100 H135 helicopters over 10 years. The industrial contract involving a final assembly line in Qingdao is in its final stages. "This is a promising contract as it represents a new business model with Chinese partners," says Marie-Agnès.

Which brings us back to Airbus' strategy in the country. "Our first priority is safety because China is a new helicopter market," says Marie-Agnès. A strong network of operators is another strategic underpinning for, while helicopters are being introduced, the training of pilots, mechanics and operators is imperative.

Local partnerships will help in this area. Developing Airbus' geographic distribution – for example, following the Chinese national strategy of "going west" – is a fourth pillar. And finally, being Chinese. "Our footprint, our staff, and our partnerships with local governments like Qingdao are key," says Marie-Agnès. "We are still on a learning curve, but we are excited and motivated to achieve great success in this dynamic country." ■

"The market in China is large and promising, with so many new customers within all market segments, that we need to react quickly and rely on a strong domestic network."

**Marie-Agnès Veve,**  
Managing Director of  
Airbus Helicopters in China.

# Profession: Tech Rep

**In direct contact with operators, Tech Reps play an essential role as technical advisors.** They guarantee a relationship of trust between Airbus Helicopters and its customers.

Article: Alexandre Marchand

1

## Who are Tech Reps?

More than 200 Airbus Helicopters Tech Reps are on duty around the globe to provide customers with services at a local level. With their vast technical knowledge of helicopters, they can find the answer to all sorts of questions.

Tech Reps acquire in-depth knowledge of support activities (troubleshooting, logistics, technical documentation, service bulletins, etc.) at the many training sessions they attend on a regular basis. They also make use of their production experience and Part 66 qualifications, recognised by aviation authorities around the world, to provide customers with fast response times and quickly get their helicopters back in the air.

But Tech Reps offer more than just technical know-how. These highly skilled representatives build bonds of trust with customers. For many of the latter, in particular those in remote areas or hostile environments, the Tech Rep may be their only point of contact with Airbus. ■



Tech Reps mainly have production or operational backgrounds.



2

## Tech Reps: added value for customers

The Tech Rep is tasked with providing technical support and finding solutions in all types of situations, whether it be to repair a helicopter or assist customers when a new model enters service. In many cases, Tech Reps can also break down geographical barriers. Their main mission is to provide the customers with the technical knowledge they need, where they need it—even in the theatre of operations. The Tech Rep also acts as an interface between the customer and the manufacturer.

In more of an advisory role, Tech Reps can suggest ways to optimise maintenance or fleet management, or even advise customers in the use of particular tools. They may also help evaluate incidents and provide the customer's technicians with on-the-job training to enhance their skill levels.

In parallel, they provide recommendations about the application of Service Bulletins and remain attentive to the operational needs of their customers (CAMO, MIS, HUMS, HCare, etc.).

Thanks to the information they collect and their intimate knowledge of customer needs, Tech Reps are a privileged source of feedback that is taken into account for the continuous improvement of Airbus Helicopters products and services. ■



Since 2016, each operator, regardless of size or activity, receives at least one visit a year from a Tech Rep.

© Jérôme Deulin

## 3 The Tech Rep and the customer: working hand in hand

Customer satisfaction surveys repeatedly testify to the efficiency of Airbus Helicopters Tech Reps. Customers consider them to be dedicated technicians, passionate about their work and fully committed to their missions.

Tech Reps and their customers strive towards a common goal: to optimise helicopter availability while reinforcing operational safety. Customers also appreciate the efforts made by Airbus Helicopters to strengthen its service network, which now includes approximately 200 Tech Reps around the world dedicated to customer care. Since 2016, each operator, regardless of its size or activity, receives at least one visit per year from a Tech Rep. When customers receive a new helicopter, they note their appreciation in having a Tech Rep on hand! ■

### Key figures

- 200 Tech Reps worldwide
- 152 customer countries
- Approximately 3,000 operators worldwide
- In 2016, the service recorded 240 tool rentals in collaboration with 35 different countries

## 4 New tools to improve Tech Rep expertise

The Airbus Helicopters Tech Rep department in Marignane has its own tool rental centre with approximately 1,700 tool references in stock for Tech Rep and customer rentals. To improve the availability rates of customer helicopters and reduce downtime needed for technical analysis, Tech Reps now use connectivity tools that speed up response times. One example currently being deployed is Skytech, a real-time video communication application for smartphone that enables Tech Reps to discuss technical problems face-to-face with Airbus Helicopters specialists.

