

# Rotor

BY AIRBUS HELICOPTERS

**SERVICES**

The vital role of aircraft MRO

**LIFE OF THE RANGE**

The H130 : roomy, silent and smooth

**LOGBOOK**

A big reach for air-to-air refueling



**A solid landing  
in India**



© Anthony Pecchi

# 10 FEATURED ARTICLES

## A solid landing in India



Communication Director: Yves Barillé (Publication Director),  
Editorial Director: Pascale Fleury, Editor in Chief: Belén Morant  
(contact.rotor-magazine.ah@airbus.com), Director of photography:  
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© Lorette Fabre

One accident is one too many, and the only acceptable objective is ZERO accidents. At the time of writing this editorial, that is the message I want to get across to you. As far as I am concerned, flight safety is the most important of all priorities.

Every day, the men and women who work for Airbus Helicopters do all they can to help our customers perform their missions of serving people, protecting and saving lives, and carrying passengers in complete safety.

**“The only  
acceptable  
objective  
is ZERO  
accidents.”**

**Guillaume Faury**

We never lose sight of the human value of what we do or the demands made of us on a continual basis.

That commitment lies deep within us, and we are all profoundly affected whenever the world of helicopters has to mourn a tragic event. Such adversity also stiffens our resolve to work tirelessly and with total dedication and the utmost responsibility in doing all that we can to enhance flight safety, in close collaboration with our partners and customers.



MEXICO May 2016

**First H175 delivered in America,  
to operator Transportes Aéreos Pegaso**



© Anthony Pecchi

## FRANCE **RETROFIT OF SÉCURITÉ CIVILE'S 35 EC145**

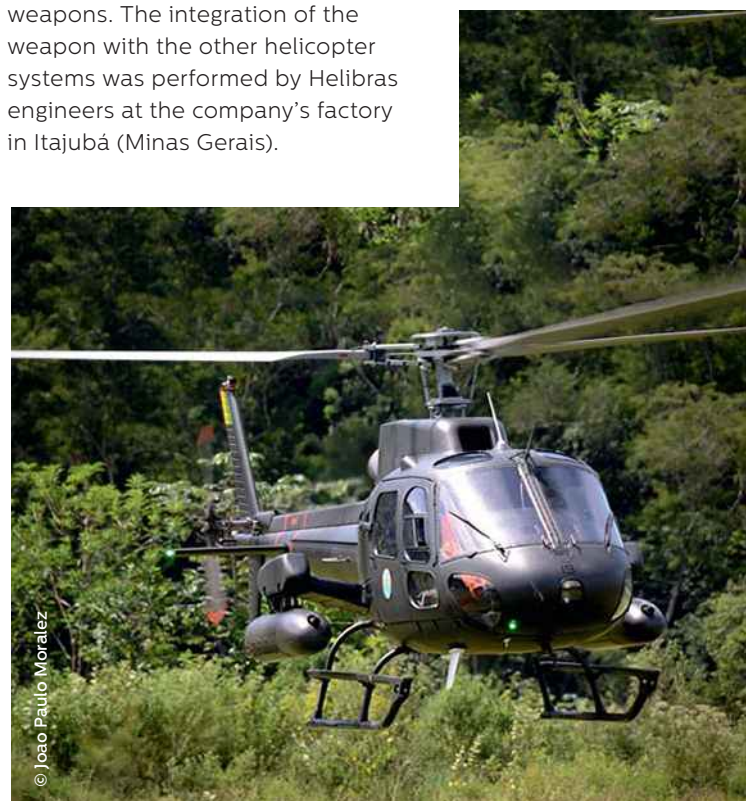
Airbus Helicopters has been awarded a contract by the French Defence Procurement Agency (DGA) to retrofit the avionics suite of the 35 EC145 helicopters operated by the Sécurité Civile, an agency of the French Ministry of Interior that performs critical search and rescue and medical evacuation services throughout the French territory.

As part of this retrofit, all aircraft will be equipped with an improved avionics suite allowing them to retain their ability to perform missions in all weather conditions with the highest levels of safety, while at the same time complying with the latest Performance Based Navigation regulations. The aircraft will be retrofitted over a seven-year period by Airbus Helicopters personnel from the Military Support Centre France deployed at the Sécurité Civile base in Nîmes in order to minimise the impact on the operational activity.

## BRAZIL **MODERNIZED FENNEC PERFORMS CAMPAIGN FOR WEAPON MOUNT CERTIFICATION**

A Brazilian Air Force (AvEx) Fennec helicopter has successfully conducted the campaign for certification of the weapon mount that is being installed in aircraft undergoing modernization by Helibras. The campaign lasted about one week and achieved highly satisfactory results.

The mount is installed at the center of gravity of the aircraft, which balances the weight of the equipment in the helicopter and is compatible with NATO standard weapons. The integration of the weapon with the other helicopter systems was performed by Helibras engineers at the company's factory in Itajubá (Minas Gerais).



© Joao Paulo Moraes



WORLDWIDE

## HFORCE: A PLATFORM-INTERCHANGEABLE, ONBOARD WEAPON SYSTEM

In early 2016, Airbus Helicopters performed the first firing campaign of its new HForce weapon system in Belgium. The off-the-shelf armament system can be fitted onto any military versions of Airbus Helicopters' commercial range (H125M, H225M, H145M). Conceived as a plug 'n play system, HForce's core hardware is interchangeable from one helicopter to another. While weapons can be exchanged between helicopters, their pod fixtures and software remain specific to each helicopter.

This unique system covers the entire operational spectrum (air-to-air, air-to-ground, air-to-surface, ballistic and guided), and supports a wide range of missions. Its modular architecture offers militaries which are already equipped with attack helicopters a means to complement their fleet. For customers in the early stages of military outfitting, the system's incremental options address a range of practical needs. HForce will be qualified on one of three platforms by the end of 2017.

© Éric Raz



© Pacific Island Air

## F I J I AIRBUS HELICOPTERS FOUNDATION PROVIDES SUPPORT

Airbus Helicopters Foundation provided support to humanitarian relief efforts following tropical cyclone Winston that hit the Fiji Islands, affecting 350 000 people. The Foundation provided 40 hours of helicopter support to the Fiji archipelago rapidly, partnering with Fijian operator Pacific Island Air. Among other missions, the AS355 chartered by the Foundation transported 8 tonnes of humanitarian materials to the most severely damaged areas that had become inaccessible. The flights have also led to the rapid identification of the most badly damaged schools, revealing urgent need for repairs for around 100 of them before they can re-open.



© Anthony Pecchi

## F I N L A N D FINNISH BORDER GUARD RECEIVES FIRST TWO H215

Airbus Helicopters has delivered the first two H215s to join the Finnish Border Guard fleet.

