

ROTOR

BY

AIRBUS HELICOPTERS

INNOVATION

The RACER programme reaches cruise speed

MISSION

Lime dropping in Scandinavia with the H125

SERVICES

Military global support contracts



Closer than ever



SINGAPORE RECEIVES ITS FIRST H225M HELICOPTER

The Republic of Singapore Air Force (RSAF) has taken delivery of its first H225M helicopter in Singapore from a contract signed with Singapore's Ministry of Defence in 2016.

This delivery is exceptionally significant as Airbus and the RSAF overcame COVID-19 pandemic challenges in 2020 to achieve a smooth handover of the helicopter.

Singapore's fleet of H225Ms is expected to assume a wide range of roles, including search and rescue, aeromedical evacuation, as well as humanitarian assistance and disaster relief operations.



TWO MORE H160s FOR THE FRENCH NAVY

The French Armament General Directorate (DGA) has confirmed an option for two more H160s for the French Navy. These aircraft will join the fleet of four H160s already contracted in 2020, the first of which is currently being assembled by Airbus Helicopters in Marignane, in the south of France.

The six H160s will be delivered in a search and rescue (SAR) configuration and will gradually start operating from May 2022 from Lanveoc-Poulmic naval air station (Brittany), Cherbourg airport (Normandy) and Hyères naval air station (Provence). Awaiting the H160M "Guépard" deliveries in the frame of the French Joint Light Helicopter programme, these H160s will take over the SAR missions currently conducted by NH90s and Panthers.

FIRST FIVE-BLADED H145 RETROFIT

Airbus Helicopters, in cooperation with DRF Luftrettung, has performed the first retrofit of a four-bladed H145 into the new five-bladed version. The helicopter, an H145 belonging to the German HEMS operator, was first delivered in 2018 and will be deployed at DRF's base in Villingen-Schwenningen, Germany. The upgrade to the five-bladed version can be performed by any Part 145 maintenance organisation by following the associated service bulletin issued by Airbus Helicopters. It consists of exchanging the rotor system, updating the helicopter's Helionix avionics suite and installing a new horizontal stabiliser.

The innovative five-blade bearingless rotor increases the useful load and further enhances the mission capabilities of the aircraft, while eliminating rotor hub maintenance.

FIRST RESCUE HELICOPTER FLIES ON SUSTAINABLE AVIATION FUEL

A rescue helicopter has flown on sustainable aviation fuel (SAF) for the first time, achieving a new milestone in international aviation. Operated by the German non-profit organisation ADAC Luftrettung, the Airbus H145 rescue helicopter had its Arriel 2E engines ceremonially refueled with biofuel, a type of SAF.

The H145 was using a second-generation biofuel – the SAF of choice of the aviation industry – which reduces CO₂ emissions up to 90% compared to its fossil fuel equivalent, because it is produced from residual and waste materials from the circular economy such as used cooking oils and fats. As a result, the fuel has no impact on agricultural food production.



Pioneering



H125 PERFORMANCE INCREASE CERTIFIED BY EASA

Airbus Helicopters has received EASA certification for a power upgrade of the H125 helicopter. This major evolution increases the aircraft's power by up to 10% by making full use of the available power of the existing Safran Helicopter Engines' Arriel 2D engine.

While the maximum take-off weight of the aircraft remains unchanged, its external and internal load lifting capabilities are increased for a large part of the flight domain (by up to 140 kg), while the hover ceiling OGE at maximum take-off weight is increased by more than 1,500 ft (up to 12,600 ft). This extra power will be included as a standard feature, at no additional cost, on all new-built H125s delivered from September 2021 onwards, while the retrofit solution is available for all H125s already in service within the EASA region.

VSR700 ACHIEVES A FIRST STEP IN FLIGHT ENVELOPE OPENING

In May 2021, the VSR700 demonstrator achieved a test flight that pushed its speed limit to 60 kts (more than 110 km/h), entirely opening its flight envelope at low speed. At the end of the test, the demonstrator had notched more than 10 flight hours. Thanks to this milestone, the VSR700 programme is getting closer to its goal: providing the French Navy with a sea-demonstration-compatible unmanned aerial system.

If the envelope expansion procedure is similar for all aircraft, VSR700 poses a unique challenge: testing the boundaries of a whole system, comprised of a drone, ground control station and data link platform. The next step towards the final testing phase of VSR700, which will occur during a second campaign at the end of 2021, will consist of upgrading the prototype with a complete operative mission system.



ADVANCED AUTONOMOUS FEATURES TESTED ON THE FLIGHTLAB

Airbus is introducing autonomous features to its Flightlab helicopter through a project code-named Vertex. The combination of technologies will enable a system that can manage navigation and route preparation, automatic take-off and landing, as well as following a predefined flight path. Airbus Urban Air Mobility will also benefit from this technology as an essential stepping stone towards autonomous flight.

[More information here](#)

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The smile factory

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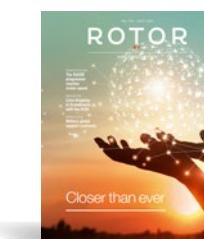
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Bruno Even, CEO of Airbus Helicopters

"We know that every customer is unique and there is no substitute for proximity when it comes to finding effective and appropriate solutions to each problem."

Resilience. Initially this word referred to the ability of a substance or object to spring back into its original shape after a major impact. However, with the pandemic, this term has assumed a much wider significance for all of us who rode out this crisis. At Airbus Helicopters, resilience is about emerging not only unscathed but stronger as well; learning from experience, improving and being more united than ever.

One of the many lessons we have learned from this crisis is the importance of our physical proximity to you, our customers. During a period of restrictions on travel, being able to call on 29 Customer Centres, 87 Service Centres and 79 Maintenance Centres across the globe has been a key factor allowing us to continuously support operators on all five continents.

Being there for you means speaking your language, understanding your operational and regulatory requirements, being reactive and flexible and providing responses that are adapted to your needs. We know that every customer is

unique and there is no substitute for proximity when it comes to finding effective and appropriate solutions to each problem. I cannot think of better international ambassadors for our brand than the nearly 6,000 people working in our network to provide Airbus Helicopters' solutions and adapt them to every corner of the world.

It is precisely because this worldwide network has been such a vital aspect of our resilience that I pay tribute to them today in these pages. I want to thank them for knowing how to innovate, reinventing themselves and being more flexible than ever so that our helicopters can continue to save lives, protect the population and bring people together.

They say that in the midst of every crisis lies great opportunity. Now more than ever, we have the opportunity to foster and develop the diversity that has proven to be one of Airbus Helicopters' greatest strengths during this period. We want to continue to be closer than ever to you, whenever and wherever you need us.

500

KM

The Spanish Air Force SAR service carried out an impressive rescue 500 km south-west of the Canary Islands.

Three people were rescued in one of the farthest missions ever performed by an H215.

40**PARTNERS**

in 13 European countries participate in the RACER project.

130**MEMBERS**

The "Airbus Helicopters Network" on the AirbusWorld collaborative platform has 130 members.

3 NH90s

are to be deployed in Mali with the FAMET.

In 2020, the performance of the Airbus Helicopters network (independent partners and subsidiaries) generated

139 orders for helicopters,

52% of Airbus Helicopters performance in quantity and 28% in value.