Customers can use the Technical Requests Management (TRM) application to ask questions on line. They receive an acknowledgement of receipt within 24 hours (or as few as 3 hours for AOG situations) with a firm commitment for a resolution date. The TRM is also used as a database to share information with the Design Office. Each case is recorded in the database, and customers can consult their personal space to view a listing of all problems that have been encountered in their fleet. ■



For more information, please contact the tool rental service at: [support.tools-rental.ah@airbus.com](mailto:support.tools-rental.ah@airbus.com)



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## Iron and ice: missions in Norway's remote reaches

**Operating from 3 bases in Oslo, Stavanger, and Torp, Pegasus Helicopter flies around 4,600 hours**

**a year.** With 10 H125 helicopters and an EC135 T2, the operator undertakes missions in Norway and Northern Europe ranging from power line surveillance to transporting supplies to remote communities.

Article: Heather Couthaud - Photos: Pegasus Helicopters



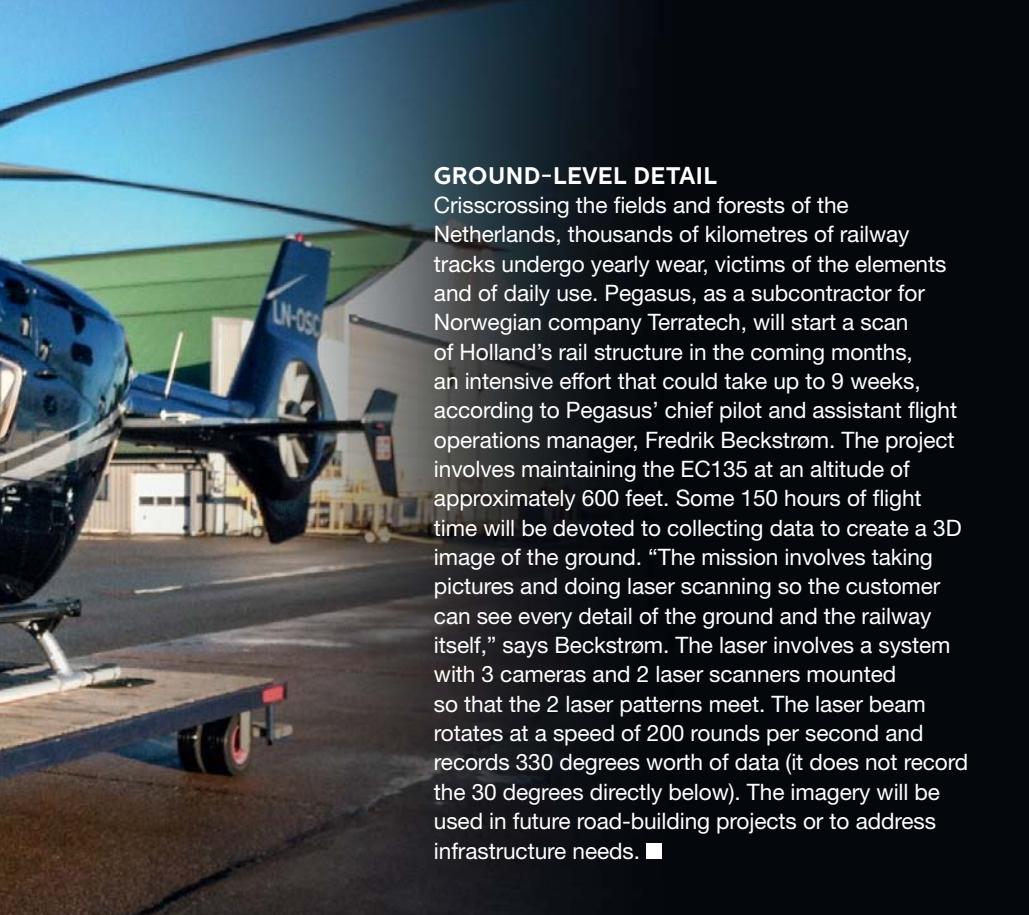
### A ROUGH LANDSCAPE

Nearly every week, Beckstrøm and his crew fly people out to remote locations for work. "Norway's landscape and topography is rough, with high mountains. Often, people are not able to get into these sites without helicopters," he says. Several times during the season, the crew will transport staff and equipment, by sling load, to the top of peaks such as Snøhetta at an altitude of 7,500 feet. In winter, these antennae sites are hardest to reach, when ice and snow, fewer hours of daylight, and fast-moving heavy weather mean people are more likely to get stuck at their posts. Pegasus relies on the versatility of its H125 fleet, and in particular on the digital G500 avionics display which equips some of its helicopters. "All in all, the new avionics has given us a better situational awareness," says Beckstrøm. "The G500 provides us with a lot of new, good information such as wind direction and terrain warnings. The pilots' feedback is mainly good." This past winter was milder, luckily. "We managed to get everyone out who lives out here," Beckstrøm says. ■



## GROUND-LEVEL DETAIL

Crisscrossing the fields and forests of the Netherlands, thousands of kilometres of railway tracks undergo yearly wear, victims of the elements and of daily use. Pegasus, as a subcontractor for Norwegian company Terratech, will start a scan of Holland's rail structure in the coming months, an intensive effort that could take up to 9 weeks, according to Pegasus' chief pilot and assistant flight operations manager, Fredrik Beckstrøm. The project involves maintaining the EC135 at an altitude of approximately 600 feet. Some 150 hours of flight time will be devoted to collecting data to create a 3D image of the ground. "The mission involves taking pictures and doing laser scanning so the customer can see every detail of the ground and the railway itself," says Beckstrøm. The laser involves a system with 3 cameras and 2 laser scanners mounted so that the 2 laser patterns meet. The laser beam rotates at a speed of 200 rounds per second and records 330 degrees worth of data (it does not record the 30 degrees directly below). The imagery will be used in future road-building projects or to address infrastructure needs. ■