The two H215 arrived in Finland in February and May, respectively, following a training session at the Airbus Helicopters headquarters in Marignane (France) where they completed more than 140 flight hours of trainings.

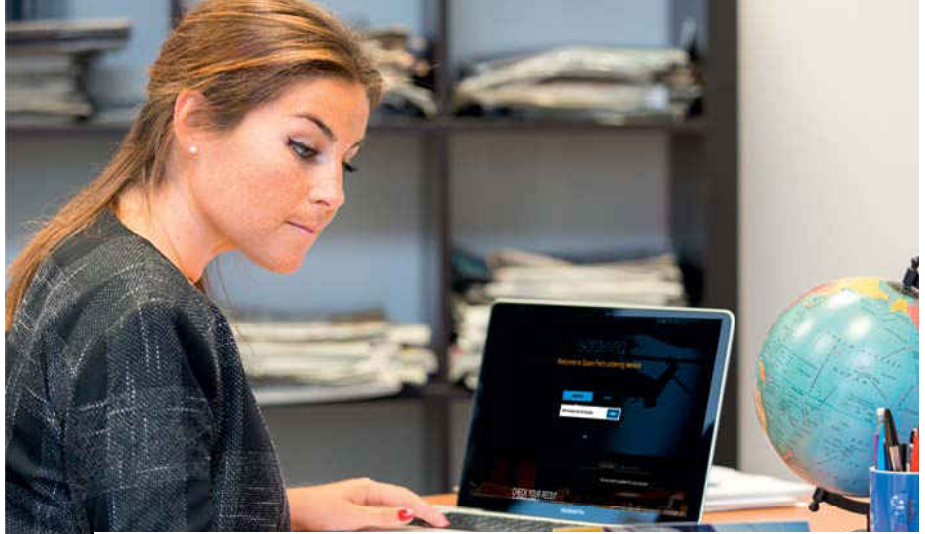
The Finnish Border Guard

already operates three AS332 aircraft and has in addition signed a Maintenance, Repair and Overhaul (MRO) HCare contract to retrofit these AS332s to the new H215 multirole configuration. The H215s will be used to perform Border Security and Maritime Search and Rescue (SAR) duties from the Turku and Helsinki bases.

WORLDWIDE

## AIRBUS HELICOPTERS REACHES 90 MILLION FLIGHT HOURS

In March, the entire fleet of Airbus Helicopters rotorcraft passed a significant milestone: 90 million combined flight hours (generated from civil and governmental helicopters). The number, which dates to 1955 with the first Alouette 2, owes a debt to the reliability of the brand's rotorcraft. Every year, the Airbus Helicopters fleet registers some 3 million hours in flight, proof of the company's role as a major actor in the helicopter industry. With 8.6 million hours, the French army holds the title for the most number of hours flown. By family, the Ecureuil accounts for the most number of hours (29 million hours). Be sure to check back in three years, when the fleet will surely be celebrating 100 million hours.



© Lorette Fabre

WORLDWIDE

## 90 % OF GLOBAL CUSTOMERS REGISTERED WITH KEYCOPTER

Since 2012, Airbus Helicopters' Keycopter customer portal has grown to cover 90 % of the company's customers worldwide. Today, 2,860 companies and more than 17,500 users have access to the portal, which now includes the new ergonomics of the eOrdering service. This user-friendly interface, launched in April, permits users to better view essential information about their spare parts ordering activity, as well

as have easier exchanges with Airbus Helicopters, via the redesigned home page. The revamped service has seen instant success with customers, with more than 1,000 orders and quotations having been created in the three days following its launch. Continued improvement of services such as eOrdering, among many others, has played a role in the increase in numbers of Keycopter users since its initial launch.

© Anthony Pecchi



LATIN AMERICA

## THE HPILOT CLUB IN LATIN AMERICA

Airbus Helicopters launched the HPilot Club in Latin America at FIDAE in April. The purpose of the HPilot Club – which was officially launched in June 2015 at the Paris Air Show – is to bring together Airbus Helicopters-certified mechanics and pilots as well as helicopter owners in a single community. On March 31, Ari Vatanen – Former world champion rally driver – officially joined Hervé Jammayrac as co-president of the HPilot Club. Currently, the HPilot Club has more than 1,000 members in 95 countries. In the near future, membership is expected to increase rapidly in Latin America, a region with about 1,500 helicopters of the brand in operation and 3,000 potential new members expected.



More information on [www.Hpilotclub.com](http://www.Hpilotclub.com)



© VR

LIFE OF THE RANGE

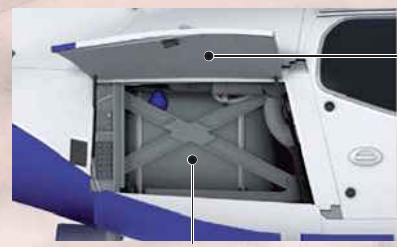
# H130

From major tourist destinations to the congested airspace over cities, the high performance single-engine H130 / EC130 is in widespread use for sightseeing services, shuttle and charter operations, VIP, medical services and law enforcement missions, among others.

## PASSENGER TRANSPORT: TOURISM - TAXI - SHUTTLE

Travelers can relax during their journey thanks to the H130's very low internal sound level, low vibration and efficient air conditioning system.

Improved safety and reduced external sound level thanks to Fenestron® rotor



**Enhanced flight safety:** Crashworthy fuel tanks



**Enhanced luggage capacity** with installation of cargo pods

Operation with **1 pilot + 7 pax** - significant improvement of profitability - reduction of CO<sub>2</sub> emission per Pax

**Comfort:** New Active Vibration Control System (AVCS)

### FIGURES AND TECHNICAL DATA

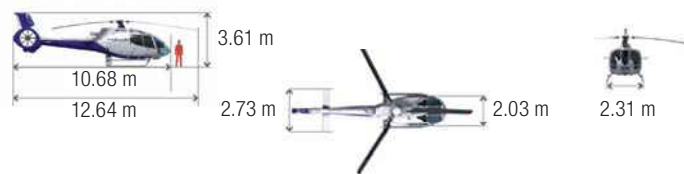


More than **646 H130s / EC130s** delivered around the world,...

operated by **290 customers** in **50 countries**,...

... have accumulated **1,615,700 flight hours**

### DIMENSIONS



Capacity	Engine	Fast cruise speed*	Range*	Endurance*
1 Pilot + 6/7 passengers	1 Turbomeca Arriel 2D, turboshaft engine	237 km/h – 128 kts	617 km – 333 NM	4 h

\*At Maximum Take Off Weight



## AERIAL WORK

The H130 / EC130 offers a range of possibilities for operators thanks to its wide, unobstructed, flat-floor cabin, able to accommodate an array of equipment to provide outstanding mission flexibility.