686**HEMS MISSIONS**

have been carried out by the H145 operated by Babcock in Catania (Sicily).

3,000th**EMS MISSION**

Scotland's Charity Air Ambulance performed their 3,000th EMS mission in the same week they celebrated their eighth anniversary.

4,000**LITRES OF WATER**

is the discharge capacity of the H215 in fire fighting missions.

2 H225Ms

from the French Air Force deployed in the US for the Red Flag Rescue exercise on board two A400Ms (from the French and Spanish Air Force).

Closer than ever

Airbus Helicopters developed its long-standing international network with one key objective: proximity to customers and their operations.

Article: Alexandre Marchand



© Michael Porthmann

The COVID-19 crisis has been a major and unforeseeable event for all stakeholders in the aviation industry, including its manufacturers, partners and customers. Its consequences have been profound. Despite this, Airbus Helicopters has proved relatively resilient thanks to the support of an effective and powerful international network, built on several decades of experience. This network includes several dozen customer centres, service centres and independent distributors.





LOCAL AND ACTIVE SOLUTIONS

"This network has enabled us to stay as close as possible to our customers at all times," stresses Michel Gouraud, Head of Airbus Helicopters Partners and Network. "Despite the health crisis, we have always remained aware of their needs, and we

have been able to find fast, local solutions when they faced difficulties." All customer centres and service centres remained open at the height of the crisis, supporting customer operations, and also innovating when necessary to enable them to continue business operations without having to travel. Customer centres and independent distributors accounted for more than half of all aircraft sales in 2020. Airbus Helicopters-approved service centres continuously supported customer operations, providing proximity and quality of service while also contributing to the safety of their operations. Beyond the economic value though, "the purpose of Airbus Helicopters' network is proximity," claims Michel Gouraud. "The network exists to support customers and better meet their needs, at an operational level."

AN ETHICAL COMMITMENT

Airbus Helicopters' ethical commitment is reflected in its rigorous partner validation process. In line with Airbus policies, this commitment aims to fight all forms of corruption and provide equipment regulated by impeccable ethics. "All Airbus Helicopters partners understand these transparency requirements, support them and want them," outlines Michel Gouraud. "It's ultimately the guarantee for our end customers that their points of contact meet the highest possible ethical and compliance requirements. Our partners know that above and beyond any requirement, it's a value," he concludes.



© Helibras

1: Airbus Helicopters Inc, the customer centre in the US, supports more than 3,100 helicopters from civil and military customers.

2: To help Brazilian EMS customers during the pandemic, Helibras undertook an H125 feasibility study for the body-length bag used to isolate infected patients.

THE NETWORK IN FIGURES

29 customer centres
and nearly 6,000 employees
39 distributors
(14 of which are independent)
87 service centres
(64 of which are independent)
79 maintenance centres
(60 of which are independent)
26 repair centres
(15 of which are independent)
18 training centres
40 locations worldwide
1 dedicated community with 130 members, the 'Airbus Helicopters Network' available on the collaborative AirbusWorld platform

A CHANGING NETWORK

After the first sales-oriented customer centres were established in the 1980s, Airbus Helicopters' offer was expanded with the development of services, and the certification given to service centres and independent distributors capable of delivering the expected level of quality. To this day, the international network continues to grow. "All over the world, our customers must have local access to a reliable, high quality service solution," points out Michel Gouraud.

"This plan is stable but not unchanging," he adds. "We constantly challenge its relevance and what we could do to make it more efficient. Adjustments are always necessary when it comes to knowing whether we meet our customers' expectations." Airbus Helicopters must therefore question these expectations every day. Besides proximity, customers want the availability of parts and innovative, high-quality service solutions. That is why the Airbus Helicopters network is constantly striving for improvement.

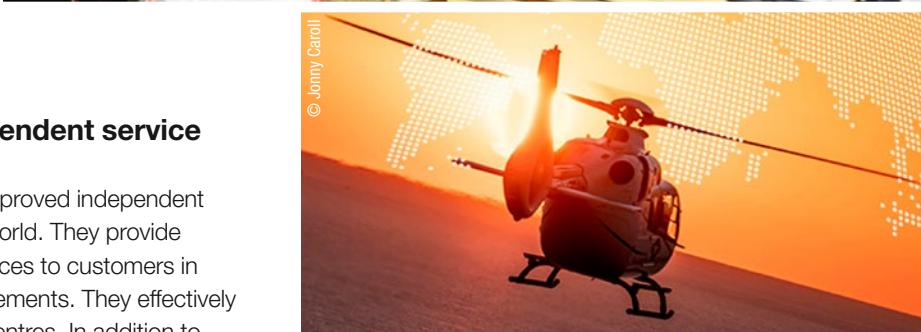
Draw me a network

Despite the difficult economic situation around the world, the Airbus Helicopters network continued to develop in 2020. The integration of new service centres, such as Helisul in Brazil, Østnes Helicopters in Norway or Microflite in Australia, made it possible to expand the network and broaden offers to operators.

1 Airbus Helicopters has 29 customer centres (or subsidiaries).

These are entities owned by Airbus Helicopters. Most of them are also certified maintenance operators and some have integrated industrial activities into the company organisation model. Beyond proximity to customers, their mission also has an impact on aircraft sales, maintenance or repair services.

The customer centre represents Airbus Helicopters at a customer level, providing the same service, expertise and discipline as the parent company. Like Airbus Helicopters Inc. in North America, the first customer centres appeared in the 1980s to highlight Airbus Helicopters' proximity to its customers and facilitate access to all markets. This network of customer centres today covers every continent.



2 The network of independent service centres

Airbus Helicopters has 64 approved independent service centres around the world. They provide maintenance and repair services to customers in line with Airbus quality requirements. They effectively complement the customer centres. In addition to their compliance with local regulatory requirements, these service centres also meet additional qualification, training and discipline requirements of Airbus Helicopters. This level of quality is sanctioned by a certification and Airbus Helicopters certificate, synonymous with greater operational safety. Airbus

Helicopters' objective is to ensure greater flexibility of operations, with a system where service centres are able to serve as one-stop shops for the entire range of services (maintenance, repair, support, training and even sales if they choose...).



4 The Training Academy

The Training Academy comprises the network of training and/or simulation centres that have been deployed on all five continents to effectively meet operator needs in terms of mission safety and reliability. A total of 18 training centres, located at the main Airbus Helicopters sites, accommodate an average of 8,000 trainees every year, of which one third are pilots and two thirds are technicians. Every training centre, without exception, offers the

3 Independent distributors

The independent distributors of services or products are intended to complete the salesforce network by providing a local service for customers where Airbus Helicopters has no direct presence. They are essential to this organisation and contribute to the deployment of Airbus' support and services strategy and customer satisfaction.

Today there are 14 distributors located in 10 countries, in Europe, Africa, the Middle East, Asia Pacific and China. This network is part of an ongoing effort to provide an efficient and relevant solution to market developments.

ALSO PRESENT IN HELICOPTER ASSOCIATIONS AROUND THE GLOBE...

Helicopter associations are key partners when it comes to promoting rotorcraft safety standards, professionalism and innovation around the world. Their main objective: to facilitate and influence the growth of the rotorcraft industry.

They are the voice of the rotorcraft and VTOL industry for all stakeholders (manufacturers; operators; suppliers; regulatory entities; financial institutions; customers and society).