"Our operations cover almost anything you can think of using a helicopter for, from flying passengers to all types of sling load operations. With this type of variation, we find it useful to have a good all round helicopter. The H125 has a low cost of maintenance with a low snag rate."

**Fredrik Beckstrøm,**  
chief pilot, Pegasus Helicopter.

## In the field



### TELEVISION AND FILM

- **Where:** All over Norway
- **Since:** Throughout 2016

Pegasus' fleet is occasionally called upon to shoot footage for television and film. An H125 is equipped with a variety of equipment, including an aerial camera mounted on a pole outside the helicopter. In a recent mission, a technician inside filmed scenes for the Norwegian-produced television reality series, 71 Degrees North, which follows celebrities as they traverse Norway to reach the country's northernmost point. The region's stunning landscape comes into play as the participants' routes are filmed for later editing.

### SLING LOADS

- **Where:** Hankø
- **Since:** April 2017

This spring, Beckstrøm transported windows, insulation and wood by sling load to the island of Hankø in the Oslo Fjord, where the material would be used to build a vacation cabin. He and his crew are often called on to bring anything from building materials to power line equipment to the remote islands just off shore of the southern part of Norway, where ferry boats and bridges don't serve the smallest islands. Helicopters are a practical and fast solution, and keep the area unpopulated. "It's beautiful," says Beckstrøm.

### POWER LINE

- **Where:** Helgeland
- **Since:** March through September 2017

For 6 months, Pegasus devotes 2 and sometimes 3 H125 helicopters to power line inspections across Norway, a yearly undertaking. In May, Beckstrøm and his crew completed this inspection in Helgeland, off the northwest coast of Norway. An initial flight pinpoints problem spots, which are tagged using GPS coordinates. A thermal camera fly-by to look for hot spots is next, followed by a slow flight around every pole. "One guy sits in the sliding door, taking pictures of every mast," says Beckstrøm. "Of course, he's harnessed in."

# SOME CALL IT A COMBAT ZONE. THE H225M CALLS IT HOME.



**WE MAKE IT** *FLY*

The H225M is the helicopter of choice in the most dangerous warzones in the world. Equipped with a highly advanced defensive aides suite, it keeps both pilots and crew safe. It includes radar, missile & laser warning receiver, chaff and flare, and much more. On top of that, it also boasts the heaviest payload capacity, the highest speeds, and the furthest range in its category. Combined, these make the H225M more than ready for the world's most demanding missions.

Defence. We make it fly.