## EMERGENCY MEDICAL SERVICES

The H130 / EC130 ensures rapid and efficient interventions when saving lives. Its maneuverability and visibility enable the pilot to land more safely in confined areas.



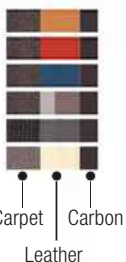
## VIP

The elegant STYLENCE interior design with stylish seats and high quality materials creates an exclusive ambiance.




- New air-conditioning system
- Vision 1000, helicopter flight data monitoring solution to enhance safety
- Free space available on the instrument panel for customization
- Biggest cabin and best sight in its category

New choice of 6 harmonies for the interior





An aerial photograph showing terraced agricultural fields in a hilly region of India. The fields are green and brown, with some buildings and a road visible in the middle ground.

The H130 was recently introduced on the Indian market for heli-ski drops and heli-pilgrimage missions with great success.

# A SOLID LANDING IN INDIA

Big change is abroad in India—and has been, since the country began a concerted effort to encourage the growth of local industry in its technology sector. This is especially true of its ambitions for the aeronautical industry where, as one of the fastest-growing civil aviation markets in the world, India is increasingly using airborne technology to respond to regional problems and international crises. This is nowhere more evident than in the growing use of helicopters, such as during a project to map aquifers as sources of clean drinking water, and when the government sent planes and helicopters to Nepal in the aftermath of a devastating 2015 earthquake. For all its strides, India's challenge is to create the infrastructure capable of supporting such growth. This means creating a skills base and industrial network able to supply the burgeoning sector's needs. The emergence of privately-owned firms and partnerships, such as that outlined on page 14, may well pave the way for such knowledge transfers, and aviation's solid landing on Indian soil.

Article: Heather Couthaud - Photos: Anthony Pecchi

# HIGH STAKES IN INDIA

Xavier Hay leads the activities of Airbus Helicopters within Airbus Group India, where he is in charge of growing Airbus Helicopters' global presence in this fast-growing aviation environment. Here, he shares with *Rotor* his vision about the Indian civil and military markets and the country's unique challenges.

**What can you tell us about the “big picture” in India?**

**Xavier Hay:** Our “big picture” will consist in becoming the preferred local manufacturer of military helicopters for the Indian Authorities and operators, while creating an industrial hub to contribute to our global portfolio. In the past, our technology enjoyed a strong reputation with production of 600 Cheetah and Chetak helicopters (derivative of Alouette III and Lama) by state-owned HAL. Today, the paradigm of aerospace and defense in India is changing to be more private, based on the recent “Make in India” initiative. India is a highly competitive country and Airbus Helicopters has a great opportunity to renew its industrial footprint locally, benefitting from the robust supply chain of Airbus. Replacement of more than 500 military helicopters in India, generating significant workload in Europe, is another “big picture” topic amongst the world's top defense markets. We are creating a Joint Venture with Mahindra Defence to address these requirements (cf. article page 14). Another upcoming issue will involve civil helicopters: whereas India already has the fastest growth in civil aviation, in the short-term the new policy for MRO, air connectivity, airport-heliport infrastructure and helicopters is creating excitement. Over the past five years, 45 percent of new civil helicopters locally registered are from our brand. Airbus Helicopters can leverage the strong reputation in India of Airbus Group, having pioneered the One Roof integration policy for greater synergy in this challenging market.

**What is Airbus Helicopters India's current position in the civil & military markets?**

**X.H.:** Airbus holds one third of the local

helicopter fleet share (i.e. 85 rotorcraft), mainly driven by light single, light twin and medium twin helicopters. Over 40 helicopters of the Dauphin family rank the best-in-class for medium, whereas our 20 H125 are benchmarks in high and hot environments for Himalayan heli-ski drops or heli-pilgrimage missions to holy temples in Katra, Amarnath, and Kedarnath (cf. article page 16). The H130 was recently introduced on the market for these missions with great success. For corporate and VIP missions, we have the Dauphin, H155 and the H135. Airbus Helicopters boasts the largest civil Dauphin fleet in Oil & Gas and is now working on

promoting new ranges like the H145, H175 and more lately the H160, but we need to tap into every single new segment like HEMS, public security and powergrid.

On the military front, we can highlight the huge market perspectives around three main programs: the Panther, under the Naval Utility Helicopter (NUH) plan; the RSH (Reconnaissance and Surveillance Helicopter) program with the H125M Fennec and a third mega-contest called NMRH, Naval Multirole Helicopters, for which we will propose the H225M. The industrial component will be key for these programs, which will form the basis in the long-run for the military helicopter industry in India. The same H225M platform has recently proved its superior features against competition with its selection by the Indian Government to equip the Coast Guard.

**A Timeline in India**

**1962:** license to Hindustan Aeronautics Limited (HAL) to produce Alouette III helicopters in India (locally known as the Chetak)

**1970:** license to HAL to manufacture Lamas (locally known as the Cheetah)

**2010:** Eurocopter inaugurates its new Indian subsidiary

**July 2015:** Airbus Helicopters and Mahindra Defence form “Make in India” partnership

**January 2016:** Statement of Intent signed in presence of Indian Prime Minister Modi and French President Hollande to reinforce the partnership Airbus-Mahindra

**What challenges are you facing, and what are you doing to meet them?**

**X.H.:** The potential to materialize and the timeline. The civil sector is regulated by national authorities, so effort is required to support the government in developing modern technology and the country's infrastructure. The challenge in the civil market is to have a clear push to energize its brisk development. Demand is there and potential is fantastic. But the time has come to transform, by India itself, the potential into enablers and deliverables. On the military side, Airbus Helicopters have the best proven platforms, matching users' requirements; the main challenge is the timeline decision-making for these complex projects. We learn patience in India and we don't invest here by chance: it needs a vision, a clear long-term strategy. This is what Airbus Helicopters has. ■



© Airbus Helicopters India



Heli-pilgrimage market is experiencing a boom.

## Airbus Helicopters in India

**Date founded:** 2010

**Fleet:** 85 helicopters operated by 29 customers

**Fleet makeup:** Ecureuil/H125, H130, H135, Dauphin/H155, Dauphin AS365 N3, H125M Fenec, AS565 MBe Panther, H225M

**Market information:** leader in civil and parapublic helicopter market; significant contender in military market

**Head office:** New Delhi

**Number of employees:** 30+

**Activities:** Sales; support & services; engineering, global sourcing

**Support centers:** New Delhi, Mumbai

**Engineering center:** Bengaluru



Xavier Hay, President of Airbus Helicopters activities within Airbus Group India.



The H130 is also suited for private and corporate missions in India.

## FEATURED ARTICLES

### MAKE IN INDIA

# “A PROGRAM OVER THE LONG TERM”

In the coming months, Airbus Helicopters and Mahindra Defence, which are in the final stages of formalizing their joint venture to build military helicopters in India, will conclude the process of down-selecting locations for the partnership’s future industrial site. Read more about the “Make in India” program below.