In addition to all national associations, it's important to mention this year the European Helicopter Association (EHA) and the first edition of EUROPEAN ROTORS' EASA Rotorcraft and VTOL Symposium.

[Click here for more information](#)

trainees courses standardised by Airbus Helicopters, in addition to innovative training methods and the unique expertise of Airbus Helicopters' instructors. As one of the best-known training methods, the full flight simulator (FFS) uses special effects to reproduce extreme flight conditions. 22 FFS are currently available across the Airbus Helicopters network.

[Click here to find everything you need to know about the network](#), available via an app – Heli Presence – offered on all standard interfaces.

In their words

A sampling of Airbus Helicopters' network of service and customer centres tell *Rotor* what it means to be close to customers, especially during times like the current pandemic.

Article: Heather Couthaud

1. INTERNATIONAL AIRCRAFT SERVICES (IAS)

Supports: West Africa doing aerial work, onshore and offshore public transport, and line maintenance of its fleet and under individual contracts

Partner with Airbus since: first aircraft 1995; Airbus Helicopters regional maintenance centre since 2014



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"Airbus has always supported IAS as a maintenance centre"

"Our maintenance services support both our own fleet and external clients. To this aim we employ 15 full-time technicians who primarily maintain our 12 company aircraft. In addition, they also do line maintenance for institutional and private customers in the region. This is due to our reactivity, and geographic proximity. By means of illustration, we had a contract with a West African government for two Dauphins, a police helicopter and one for the president, which guaranteed our support on a 24/7 basis. During the time of IAS's maintenance contract, the presidential helicopter was able to fly more than 300 flight hours in one year's time. In a similar way, last year one of our own onshore Dauphin flew 1,200 hours in one year. Its unavailability due to unscheduled maintenance of just five days was an achievement, considering its work under very hard conditions with sand and heat. These are illustrations of the adaptation of maintenance to local conditions and constraints and performances achieved. Airbus has always supported IAS as a maintenance centre. It has been sensitive to the needs of our company. On a commercial level, we appreciate that they've shown good stability over the long term."

Hugues Moreau,
IAS Managing Director



© Østnes Helicopters

2. ØSTNES HELICOPTERS

Supports: range of operators, mainly utility, in the European Nordic region

Partner with Airbus since: late 1995 as sales agent; 2020 as distributor and service centre

"Proximity to customers is important"

"We're a one-stop shop for operators in the Nordics who would otherwise have to rely on various companies for their fleet's needs. We offer spare parts and components, but also base maintenance, new and second-hand helicopters, even leasing. Proximity to customers is important because we know the area and the culture, be it language or the most efficient way to do things. We had an AOG with an EMS helicopter in a remote part of Norway and we just put the tech rep and tools on the bus to get up there. To go from being a sales agent to being responsible for the whole value chain is a big step for us. During COVID, we established our Part 145 business in record time, even around the constraints. Recruitment was virtual. We hired three technicians, and a technical manager from Iceland, who had to build up everything from his home office. That made it harder but we managed, and today we are doing delivery 3 out of the service centre."

Frode Østnes, Leif Salomonsen, and Stine Østnes, founding and executive team at Østnes Helicopters

3. AIRBUS HELICOPTERS IN ITALIA

Supports: fire fighting and aerial work, emergency medical services and private and business aviation operators in Italy
Partner with Airbus since: 1963, as Aersud Elicotteri

"First-class helicopter maintenance services"

"In Italy for over 50 years, Aersud Elicotteri – and later, Airbus Helicopters in Italia – succeeded in highlighting the quality of Airbus Helicopters production, obtaining 60% of the civil market share. Beside the sales activity provided by our customer centre, our service centre – Helicopters Italia – provides first-class helicopter maintenance services. It is one of the two centres in Europe, and the only one in Italy, authorised to carry out level 3 maintenance activities on Safran Helicopter engines, and is qualified to carry out all base maintenance tasks, including structural repairs on the airframe. Being present on site allows us to be closer to the needs of customers and meet their expectations. During the total lockdown of the pandemic, we managed to keep our activity open to meet customers' needs."

Alexandre Ceccacci,
General Manager



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FEATURED ARTICLES

4. CASCADE HELICOPTER SERVICES

Supports: wide range of customers (VIP, EMS, law enforcement, tourism, private) in the US Pacific Northwest region

Partner with Airbus since: 1990

"Airbus, one of the biggest promoters"

"The value of being nearby is the sense of security we're able to give the customer. Technology lets you take a picture of something but that's not comparable with a technician being onsite to look at the equipment. Another value is our open-door policy; customers stop by all the time just to talk about service bulletins or new equipment. We worked hard to support our customers during COVID. A local tour operator had to shut down and couldn't move their aircraft because it wasn't insured to fly. Maintenance was coming due. We went to their site, loaded the aircraft and brought it to our facility, completed the maintenance, and stored it for them until they resumed operations. Part of what makes Airbus a great product is the support behind it. Its service centre network is one of the biggest promoters for the Airbus product."

Justin Heater,
Cascade General Manager



© Cascade Helicopter Services

5. STERLING HELICOPTER

Supports: wide range of customers (VIP, EMS, law enforcement, private) in the US Northeast region

Partner with Airbus since: late 1980s

"We provide helicopter maintenance and support"

"We focus on a customer-centered approach and being a one-stop shop for the helicopter operators, performing maintenance, inspections, repairs, avionics repairs and upgrades, component maintenance, engine maintenance, maintenance tracking, import/export, and AOG support 24/7. Sterling's focus is building strong relationships amongst customers by performing quality maintenance and service as quickly as possible.

Our 30+ technician team is cross trained, allowing more flexibility for the customer's schedule and if AOG situations should arise. Providing or being involved in the aircraft maintenance tracking allows Sterling to always be prepared for what is needed and plan well in advance for the customer's schedule. We provide helicopter maintenance and support for our customers locally and worldwide. Sterling has even chartered helicopter services from our Part 135 customers to make repairs on corporate customers that were AOG within New York City late in the day. This service made sense and brought savings in cost and time because we were nearby and have access to provide such support."

Jason Smith,
Sterling General Manager



© Sterling Helicopter



6. STANDARDAERO

Supports: international customers who perform various missions (police, border patrol, EMS, utility, tourism, VIP) in North America and abroad

Partner with Airbus since: 40+ years



© Diane Bond

"We're unique being affiliated with Airbus"

"Our customers are highly competent and knowledgeable in the service arena and the fact they send their aircraft to us for support speaks volumes. We're unique being affiliated with Airbus because we've developed support and upgrade products for the manufacturer. For example, we developed nine STCs for the Super Puma alone and a crash resistant fuel system for the AS350 and H125. One of the things we're seeing is the resurgence of the Super Puma in North America. Right now they need help with service, support and parts; in this, we provide benefit to Airbus and the network, and especially end customers. We had a customer bidding a Super Puma against other aircraft and because we were able to create STCs quickly to make the Super Puma compliant and make it a differentiating platform, they won the contract. That's one of the key things we're good at; we're quick to market with solutions to make Airbus platforms more desirable."

Elvis Moniz,
StandardAero Vice President Business Development Airframes and Avionics Solutions

7. AIRBUS HELICOPTERS NORTH AMERICA (AIRBUS HELICOPTERS, INC.)

Supports: More than 3,100 helicopters in service for some 800 US and Canadian operators. Airbus supports civil, military, and parapublic operators including the US Army and National Guard, US Coast Guard, NASA, Customs and Border Protection, Royal Canadian Mounted Police, and more.