With a population of 1.2 billion and a vast national territory strategically positioned in the region, India’s military needs are formidable. Its defense spending is on track to being the world’s fourth-largest by 2020. Paired with that, aging fleets are due for replacement and fleet expansion is ongoing.

Historically, India has been supplied with technology – with some exceptions – through license agreements from Russia and Western countries. The Indian government’s defense procurement policies are aimed at countering this imbalance: DPP-2016, under the category “Buy and Make (Indian),” encourages foreign OEMs to team with private industry to produce defense equipment in-country. Its objectives are three-fold: to provide employment and skill opportunities for its workforce, to enhance in-country technology and to encourage the growth of privately-owned firms.

In July 2015, Airbus Helicopters sealed an MOU with Mahindra Defence to answer the needs of future tenders under the “Make in India” initiative, which covers activities for all of Airbus Group in India. The program’s framework consists in having local production, with a targeted 50 percent local content by local industry.

“The intention is to have a final assembly line in India,” says Fabrice Cagnat, Airbus Helicopters’ Director – Make in India. “But this alone does not ensure we reach the 50% local content target. We need to involve our own suppliers to create an Indian network capable of supplying parts, equipment, and components – all of which would be locally produced.”

Putting such a network in place will take time, Cagnat says. “The skills and willingness exist in India to develop this industry, but there are few players yet who are able to absorb the technology. You need to build local industry step by step. It is a program over the long term.”

Airbus Helicopters has been investing in the “long term” in India since the 1960s, with a license agreement with Hindustan Aeronautics Ltd. (HAL) for producing Cheetah/Chetak helicopters. Now with “Make in India,” the technology transfer and program to localize in India extends the OEM’s relationship with the subcontinent into the next decades.

Such is the case for scouting building locations. From



Airbus Helicopters proposes the H125M for the Reconnaissance and Surveillance Helicopter program.

a pool of 29 states, the joint venture is narrowing down its choices to three or four suitable to break ground on a future production site. The down-selection results are expected in the latter half of this year.

Mahindra and Airbus Helicopters’ joint venture currently targets three helicopter replacement programs on which to found its initial bids (see sidebar). “We have big hopes among the three programs that we can become a local player in India,” says Xavier Hay, President of Airbus Helicopters activities within Airbus Group India. “Our main challenge is to strengthen Airbus Helicopters’ industrial footprint as one of the key pillars of the Group in-country. That’s why we’re embarking on this private strategic partnership, to establish avenues for skills and technology exchange within local industry.” ■

### Three programs to watch

#### Reconnaissance and Surveillance Helicopter (RSH)

**Replacement needs:** 200-400 Cheetah/Chetaks of India’s army and air force

**Proposed aircraft:** H125M

#### Naval Utility Helicopter (NUH)

**Replacement needs:** more than 100 aircraft from the Navy’s Chetak

**Proposed aircraft:** Panther MBe

#### Naval Multirole Helicopter (NMRH)

**Replacement needs:** more than 120 helicopters

**Proposed aircraft:** H225M



## Global Vectra Helicorp Ltd.

India's largest private helicopter company, with a fleet of over 25 aircrafts

Airbus Helicopters fleet: H125, H155, H135, H130

Offices: Mumbai, New Delhi, Bengaluru

Operations: passenger transport, charter, aerial survey, Oil & Gas, and utility services

# AN EXCELLENT PERFORMER IN HIGH-PACED INDIA

Global Vectra Helicorp Ltd. operates over India's vast landscape on charter operations with its newest star, the H130, in pride of place.

With over 210,000 accident free flight hours in passenger transport, charter, aerial survey, Oil & Gas, and utility services, Global Vectra Helicorp Ltd. (GVHL) is India's largest private helicopter operator. Its operations cover the whole of India, from Katra in the north to Goa in the south, and count a fleet of eight Airbus Helicopters aircraft, including a new H130 – with a ninth expected for delivery in the second quarter of this year. The H130 improves upon its EC130 predecessor in elements of passenger comfort, making it a favorite in sightseeing services and charter operations. Enhancements include a spacious cabin, vibration control system and energy-absorbing seats. "The H130 is proving to be an excellent performer," says A.J. Baker, CEO of GVHL, praising the enclosed Fenestron tail rotor as an advantage to safety, while adding that its operational characteristics are a bonus. "The aircraft's reliability and its smooth ride are positives. One of the highest impact features is the additional passenger seat, which adds benefit in

high-tempo passenger transport activities." To ensure greater access to support and services, GVHL became the first customer to include a Smart Parts-by-the-Hour HCare support package. "Our H130 is used for intense operations and we wanted the assurance of guaranteed, rapid access to spares and support so that we can maintain optimum aircraft availability," says A.J. Baker. Having local support provides the operator with innumerable advantages. "We are seeing clear efforts from the Airbus Helicopters India team to proactively assist us with areas of our business," says A.J. Baker. Early this year, for example, GVHL engaged the manufacturer to deliver ICAO standard Safety Management System (SMS) training. With its second H130 on the way, the company takes pride in its place on the stage of India's helicopter operations. "The first flight of our H130 was special," says A.J. Baker. "It really stands out as the new star on the helipads." ■

Global Vectra Helicorp Ltd became the first customer to include a Smart Parts-by-the-Hour HCare support package.



**More information on Rotor on line**

# THE REFERENCE FOR HELI-PILGRIMAGE

The mountains of Jammu & Kashmir South of the city of Srinagar are home to the famous Hindu cave temple, Vaishno Devi. The operator Himalayan Heli Services Pvt. Ltd. offers shuttle flights year round to pilgrims from its base in Katra up to the helipad in Sanji Chat near the temple.

Article: Marine Balaesque



It's 7 a.m. The morning sunlight slowly spreads over the town of Katra as the crews of Himalayan Heli Services (HHS) busily prepare their helicopters for flight. Crowds of pilgrims are already jostling in front of the entrance to the helipad. Another busy day is about to get underway for this operator which provides daily services from dawn until dusk. The helicopters normally log between ten and eleven hours each day, depending on when the sun sets. In compliance with safety regulations, only one take off is authorized at a time from each base: as one helicopter lifts off from Sanji Chat, the other simultaneously begins its flight up from Katra. Each flight lasts approximately three

minutes, and it takes the pilot a total of only eight minutes to complete the round trip between the two bases, including passenger embarking and disembarking. On a typical day, the company completes between 60 and 90 shuttle flights for a total of 120 to 180 landings, depending on weather conditions and the number of passengers. Both of the H125s are equipped with left side two-place front bench seats that can transport up to six pilgrims plus the pilot, thus increasing the operator's carrying capacity. Approximately 720 passengers can be airlifted daily by Himalayan Heli Services from the two bases for this mission.

The company just ordered a new H125 which will be delivered in September 2016.

## Himalayan Heli Services: A multi-mission company

Founded in 2002 by Harsh Vardhan Sharma and Wangchuk Shamshu, the company operates four H125 helicopters that perform all its missions. Two of the company's helicopters are on year-round heli-pilgrimage duty in Katra, while the other two perform aerial work for the Indian government around the country. The operator also provides services to the energy sector (HHS was the first operator to perform power line stringing in India), performs flights for geophysical studies, and is active in aerial mapping.







The powerful thudding sound of the rotor reigns on the helipad, but it doesn't seem to bother the pilgrims who, for the most part, have never seen a helicopter this close.

### THE HEAT IS ON

The company's helicopters fly in the Himalaya mountain region known for its high temperatures, strong winds and high altitudes. The base in Sanji Chat is located at 5,300 feet and temperatures vary between 35 and 40 degrees Celsius in the summer. But, with its high power the H125 is more than up to the challenge. It now has an improved rate of climb and a higher payload, meaning it can provide top-notch performance levels in high & hot conditions.

The H125 has certainly won over its pilots, as confirmed by the company's chief pilot, Rajeev Chouhan: "The H125 has quickly earned its place as the most popular single-engine helicopter for mountain flying in India. It has a good power reserve at high altitudes, but above all, it's a robust helicopter that is easy to fly."

### ORGANIZATION AND SAFETY

To handle its busy flight schedule, HHS employs four pilots and a team of forty employees at its two bases in Katra and Sanji Chat. Rajeev described the setup: "On a typical day, a pilot performs three or four flights per hour. Each pilot works for ninety minutes and then takes a sixty-minute break. That gives our technicians an hour to check the condition of the helicopter." During the break, the ground crew performs a walk-around inspection and also cleans the helicopter. Such an organizational set-up allows the company to perform an average of 1,200 flight hours per year in Katra on each aircraft, demonstrating at the same time the high level of



During the break, the ground crew performs a walk-around inspection and also cleans the helicopter.

reliability and availability of this specific platform despite the demanding mission.

More and more pilgrims are flocking to the site each year as the "heli-pilgrimage" market experiences a boom. The purchase of an additional H125, which will be delivered in September this year, will help HHS to expand its activity while remaining faithful to its primary missions: safety and efficiency. ■

UP ABOVE





# MISSION



**1 – The Australian Defence Force received the first H135 in April, leading the way to delivery of 14 more over the next eight months.**

**2 – The U.S. Armed Forces have ordered a total of 427 helicopters of the related UH-72A Lakota, also for training missions.**

**3 – The H135 of the Japan Maritime Self-Defense Force have been used for advanced military training missions since 2011.**

WORLDWIDE

# Delivering military training across the globe

**With their selection for the Military Flying Training System in the United Kingdom,** the H135 and H145 helicopter families have proven once again to be the solutions of choice for military training purposes. Many other countries already entrust the flight training of their air force, army and navy pilots to these aircraft, relying on the same technical advancements that civil operators benefit from.

Article: Jens Reitlinger

From Germany to Australia, from Japan to the United States: the light twin-engine platforms H135 and H145 by Airbus Helicopters are used as military training helicopters around the globe. Most recently, the United Kingdom chose both aircraft types for the country's Military Flying Training System (MFTS), becoming the first country to receive the newly updated H135, featuring the proven avionics solution Helionix®. Under MFTS, Airbus Helicopters will be the rotary wing, sole solution provider for Ascent Flight Training, supporting their design and delivery of flight training to the UK Armed Forces. With a projected requirement to train close to 200 helicopter pilots a year, MFTS will cover the comprehensive training needs of the Royal Air Force, Royal Navy and British Army including offshore and night time flying.

## THE H135, SUITED FOR PILOT TRAINING

In December last year, the Japan Maritime Self-Defense Force (JMSDF) received two H135 models, marking the final delivery of 15 helicopters over the last six years. Selected for the high rate of availability, among other factors, the specially customised TH-135, as it is designated in Japan, has been used for advanced military training missions since 2011, when it replaced the former single-engine fleet.

For a joint Helicopter Aircrew Training System (HATS) for both army and navy pilots, the Australian Defence Force also acquired 15 helicopters of the H135 family. The first, specifically configured for training missions for Australia's future generations of combat aviators,

was delivered in April – with a comprehensive support package – leading the way to delivery of 14 more over the next eight months. The delivery, made on time and on quality, was lauded by the contractual customer, Boeing Defence Australia and the end-user within the Australian Government. As part of the contract, the first team of Australian flight instructors passed through the Airbus Helicopters Training Academy in Donauwörth in late 2015 to learn everything there is to know about their future training platform.

## UH-72A LAKOTA FOR MILITARY TRAINING

The H145 helicopter has a long history of providing pilot training for military customers. The U.S. Armed Forces have ordered a total of 427 helicopters of the related UH-72A Lakota, also for training missions in the U.S. Army and Army National Guard fleets. In late 2015, the U.S. Army placed another order for twelve aircraft for initial-entry rotary wing training at the United States Army Aviation Center of Excellence Fort Rucker, Alabama. In contrast to their U.S. colleagues, the German Armed Forces rely heavily on the other light-weight twin-engine helicopter by Airbus Helicopters, the H135, for their pilot training. At the International Helicopter Training Centre in Bückeburg, Lower Saxony, 14 helicopters of the H135 family serve as training instruments for all prospective army pilots in Germany, as well as other countries like Austria and Sweden. The fleet has clocked more than 85,000 flight hours since the delivery of the first aircraft in 2000, with an average availability of over 95 percent. ■

## The ideal platform for military training

Used worldwide by a host of armed forces, the H135:

- Offers unmatched standards in safety and performance
- Features the most modern technologies for sustainable pilot training
- Benefits from low operating costs and simple and cost-effective maintenance
- Is highly versatile and suitable for a variety of training needs

# A big reach for air-to-air refueling

**With its H225M Caracal**, the French Air Force is one of the only armed forces in the world to perform helicopter air-to-air refueling (AAR) missions. French crews have now perfected this extremely difficult technique for both day and night flights, opening the way for new operational applications.

Article: Alexandre Marchand - Photos: Frédéric Lert and French Air Force.

The AAR formation flying over the dark swells of the Bay of Biscay, off the coast of Arcachon, is certainly a sight to behold: an MC-130J of the U.S. Air Force, with two H225M Caracal helicopters from the French Air Force following close behind to conduct in-flight refueling training. The refueling drogues have been extended and float on the relative wind. At the end of each drogue waits a white basket, in which the refueling probe of the Caracal must be inserted. In the cockpit of the helicopters, each crew member is concentrated on his task. In the front left-hand seat sits the flight commander, who is also the instructor. In the right-hand seat sits a young pilot performing his qualification test. On the seat between the two sits the flight engineer, his eyes riveted on the engine parameters.