Presence in the US for more than 52 years and in Canada for more than 37

"This past year has connected us even more though we've had to remain physically apart"

"Approximately 75% of our operations here in North America support customers who fly essential missions saving lives, protecting and serving communities, maintaining critical infrastructure, and more. And these are missions that must be able to continue, even during a global pandemic. I'm extremely impressed with the resilience I've seen over the past year and a half, first and foremost with our teams – who have gone above and beyond in such a challenging context– and also with our customers, partners, suppliers, and service centers. We've all had to balance finding new solutions while keeping everyone safe. We've worked hand-in-hand with our stakeholders to develop new equipment and guidelines to protect crews and disinfect helicopters, to get out in front of supply chain challenges and find creative solutions to ensure parts availability, to figure out how to stay connected when we could no longer meet face-to-face, and to redefine the Airbus customer experience in a new environment.

This past year has shown the resilience of our company, our customers, our market, and our industry, and I think that it will continue to make us stronger and somehow ironically, has connected us even more though we've had to remain physically apart."

Romain Trapp, president of Airbus Helicopters, Inc. and head of the North American region



© Diane Bond

8. HELIBRAS BRAZIL CUSTOMER CENTRE

Supports: Latin American region, for operators including Brazilian Armed Forces and other sectors (public services, fire fighting, law enforcement, EMS, air taxi, VIP and private)

Partner with Airbus for: 43 years



"Qualified by Airbus to carry out D-level maintenance"

"We are the only manufacturer of turbine helicopters in Latin America. At our sites in Itajubá, São Paulo, Rio de Janeiro, Brasília and Atibaia, we perform MRO, retrofit and modernisation, blade overhaul and repair, the sale of spare parts and training. Our Airbus Helicopters design organisation has developed local solutions for customers and more than 300 STCs. We are the only facility authorised and qualified by Airbus to carry out D-level maintenance, repair and overhaul in mandatory components, such as blades, gearboxes and aircraft structures."

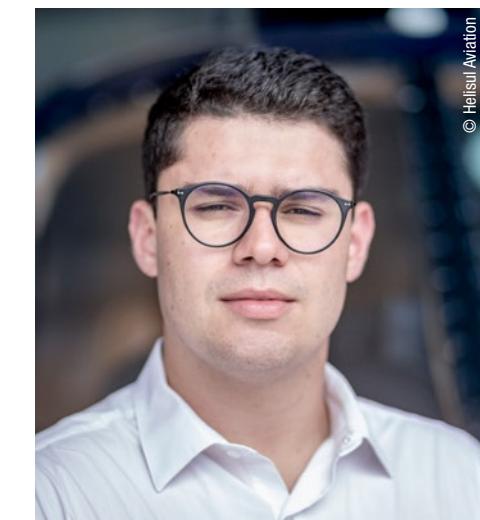
Our focus is to maintain proximity to customers, providing our support and service capacity installed in the country, with solutions that will maintain the continuity and safety of their air missions. Our presence in the region brings agility in proposing services to our customers in the moment of crisis, as in Brumadinho during the pandemic when we could provide all the necessary support to the customer, providing high availability to their fleet."

Jean Luc Alfonsi, Managing Director

**9. HELISUL AVIAÇÃO**

Supports: private and parapublic customers in Brazil from 14 bases in the country, providing charter and maintenance services; in 2020, became an Airbus customer support centre (CSC)

Partner with Airbus since: 1989



"Being ready and near made us save numerous lives"

"Being located close to customers has the value of offering a reduced cost of ferrying the aircraft to a workshop, while offering quick solutions to AOG situations, for an improved availability of the aircraft. Being near also makes it possible for customers to check the 'in-loco' status of ongoing maintenance and timeframes for delivery of their aircraft. An extra benefit is the possibility of doing field support for minor maintenance requirements. During the COVID period, being ready and near made us save numerous lives in the four Brazilian states. We have been rendering medevac services with Airbus helicopters of our fleet and we support third party helicopters that are still operating for the pandemic, doing vaccine transport. Our experience and approval for doing EMS services enabled us to equip our team and be ready to add this service under current contracts and support our customers in this very difficult time."

Humberto Biesuz,
Helisul Executive Director



"We provide all types of services"

"We have a very good relationship with customers. We even have some who stop by to see what we've got on the go. It has to do with the experience. The ambience in the shop with a customer is important and we try to make sure they like the experience of getting their helicopter maintained or upgraded."

We provide all types of services. Maintenance, paint jobs, avionics services. We even help to purchase and sell helicopters. We try to make it as easy as possible for customers so that they ultimately enjoy their helicopters. We've got one project coming to install TCAS, floats, autopilot. For another model, we're installing a kit that will appear next year so we're working with a representative from Transport Canada to certify the kit. Our customers have different reasons for using their helicopter; our goal is to make sure they fly safe and enjoy their ride."

Patrice Chaput,
Mirabel owner

10. MIRABEL HÉLI SUPPORT

Supports: privately owned helicopters and commercial aircraft in northeast America, including Quebec, Ontario, Canada and northern US

Partner with Airbus since: 2012 (business partner since 2009, Airbus Authorized Maintenance Center since 2015)



11. AIRBUS HELICOPTERS MALAYSIA

Supports: Asia-Pacific region, for operators including Royal Malaysian Air Force, Navy and Police; Maritime Enforcement Agency; and civil and private entities.

Partner with Airbus for: 40 years

"We delivered AOG spares, tech support, MRO services"

"We definitely have an advantage having our facilities in Subang as we are able to support our customers in Malaysia and the APAC region. Travel to most of our customers ranges from 3 to 6 hours, making our customer centre strategic for the region. We provide technical support to operators in China, Indonesia, Taiwan, Korea, Japan and other APAC countries. There is no language barrier between our teams and our customers locally or within the region."

As our operations are considered essential services, we were allowed to operate during the pandemic. We delivered AOG spares, tech support, MRO services. We even managed to do our first virtual helicopter acceptance for the region. With the travel restrictions, we have had the advantage of being on the same time zone to be able to provide virtual support. By remaining operational during the pandemic, we have given our customers the reassurance that they can depend on us."