## IT TAKES CONCENTRATION AND A STEADY HAND

The first Caracal has assumed an observation position just a few meters behind the tanker, waiting for the indicator light to illuminate: this is the green light that authorizes the helicopter to move in closer and establish contact. To simulate real-life conditions, there are no radio communications between the aircraft.

A discrete light illuminates on the back of the tanker. The flight commander sees it first and gives the signal to his copilot:

“Okay, we’ve got the green light. Start moving in. Don’t sink too low.”

The pilot slowly moves the helicopter closer to the tanker. Its enormous wing fills the field of view as the rotor disk creeps closer to the basket. The airplane propellers steadily break up the air mass as the helicopter bounces along in its wake. Steady as she goes...

“We’re in the gust area... keep going... not too low... nice and steady, no jerkiness...”

With a calm, steady voice, the instructor guides the pilot flying the helicopter. The instructor’s hands hover

above the controls, ready to take over if necessary.

“Okay, you’ve got it... Contact! Stay in position, don’t drift to the right...”

## COMBAT PROVEN

The pilot breathes a sigh of relief. He nailed the test on the first try. The contact is good, and the fuel can now flow into the tanks of the Caracal at 200 kg per minute. To fill the tanks, the pilot will have to remain in formation behind the 70 tonne airplane for at least ten minutes. The tanker creeps along with all flaps extended to fly at the lowest possible speed, while the helicopter must remain at full power to maintain a speed of 120 kts amidst the turbulence. Due to the extreme difficulty of the training, only a small circle of countries perform helicopter AAR missions. With its Caracals, the 1/67 Pyrénées helicopter squadron is the only European unit to have fully perfected the maneuver. After many years devoted to developing this know-how, the unit is now capable of performing helicopter AAR missions for actual operations, when required for distant deployments or to avoid enemy detection.

Time goes by and in the helicopter, the young pilot gains confidence and continues to make “contacts.” For the fifth time since the start of the flight, he eases his helicopter back from the airplane, breaks contact with the tanker and returns to his observation position, ready to make his sixth contact. Outside, the sun has dipped below the horizon. Dusk settles over the Bay of Biscay, and soon gives way to the dark of night. It is no longer possible to distinguish between the gray sea and skies and the gray airplane. All lights have been extinguished. Zero visibility. Night vision goggles (NVG) are fitted on the helmets, and the training exercises continue in the green halo of the image intensifiers. Already arduous in broad daylight, the exercise is even more strenuous in the black of night. ■

- 1 – A French Air Force H225M prepares for refueling from a U.S. Air Force tanker airplane.
- 2 – The U.S. Air Force sent MC-130J tanker aircraft from their base in the UK to help train the French helicopter crews.
- 3 – Refueling as seen through night vision goggles. With the naked eye, both the helicopter and the airplane are practically invisible.
- 4 – The French Air Force is currently using the air-to-air refueling capabilities of its helicopters for operations in the Sahel.
- 5 – The in-flight refueling probe is telescopic; it can be seen here in its retracted position in its housing. When deployed, it extends beyond the rotor disk by approximately one meter.
- 6 – The primary danger in air-to-air helicopter refueling is the proximity of the rotor to the in-flight refueling drogue.



1



2



3

### H225M



- Capacity: 2 pilots + 1 chief engineer + 28 troops
- Engine: 2 Turbomeca MAKILA 2A1
- Max. cruise speed: 324 km/h (175 kts)
- Range: 909 km - 491 NM (standard fuel tanks)
- Endurance without reserve < 4h20 min



4



5



6

# The vital role of aircraft MRO

**Maintenance Repair & Overhaul (MRO)** activities are a key to company development and customer satisfaction, and help to leverage aircraft sales. With its vast network of customer centers and partner maintenance centers, Airbus Helicopters continues to develop and organize its offer.

Article: Alexandre Marchand



Airbus Helicopters customer centers perform heavy maintenance, major overhauls, retrofits and other upgrade work.

© Lorete Fabre

## 2

### A highly competitive market

Many Airbus Helicopters operators and customers have their own maintenance facilities, and in certain cases even offer their services to other operators. With so many players on the scene, the helicopter MRO market is extremely competitive. But Airbus Helicopters, like other original equipment manufacturers (OEM), offers unique know-how and means: thorough knowledge of its own aircraft, unparalleled technical skills and certifications, and specialized depot-level industrial equipment. ■

## 1 Two networks to better meet demand

For its helicopter MRO activity, Airbus Helicopters can count on two separate networks: its company customer centers, and the certified service and maintenance centers set up through partnership agreements. The network of customer centers is now well established, with 24 centers operational in 2016. Approximately 80 partner centers are currently operational, but this set-up is more flexible and varies according to need. The customer centers perform heavy maintenance, major overhauls, retrofits and other upgrade work, while the partner maintenance centers handle flight line maintenance and lighter maintenance work. ■



Airbus Helicopters offers unique knowledge of its own aircraft and unparalleled technical skills.

© Anthony Pecchi





The customer centers offer the same high-quality work and lead times all around the globe.

## 3 More attuned to customer needs

The customer centers can now focus their efforts on aircraft MRO work. As true specialists in these activities, the centers can optimize costs and lead times and provide operators with a more attractive offer. Further emphasis is being placed on standardized services at all the customer centers so that the same high-quality work and the same lead times can be offered all around the globe. A new contractual framework, the “network loyalty program,” has also been introduced with the partner centers in order to monitor their services and control performance levels — in particular with regards to customer satisfaction. ■

### A standardized retrofit offer

Until the start of the 2010s, Airbus Helicopters was mainly focused on helicopter customization and new solutions tailored to specific equipment needs — in particular for retrofits. The downside of this approach was higher costs and longer lead times that were often hard to justify to customers. The Aircraft Retrofit/Modernization department has since introduced a commercial policy to propose standardized, referenced solutions issued through Service Bulletins (SB) or Supplementary Type Certificates (STC). These retrofits are available for all the helicopters in the range and can be performed by workshops with Part 145 certification. Nearly 300 solutions are already available and the number continues to grow. Increased standardization means lower costs and shorter lead times. Of course, Airbus Helicopters can still find solutions for any special needs, and the company continues to offer customization services. Leaving a customer without a solution is simply out of the question.

More information about standardized retrofits at

<http://upgrades.airbushelicopters.com/>



© Christophe Guibbaud

## 4 Evolving customer needs

A growing trend in the market, in particular for Public Services and some militaries, is the delegation of maintenance activities to a third party which enables operators to focus on their core mission rather than handling the hazards of maintenance. The next step is the complete outsourcing of all support and services activities, from maintenance to logistics and airworthiness, a market in which Airbus Helicopters is uniquely positioned with its HCare Infinite offer. In these contracts, a full fleet availability service is provided, the customer flies the aircraft and Airbus Helicopters does everything else. ■

FRANCE

# Building for development

The ambitious research and development programs of Airbus Helicopters require specialized means, and the innovative new building that recently opened its doors at the Marignane plant in France offers unique tools to provide customers with even more added value.

Article: Alexandre Marchand



## WHY THE MARIGNANE DEVELOPMENT CENTER PROJECT?

The delivery last March of the F03 building, which has a capacity for nearly 1,000 employees, marks the end of the Marignane Development Center (MDC) construction project that was kicked off in 2012. The MDC is home to two unique development tools: one “Helicopter Zero” test rig for helicopters systems and another for dynamic assemblies. The new center will strengthen synergy between the different departments involved in development, and illustrates the fundamental way in which work methods are evolving in this sector. The construction of this innovative building is also a show of confidence in the company’s future. This major investment will increase efficiency at Airbus Helicopters for many years to come. ■

## 4 KEY FIGURES

**19,500 m<sup>2</sup>** of office space.

**997** workstations.

**40 million euros** initially budgeted, final expense of 38 million.

**Zero** construction delays.

## WHAT WERE THE ARCHITECTURAL SPECIFICATIONS?

The overriding principle was to improve collective performance by gathering together a working community around the development aircraft. The building’s design had to encourage exchange and technical innovation by proposing work spaces that were themselves innovative and attractive. Last but not least, the building had to have the High Quality Environmental certification, the French green building standard which guarantees best environmental and energy practices from a building’s design through to its construction—and of course, throughout its use. ■



© Lorette Fabre

**WHAT INNOVATIVE FEATURES HAVE BEEN USED FOR INTERIOR DESIGN?**

Open spaces make up ninety percent of the office space, but the floor plan ensures that everyone is within at least eight meters of natural lighting. Each open space is divided into Elementary Design Units, which are semi-partitioned areas that contain private “work pods” — unreserved meeting areas where people can talk without disturbing others in the open space. Each floor has its own “accelerator zone” for brainstorming sessions, where teams can use interactive screens and large whiteboards installed on the partitions. These scalable spaces were designed for the “sprint” phases of the development programs. The building also has 3D work rooms, including one directly linked to a virtual reality facility, and an “innovation lab” on each of the department floors. On the top floor is a “knowledge area” that can be used by anyone in the design office. The exact configuration of this room, which is intended to facilitate communication, information sharing and knowledge management, has not yet been determined. ■

**HOW IS THE MDC ORGANIZED?**

The building has six different levels. Project teams currently working on the H160 and X6 programs have use of two floors. Other parts of the building are occupied by the departments that interact most with the project platforms. The building also houses a hangar which can hold up to four prototypes or mock-ups from the development programs, with direct access for the prototype teams. ■



© Eric Raz

**KEY DATES**

**2013:** inauguration of the Helicopter Zero system.

**February 2014:** registration of construction permit for F03.

**September 2014:** ground broken for F03.

**October 2014:** inauguration of Helicopter Zero for dynamic assemblies.

**August 2015:** heavy construction work completed on F03 building, minus the water and HVAC systems.

**March 8, 2016:** delivery of F03 and first teams move into building.



© Eric Raz

## A bright future

Romania has extensive experience in aeronautics, and also a rich history of cooperation with France in the helicopter industry. Airbus Helicopters is well aware of these strengths and continues to invest in the country.

Article: Alexandre Marchand

Modernization built on tradition: a paradoxical way to describe the long-standing ties between Airbus Helicopters and Romania? Not so, says Serge Durand, general manager of the two industrial and commercial entities in the country: “The creation in 2002 of Airbus Helicopters Romania in a partnership with the Romanian aircraft manufacturer IAR consolidated the rich past linking our company with Romania. Beginning with our initial cooperation programs for the Alouette 3 and the Puma, the country has developed a great deal of expertise with our products, and we’re looking to build on that.” Airbus Helicopters Romania currently employs a staff of 160 and has built a solid reputation for heavy maintenance, the repair of damaged aircraft, and even for fleet modernization. Whether it be the Fennec, Dauphin, H135, or Puma, the customer center has extensive experience with almost every helicopter in the current and former ranges (except for the Tiger, NH90, H225 and H145). The latest example of the center’s industrial know-how was the modernization of twenty Pumas for the Royal Air Force as part of the helicopter’s Life Extension Program (LEP).

“All twenty helicopters were delivered on schedule and to the highest quality standards,” said Durand. “When I first arrived in Romania in January 2015, I found highly qualified staff that were passionate about their work, as our top-notch customer satisfaction levels can certainly attest.” The extensive experience of the company’s technicians and managers is the reason behind this expertise—a precious asset that Airbus Helicopters Industries, an entity created in Romania

for the H215 project, will be counting on to develop its know-how.

### AIRBUS HELICOPTERS INDUSTRIES

Unlike Airbus Helicopters Romania, Airbus Helicopters Industries is wholly owned by Airbus Helicopters. “We wanted to be free to respond to global issues on our own, whether it be for commercial or industrial strategy,” said Durand. “But we still enjoy close ties with IAR and Premium Aerotech, which will both be part of our network of suppliers. We’re also very attuned to the opportunities presented by the other Romanian companies in close proximity. We’re working actively to attract local and international suppliers in order to create an industrial aviation hub around our plant in Brasov. Our initiative has received the enthusiastic support of all the players in the Romanian helicopter industry.”

AHI currently employs approximately thirty people in Brasov, but this number should be closer to one hundred by the end of the year. The new Airbus Helicopters entity will be equipped with a modern assembly line dedicated to the H215. “There’s a huge market for this helicopter,” added Durand. “Approximately 1,900 former-range helicopters are still in service (Mi8, Mi17 and Sikorsky S61 families), and they’ll all eventually need to be replaced.” A highly responsive design office will also be created to support the activity of industrial structures following a “flowline” principal. The design office will receive its Part 21 certification by the end of the year and will have a staff of thirty engineers by 2019, when both industrial and commercial entities will be fully operational and working in complete synergy. ■

- 1 – Airbus Helicopters Industries will be equipped with a modern assembly line dedicated to the H215 in Romania.
- 2 – Airbus Helicopters Romania currently employs 160 people and has built a solid reputation for heavy maintenance.
- 3 – The extensive experience of the company’s technicians and managers is a precious asset for Airbus Helicopters Romania.

“The quality of the services provided by Airbus Helicopters Romania, the competence and the professionalism of the technical team, and the prompt reaction of the commercial representatives ensure the high availability and reliability of the H135 helicopters operated by the Ministry of Internal Affairs, mainly for Emergency Medical Services.”