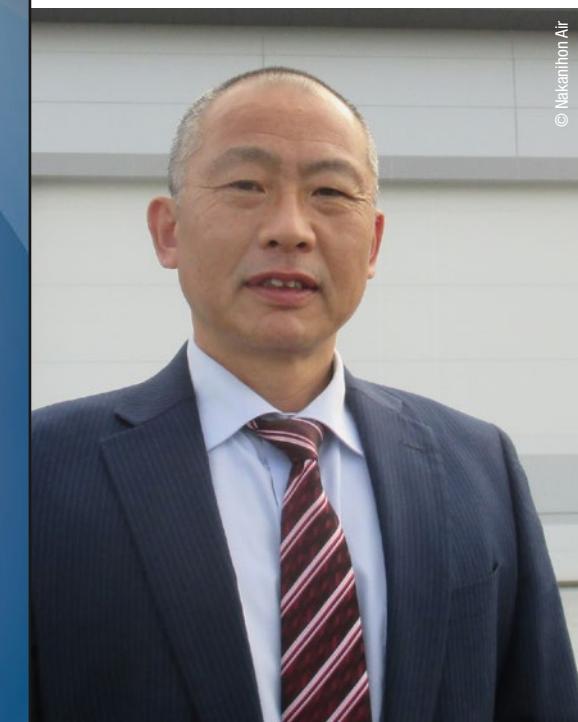
Gerard Pau, Managing Director



12. NAKANIHON AIR

Supports: ENG operators (broadcasting companies) and police, and itself operates 20 H135s for HEMS and ENG missions across the country

Partner with Airbus for: close to 40 years (as an Airbus Helicopters fleet operator); Airbus Authorised Maintenance Centre since 2007



"Great cooperation with the Airbus Helicopters Japan team"

"We started our operations in the air transportation business, close to 70 years ago. Since then we have expanded our expertise to provide diverse and versatile aviation services and solutions nationwide, such as HEMS and medical transportation, ENG, anti-disaster and fire fighting helicopter operations, goods and passenger transportation, aerial photography, air charter and a wide range of business related to aerial research and surveys. Today, we are one of the largest aircraft operators in Japan, flying with 47 Airbus helicopters and providing support across the country."

As an Airbus-approved maintenance centre for the H135 helicopter, close to 350 technicians in the MRO and operation departments ensure customers' operational needs, from their daily operation to heavy maintenance, including customisations for specific mission requirements and assembly of new aircraft. We received our 20th H135 in 2019 and opened a new MRO centre in 2020. With many years of rich experience in MRO and know-how in the aviation business, as well as being the largest H135 operator in Japan, we have been building strong relationships based on trust with our customers and forged great cooperation with the Airbus Helicopters Japan team."

Takeshi Iori,
General Manager, Hangar Service Centre





Government Flying Services' H175 fights fire in Fanling on 7 April 2021.

SWEDEN

LIME DROPPING IN SCANDINAVIA

In this scenic landscape, a niche industry is making inroads in environmental conservation with material distribution. Scandair is one of the companies pioneering this activity with helicopters.

Article: Heather Couthaud. **Photos:** Scandair



"We're still flying the H125 after 10 years because it's the most cost efficient helicopter out there for these types of operations."

Marius Johansen,
Executive Director of Scandair.

Marius Johansen, Executive Director of Scandair, explains the inspiration behind his company's modified truck, used for spraying lime on lakes. "We asked what was the most essential thing we had and that's the helicopter, so it was important it didn't have to wait to get material. We manufacture things that are so good it doesn't matter how fast operations go, there should always be a new bucket of material available."

They have to be efficient to drop some 30 slings per hour of lime on Scandinavia's lakes as part of the region's environmental upkeep. Material distribution, as it's called, helps offset factors like a too-low pH value in lakes that have been polluted by acid rain.

In 2010, with a sole H125, Scandair got its start contracting with a lime producer working for the Swedish government to spray lime on lakes. They gradually took on contracts for private- and government-owned forest holders, dropping fertiliser and wood ash on forests. This year, they will carry out approximately 60,000 sling loads with their three (soon to be four) H125 helicopters.



1: Scandair can drop some 30 slings per hour of lime on Scandinavia's lakes as part of the region's environmental upkeep.

2: Scandair operates in Sweden, Finland and Norway.

3: In 2021 Scandair will carry out approximately 60,000 sling loads with their H125s.

WITH A SLING AND A BUCKET...

The lime is driven out to the site in big bags before the helicopter arrives. When Scandair's team of a pilot and two ground crew gets there, their crane driver fills a silo on their customised truck with around six tonnes of lime. From that, a screw fills two drop buckets equipped with a hook for the H125's sling. "When you have sprayed, you can just fly back, make the exchange with a full bucket, and go," says Johansen.

They carry out lime drops year round, flying above the surface and spraying a radius of 10 metres at a time. "Our customers measure the acidity of lakes around five times a year to keep track," says Johansen. "With some, they want us to put the lime on top of the ice so when it melts it mixes with the polluted snow on the lake. Most customers want it done in the summer so it can mix directly." They also drop clean wood ash on young forests as part of the region's policy of putting back in the soil the nutrients taken away by logging. This work must be done in the growing season, so Scandair's forest work usually starts up in May when the snow has melted and continues until August.

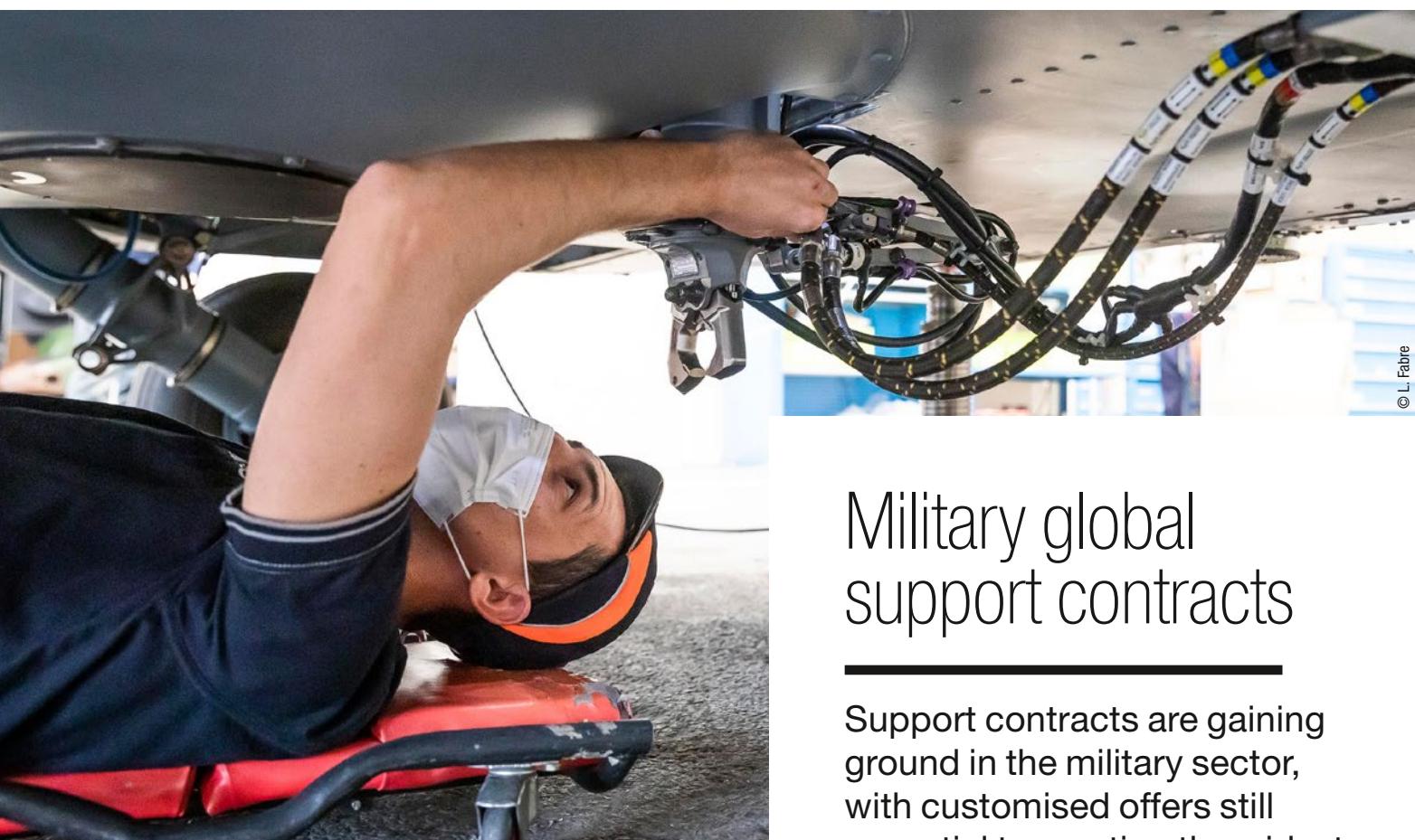
A HARD WORKING FLEET

Scandair manufactures its own equipment, including a GPS-controlled bucket system. This means the pilot at the controls of the H125 simply focuses on flying a slow 50 knots while the GPS automatically signals the bucket when to make a drop and how much, depending on speed.