**Petre Trailescu,**  
Technical Director, EMS unit  
Ministry of Internal Affairs  
of Romania.



### The H215: extremely cost-effective

The H215 is the new name for the AS332 C1e and AS332 L1e, which entered service in 2014. Approximately fifteen units of the helicopter, which has been optimized for aerial work, are already in service and have logged more than 10,000 flight hours. The helicopter is already well known for its excellent performance levels and equipment. With the new industrial set-up in Romania, it will soon be turning heads thanks to its extremely competitive acquisition and operating costs.

© Patrick Penna



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ICELAND

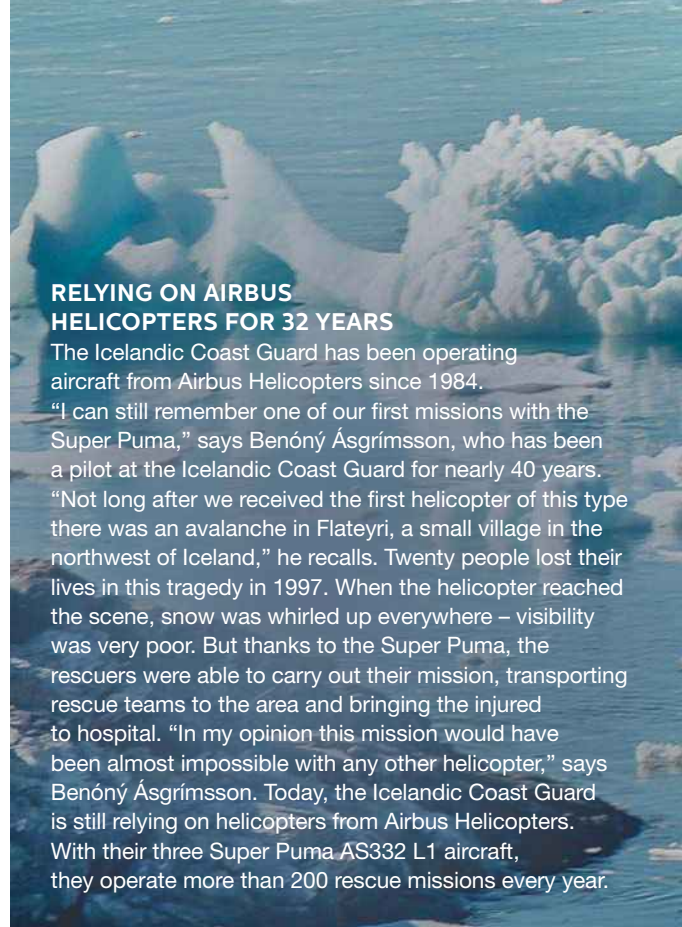
# A close watch in the open north

**More than one million tourists visit Iceland every year – and growing.** That’s why the number of emergency missions in the country with a population of 330,000 people has increased in recent years. But whether it’s a local or a tourist who needs help, the Icelandic Coast Guard and its Super Puma are there to provide it.

Article: Beata Cece - Photos: Icelandic Coast Guard

## RELYING ON AIRBUS HELICOPTERS FOR 32 YEARS

The Icelandic Coast Guard has been operating aircraft from Airbus Helicopters since 1984. “I can still remember one of our first missions with the Super Puma,” says Benóný Ásgrímsson, who has been a pilot at the Icelandic Coast Guard for nearly 40 years. “Not long after we received the first helicopter of this type there was an avalanche in Flateyri, a small village in the northwest of Iceland,” he recalls. Twenty people lost their lives in this tragedy in 1997. When the helicopter reached the scene, snow was whirled up everywhere – visibility was very poor. But thanks to the Super Puma, the rescuers were able to carry out their mission, transporting rescue teams to the area and bringing the injured to hospital. “In my opinion this mission would have been almost impossible with any other helicopter,” says Benóný Ásgrímsson. Today, the Icelandic Coast Guard is still relying on helicopters from Airbus Helicopters. With their three Super Puma AS332 L1 aircraft, they operate more than 200 rescue missions every year.



## GUIDED BY THE LIGHT

It was a typically gloomy winter’s day in Iceland, with darkness shrouding the island for 20 hours. One man was hiking on Hekla mountain, also known as the “Gateway to hell” and one of the most active volcanoes in Iceland. Without GPS the man soon got lost.

The Icelandic Coast Guard was notified, but there was a problem: they had no means of pinpointing his location on the impressive mountain that dominates much of the southern plains of Iceland. This man was lucky, though: as one of the first civil operators to ever use night vision goggles, the Icelandic Coast Guard is very experienced in navigating in the dark. As the hiker also had no kind of lamp, the helicopter crew asked him to turn on the light on his mobile phone. And from more than 10 miles away, this is what led them to him.



The Icelandic Coast Guard was one of the first civil operators to ever use night vision goggles.



“When we fly across Iceland we can experience all kinds of different weather. It can be sunny, then windy, snowing and, particularly in the highlands, very icy. The Super Puma is very well suited to the missions in these demanding and constantly changing conditions. Therefore, the de-icing system on-board the aircraft is crucial – we couldn’t complete our missions without it.”

**Benóný Ásgrímsson,**  
pilot at the Icelandic Coast Guard

## In the field



### ISLAND

- **Date:** 2015
- **Purpose:** Westmann Islands is an archipelago off the south coast of Iceland. When the weather is too bad for other aircraft to operate safely, the time for the Icelandic Coast Guard and their Super Puma L1 has come.
- **Result:** Four emergency missions to the Westmann Islands were flown in 2015, which led to the secure medical evacuation of four patients.



### VILLAGE

- **Date:** 2016
- **Purpose:** In Neskaupstadur, a small village on the east coast of Iceland, a newborn baby and its mother needed urgent medical assistance.
- **Result:** The Icelandic Coast Guard, based on the west coast, had to cross the entire country to pick up the two patients and managed to bring them to the hospital on time. Mother and baby are in good health.



### SEA

- **Date:** 1997
- **Purpose:** When a ship sank in the sea between Iceland and Scotland, the Icelandic Coast Guard was called for help. It was one of the most demanding missions in the history of the rescue organization.
- **Result:** Despite the extreme conditions over the stormy sea, nine members of the ship’s crew who were already in the water were rescued.



### MOUNTAINS

- **Date:** 2016
- **Purpose:** Two climbers had an accident at an altitude of 2,000 feet on Skardheidi mountain. One was very seriously injured.
- **Result:** Despite having to fly dangerously close to the rocks in high wind, the power of the Super Puma L1 enabled the crew to get the two men safely on-board.

# THINK ARMED SCOUT OPERATIONS

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