At an average of 700 flight hours per helicopter per year, the fleet is one of the hardest working in the area, considering the company also helps out with fire fighting when there's a need. "We have ordered 16 new helicopters in 10 years," says Johansen. "We have a high cycle consumption, so it gets expensive if we keep them for too long."

The volume of work for Scandair's seven pilots hasn't diminished with the pandemic. And as long as the environment needs a boost, this niche industry may become mainstream.





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With the PBH offer, Airbus Helicopters guarantees optimal inventory management as well as the repair and maintenance of parts and their availability when needed.

The Brazilian armed forces rely on a PBH contract signed in 2018 for their 37 H225Ms used by the country's three forces.



Military global support contracts

Support contracts are gaining ground in the military sector, with customised offers still essential to meeting the widest range of demands.

Article: Alexandre Marchand

Support contracts are popular and well known in the civil sector and are gaining ground in the military sector. Let's not forget that the first RBH (Repair by the Hour) and PBH (Parts by the Hour) contracts were signed over 35 years ago with the French Armed Forces. The success of these contracts has never waned and today more than half of all Airbus helicopters enrolled with global support contracts come from military fleets.

Forecasts even predict an increase in the number of contracts in the years to come, which is logical: everything that global support contracts are renowned for in the civil sector, starting with the high fleet availability and increased asset values they provide, is also true for the military sector.

INCREASED AVAILABILITY

All Airbus Helicopters offers have something in common: they are adapted to users' needs, whether they are civil or military, small or large, near or far. They cover the supply of spare parts, inventory management, maintenance, technical support,



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The Japan Maritime Self-Defense Force (JMSDF) opted for an HCareSmart contract for their 15 H135s in October 2016.

ALL OVER THE WORLD

Offers have been diversified in response to customer needs, resulting in the global HCare offer that today combines the following supports: the aforementioned supply of spare parts, but also the comprehensive maintenance of aircraft, training, technical solutions and flight operation tracking. All of this is managed by a range of connected services and backed by Airbus Helicopters' well-organised worldwide network with four logistics centres and six regional warehouses.

The Japan Maritime Self-Defense Force (JMSDF) has been using 15 H135s for the ab initio training of naval helicopter pilots since 2010. In October 2016, it opted for an HCare Smart contract. Since then "we have been able to reduce costs and simplify our management," Captain Goto explains, who also adds: "Spare parts are delivered regularly; aircraft availability has improved and our situation has really changed for the better since the implementation of HCare."

The helicopter division of the UK Military Flying Training System is a great British example: the fleet of 29 H135 Juno and seven H145 Jupiter helicopters used by Ascent Flight Training to train military pilots is covered by a combined RBH and PBH contract with additional services such as obsolescence management. Ascent General Manager Harry Palmer says: "During the initial stages of the UKMFTS contract, the Airbus Helicopters UK support has been excellent with good aircraft availability. As the project builds to full capability we are confident that this platform reliability will be a key component of our ongoing success."

All these examples are now becoming the norm, as around 1,250 military aircraft are currently covered by global support contracts in various capacities. Furthermore, 95% of by-the-hour users choose to renew their contract when it expires, a clear sign that the formula meets a real need.



H160: A 2.0 ENTRY INTO SERVICE

The H160 has always had two main customer service goals: to fully integrate digital solutions from design to maintenance, including certification and final assembly, and to ensure that all these solutions communicate with each other to better facilitate maintenance.

This digitalisation for operators is reflected today in a fully mature technical environment from day one of new aircraft operations. Here are the key tools behind this success, all designed and implemented in close cooperation with the operators themselves.

Article: Alexandre Marchand. Images: Airbus Helicopters

3D technical documentation

The new generation of text-free technical documentation is without a doubt the most impressive illustration of digitalisation. To avoid interpretation or translation errors, the documentation for the most part uses extremely precise 3D illustrations, with a minimum of text. With the ORION tool, it is also completely available offline, on digital tablets, making it accessible at any time and everywhere. For the most complicated tasks, each sequence is represented by 3D illustrations that display each step of the process, while a work card can outline the different stages of the work required. 3D illustrations/animations are used for the most complex tasks. Thanks to digital continuity, the illustrations/animations are



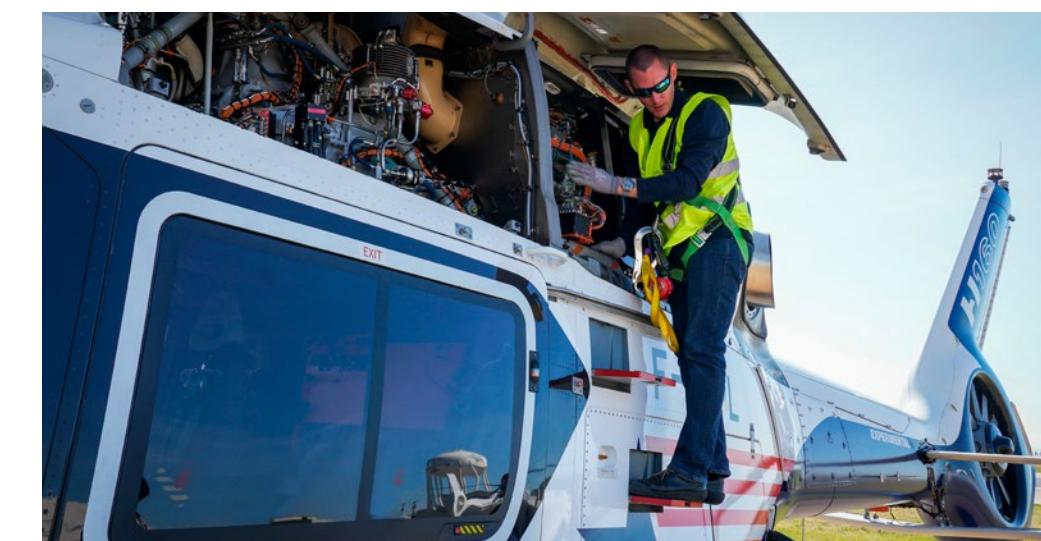
automatically updated when maintenance manuals are revised. The accuracy of 3D animations removes ambiguity and prevents any misinterpretation. It's a powerful safety factor for the customer.



A digital flight manual

The digital flight manual, or c-RFM (computerised rotorcraft flight manual), provides the crew with any information they need on aircraft performance in terms of weather conditions, options, required flight profile, etc. Airbus Helicopters is the first helicopter manufacturer to have designed and certified a flight manual equipped with a calculation app. The c-RFM digitises and automates calculation

tasks given to the crew, which improves safety and performance levels as the c-RFM includes the exact configuration of the aircraft recorded by the app in the calculation. Installed on a touch-screen tablet, the tool is intuitive and user friendly. It also enables the integration of all PDF technical and operational documentation (checklists, operation manuals, etc.), avoiding the need to carry hundreds of pages in the cockpit.



Modern training

The programme and training tools for H160 technicians and pilots are an extension of the aircraft: modern and intuitive, the system emulators and Helionix trainer make it easier to understand all on-board systems by simulating their operation and malfunctions.

Hands-on training, essential despite the improvement of digital tools, is given for a series of models and physical parts, making it possible for technicians to actually work through different tasks. Pilots have access to a Helisim Level D full flight simulator and a cockpit trainer which, due to its immersive environment, ensures an efficient transition from theory to practice. All pilot and technician training sessions were approved by EASA in 2020. Furthermore, FAA pilot training is in the process of being approved. Airbus Helicopters' technical representatives, in addition to customers' first technicians, were therefore trained well in advance of the aircraft's entry into service.

More flexible maintenance

H160 operators and customers with very different needs and requirements (search and rescue, law enforcement, oil industry, etc.) have been actively involved in designing the maintenance plan, using the MSG-3 inspection methodology required by EASA and FAA authorities. With this combination of flexibility and scope, customers can be sure that the plan covers all their maintenance needs according to operational requirements, with

no exceptions. The in-depth study of maintenance intervals and accessibility makes it possible to safely eliminate minor tasks, leading to a significant reduction in workload. The maintenance plan was validated for short intervals during the 'Operator Zero' campaigns. This validation will continue after entry into service for longer intervals, resulting in an H160 with competitive operating costs and simple maintenance.

THE RACER PROGRAMME REACHES CRUISE SPEED

With the arrival in Donauwörth (Germany) of the centre fuselage, the assembly of the RACER high-speed demonstrator has begun. Here is a sneak peek at some of the RACER's major components, soon to be assembled.

Article: Gloria Illas



1/ THE CENTRAL FUSELAGE

This is the first time such an advanced hybrid helicopter structure, incorporating both metallic and composite primary structural elements, has been produced in Romania's RoRCraft consortium, where it will also be contributing to the demonstrator flight clearance by designing and conducting ground tests and stress analysis of the required fuselage parts.

Romania's RoRCraft consortium, formed by INCAS and the aerospace company ROMAERO.

2/ THE SIDE SHELLS

Made of carbon fibre reinforced plastic (CFRP), the 3.4 x 1.5 metre cover for the RACER's side panels connects the tail boom to the aircraft's cockpit. Such large format CFRP shells are traditionally made manually, but the RACER's shell components have been manufactured in a highly automated process. The intermediate side shells have already been assembled on the RACER airframe by Romania's RoRCraft consortium.

Fraunhofer Institute for Foundry, Composite and Processing Technology IGCV in Germany.

3/ THE CANOPY

The RACER's innovative carbon fibre canopy is a good example of the synergies between automotive design expertise and manufacturing technologies, and aerospace industries, to create a lightweight canopy, optimised for low aerodynamic drag and a good field of view.

German FastCan consortium, formed by KLK Motorsport GMBH and Modell und Formenbau Blasius Gerg GmbH.

4/ WINDOWS AND WINDSHIELDS

Windows are capable of withstanding bird strikes, even at high speeds, and were developed by the

WIMPER consortium, which comprises the KRD Sicherheitstechnik GmbH, the German Aerospace Center DLR, the Institute of Structures and Design, and Stuttgart University's Institute of Aircraft Design.

5/ THE FUEL SYSTEM

Starting from a classical fuel system design, the main challenge was to adapt it to the demonstrator's new capabilities in terms of speed, acceleration, and climb and descent rates. The fuel system will continue being put to the test during the coming ground and flight tests in order to ensure its performance.

The RACER's fuel system has been designed with a lightweight tank bladder material, and a new optical sensor is under development to be tested in the fuel bench in different conditions.

ActionRcraft consortium, composed of SAFRAN Aerosystems and the StrongCraft consortium, formed by SAFRAN Aerosystems, Seconde Mona and the Netherlands Aerospace Center.

6/ THE WINGS

The innovative RACER wings are one of the most striking elements of the demonstrator. Optimised for aerodynamic efficiency, the patented "double wing" or "box wing" provides lift in cruise mode while enhancing safety around the demonstrator during ground operations.

With the aim to contribute to the lower emissions objective of the Clean Sky 2 programme, each new wing on the RACER has been designed with high-performance ecological materials that reduce the weight of the aircraft. The new wings actively enhance the demonstrator's performance by providing additional vertical lift and the ability to fly farther and faster than traditional helicopters.

The British ASTRAL consortium, composed of AERNOVA Hamble Aerostructures and the Institute for Advanced Manufacturing at the University of Nottingham.

7/ THE LANDING GEAR

Integrated inside the wing and fuselage with a movable-door system, the landing gear was conceived to minimise drag when retracted. When extended, the system will provide a large track for a safe landing. The landing gear system is currently undergoing all the tests required for the flight clearance at the test centre near Naples.

ANGELA consortium, formed by the Centro Italiano Ricerche Aerospaziali, Magnaghi Aeronautica, Latvian firm sister enterprises Centre Composite and AVIA Test, Slovak M&S Engineering and Italy-based Techno System Development.

8/ THE REAR FUSELAGE

Based on an Airbus Helicopters patent, the RACER rear fuselage, dimensions, weight target and asymmetric cross-section profile were designed to optimise the RACER's hover performance without penalising the forward flight and cruise phases.

Likewise, its atypical H-shaped empennage and double tilted vertical/horizontal stabiliser, devised to enhance stability and energy consumption, have also required the implementation of innovative technologies.

The RACER will be the first Airbus aircraft to fly with a primary structure produced using additive manufacturing.

Airbus Helicopters teams in Spain, supported by the Outcome consortium led by Aernnova.



Did you know?

Fuel savings will be generated thanks to the innovative Safran eco-mode hybrid-electrical system, which allows one of the two Aneto-1X engines to be shut down while in cruise flight. The particular architecture of the RACER formula will also contribute to lowering its operational acoustic footprint.

ICELAND

THE SMILE FACTORY

Do you long to see the landscapes from series such as Game of Thrones or films from the Star Wars saga? Or perhaps you want to watch a volcano in mid-eruption without placing your life at risk... Norðurflug has been bringing dreams like these to life for 15 years.

Article: Belén Morant. Photos: Norðurflug/ MaxMilliganPhoto

"Both the AS350 B2 and the H130 are far better than the competition in terms of visibility. The B2 is excellent, but the H130 really makes you feel like you're sitting in a cinema."

Birgir Omar Haraldsson,
CEO of Norðurflug.

With its fleet of two AS350 B2 helicopters and one H130, Norðurflug knows Iceland like the back of its hand as a consequence of its main business activity: showing both foreigners and fellow Icelanders the best the country has to offer. While tourists take to the skies in Norðurflug's helicopters in search of thrills and unforgettable landscapes, major producers from as far away as Hollywood call on their services to find the most exotic locations for their films, series and commercials.

"Our business is grounded on three pillars: firstly and most importantly tourism flights, secondly work on a number of filming projects in Iceland, and thirdly aerial work with slings," explains Birgir Omar Haraldsson, CEO of Norðurflug. "We offer many different types of helicopter tours, including a tour of different filming locations, which is especially

popular with Americans. We also have another one that goes to the Glacier Lagoon and visits volcano craters, and lately we've been doing a lot of flights over the Geldingadalur volcano, which began erupting on 20 March and is only a 12-minute flight from our base."

A WELL-PREPARED ADVENTURE

This is not the first time – nor will it be the last – that Norðurflug has assumed the challenge of flying over a volcano to delight its customers. Volcanoes are an intrinsic feature of Iceland: following the famous eruption of Eyjafjallajökull in 2010, which brought aerial traffic in northern Europe to a week-long standstill, there have been various eruptions in Iceland that the company has been able to fly over without placing the helicopter or its passengers at any risk whatsoever.

"Geldingadalur is perfect for tourism because it's calm, small and very easy to fly around. Our expert in safety management, Gunnar Flóvenz, has carried out an exhaustive risk assessment that takes absolutely everything into account: the weather, the landing sites, fissures that may potentially open up and so on. We adapt our operations based on Gunnar's advice," explains Haraldsson.

DEFINING AND CONTROLLING RISKS

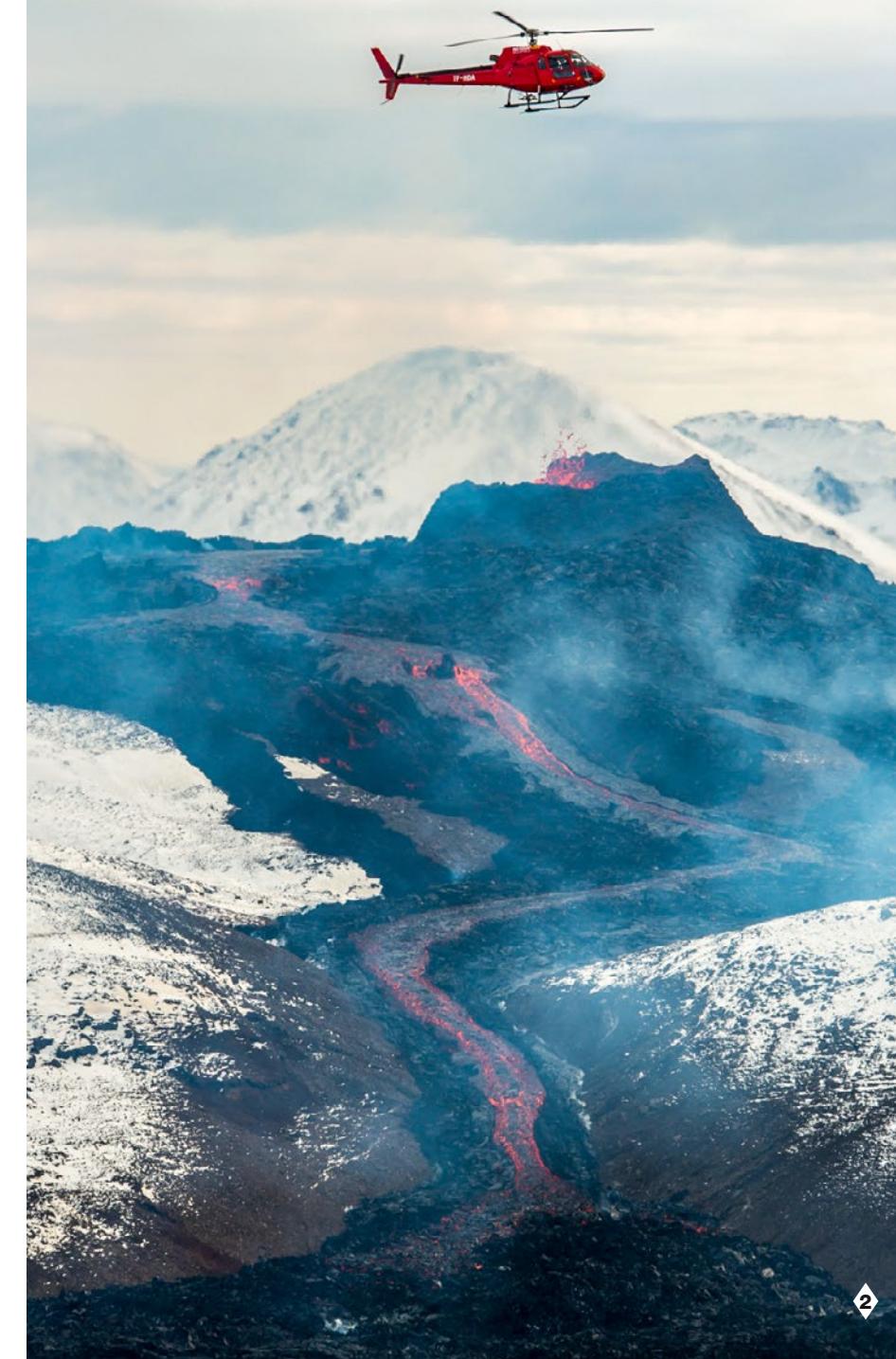
Gas emissions constitute one of the main risks, and the team at Norðurflug analyses possible fissures and wind changes to avoid their impact. However, the greatest risk posed by this operation is a very different one that may come as something of a surprise: "We've been pointing out the potential risk that exists due to the large number



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PRODUCTIONS NORÐURFLUG HAS WORKED ON

- James Bond – Die Another Day
- Batman Begins
- Thor
- Prometheus
- Transformers
- Star Wars
- Game of Thrones
- ... and many more



2

1: Norðurflug uses their H130 especially for charter or tours of several days.

2: Geldingadalur volcano is perfect for tourism because it's calm, small and very easy to fly around.

3: Some 90% of Norðurflug's customers are foreigners, although during the COVID-19 crisis, Icelanders became their main customers.



Did you know?

One of Norðurflug's customers is the Environmental Agency of Iceland. Norðurflug supports them in their efforts to reduce the footprint of tourism and its effect on the environment through activities such as the airlifting of materials. Norðurflug Helicopter Tours has also been a member of the Responsible Tourism foundation since 2017. The company has set a number of goals to enhance its responsibility in terms of the environment, tourism and the local community.

of aircraft flying around the volcano, including drones. The authorities have restricted the airspace to a maximum of eight aircraft at a time. Unfortunately, this is a further challenge we need to include in our risk assessment."

Some 90% of Norðurflug's customers are foreigners, although during the COVID-19 crisis, the locals became their main source of income. Norðurflug adapted to the new health situation with the systematic use of face masks and gloves, testing of passengers and continuous disinfection of the helicopters and equipment.

"Now we're flying at full capacity again and we're seeing strong demand for flights thanks to this latest eruption. We love to see the reactions of our passengers when they fly over such breathtaking landscapes. In fact, we have a saying at the company: we're like a smile factory, because everybody gets out of the helicopter after landing with a big smile across their faces!" Haraldsson concludes.

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



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