

# Rotor

BY AIRBUS HELICOPTERS

**SERVICES**  
The latest initiatives  
from the teams  
at Support & Services

**LIFE OF THE RANGE**  
The EC175, the  
most competitive  
helicopter in its class

**LOGBOOK**  
Two Caiman  
arrive in  
African skies



**Generation!**

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# 10 Generation!



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**All of the commitments we undertake are made with you in mind.** It is our mission to bring you the most effective solutions so that you can serve, protect, save lives, and transport passengers in complete safety. Our top priority is for you to succeed in your missions, relying on our most competitive solutions. Equally, this means adapting ourselves through technological innovation, focused above all on quality and on safety for the men and women who fly in your helicopters.

**Airbus Helicopters is undergoing a profound transformation,** with our future products being among the tangible signs. In this issue, you will discover the latest addition

## “A new chapter is opening in Airbus Helicopters’ history.”

**Guillaume Faury**

to our range, the H160, which was unveiled at the Heli-Expo trade show in Orlando. This helicopter is an important milestone in our transformation and represents a step forward on our path towards excellence.

**A new chapter is opening in Airbus Helicopters’ history.** To mark this important moment, and in keeping with our change of name in 2014, we will be renaming our future products and the majority of our present range: The letters EC will be replaced by the letter H, the universal symbol of the helicopter. Our teams are working to make Airbus Helicopters reach the level of excellence that its customers expect, and to make it the benchmark of the helicopter industry.



NORTH SEA

December 2014

**The EC175 takes its first commercial flight with the Noordzee Helikopters Vlaanderen crew.**

2015 will also be a busy year for the program, with 49 deliveries scheduled.



© Anthony Pecchi



© Charles Abarr

The EC135 T3/P3 of Aiut Alpin Dolomites flies over the peaks of the Italian Alps.



© Anthony Pecchi

The EC645 T2s are equipped with Fenestron® shrouded tail rotors for increased safety during takeoff and landing.



© Jérôme Deulin

Airbus Helicopters has already delivered 110 Tigers to France, Germany, Spain and Australia.

## INTERNATIONAL 53 NH90s DELIVERED IN 2014

For the first time in the history of the program, more than fifty NH90s were delivered in a single year. A total of 232 units have now been delivered to customer countries.

On a symbolic note, the 200th NH90 was delivered to Belgium last July. Spain also received its first helicopter last December from the final assembly line in Albacete. In addition to the new units, nine upgraded NH90s were also delivered, confirming the ramp-up in this activity. Other major milestones were reached in 2014, with the qualification of variants for Spain, the SAR-ASW<sup>(1)</sup> for Sweden, and the final radar configuration for the NFH<sup>(2)</sup> version chosen by Italy and the Netherlands. Two other important events occurred last year: New Zealand received its last NH90s (both production and upgraded models), thereby becoming the first customer country to conclude its purchasing contract; and the worldwide NH90 fleet surpassed the 60,000 total flight hour milestone.

(1) Search And Rescue/Anti-Submarine Warfare

(2) NATO Frigate Helicopter

## ITALY THE EC135 T3/P3 ENTERS SERVICE

Last December, the EC135 T3/P3 entered service for the mountain rescue specialist Aiut Alpin Dolomites, an operator based in northern Italy. Aiut Alpin Dolomites' operations benefit from the enhancements incorporated in the EC135, which include significant power reserves for increased safety margins, an improved flight envelope (especially in high and hot environments), and an increased maximum takeoff weight of 2,980 kg. *See full article on page 17.*

## THAILAND FIVE EC645 T2s AND TWO EC725s

The Royal Thai Navy has signed for five EC645 T2s to be deployed for transport duties, with deliveries scheduled to begin in 2016. This purchase represents the first export order of this militarized version of the EC145 T2. The Royal Thai Air Force also ordered two EC725s for tactical transport, search and rescue (SAR), and combat search and rescue (CSAR) missions. These aircraft will be delivered in 2017, joining the four EC725s ordered in 2012.

## FRANCE TIGER HAD IN BLOCK 2 CONFIGURATION

Last December, Airbus Helicopters delivered the first two attack helicopters in the HAD (support and suppression) Block 2 version to the French Army. The "Block 2" version brings additional enhancements that now complement the full capacity of the HAD version, including improved targeting accuracy for rockets, the addition of combat external fuel tanks, an extension of the flight domain in which Spike and Hellfire anti-tank missiles can be fired, and the integration of digital communications. The HAD Block 2 helicopters are also "navalized," allowing their use from ships and in sea environments

© Eurocopter Romania



**ROMANIA**  
**TWENTY PUMAS  
 UPGRADED FOR  
 THE ROYAL AIR FORCE**

As part of the RAF Puma Life Extension Program, Eurocopter Romania delivered major upgrades that significantly improve the operational performance of the RAF Puma helicopters. With new “glass cockpit” avionics, a four-axis digital autopilot and two Makila turboshaft engines, the new RAF Puma 2 can fly higher, faster and further while providing pilots with the benefit of the latest helicopter technology and greater mission capability. The 20 helicopters were upgraded over 23 months, demonstrating the industrial capabilities and technical expertise at Eurocopter Romania. This achievement is the result of close cooperation within the Airbus Group between Airbus Helicopters UK and the parent company.

The twenty helicopters were upgraded in just 23 months.

**JAPAN**  
**THREE TH-135 TRAINING  
 HELICOPTERS JOIN  
 THE JAPAN MARITIME  
 SELF-DEFENSE FORCE**

Airbus Helicopters Japan has successfully handed over three TH-135 training helicopters to the Japan Maritime Self-Defense Force (JMSDF). The three aircraft delivered between October and December are the JMSDF’s 11th, 12th and 13th units. The TH-135, which has been customized for JMSDF, is a variant of Airbus Helicopters’ light twin-engine EC135 T2+. Meant to replace their single-engine training helicopter fleet, deliveries of the TH-135 began in 2009 and the aircraft have been in operation since 2011.



Japan was one of the first countries in Asia to purchase the TH-135 training helicopter.

© Airbus Helicopters Japan

# History is written with an

**With its inaugural presentation of the H160, Airbus Helicopters is making its corporate transformation visible and unveiling the company's new brand.**

The product range's EC prefix will progressively be replaced by the letter H for Helicopter.

Suffixes, as well as the differentiation for single- or twin-engines, will no longer be used.

Military versions will be symbolized by the letter M. The only exceptions to this new branding are the AS350 B2, AS635 and 565, the EC145e, the AS332 and 532, the Tiger and the NH90, which will keep their current names.



Previous trade name	New trade name	
	Civil	Military
EC120 B	H120	
AS350 B2	AS350 B2	
AS350 B3e	H125	
AS350 C3e		H125M
EC130 T2	H130	
EC135 T3/P3	H135	
EC635 T2e/P2e		H135M
EC145e	EC145	
EC145 T2	H145	
EC645 T2		H145M
AS635 N3+	AS635 N3+	
AS565 MBe		AS565 MBe
EC155 B1	H155	
X4	H160	
EC175	H175	
AS332 C1e	AS332 C1e	
AS332 L1e	AS332 L1e	
AS532 ALe		AS532 ALe
EC225e	H225	
EC725		H225M
NH90		NH90
Tiger (EC665)		Tiger

Rotor Magazine is delighted to present you with this one-of-a-kind naming chart showing the conversions which will be applied by January 1, 2016.

# EC175

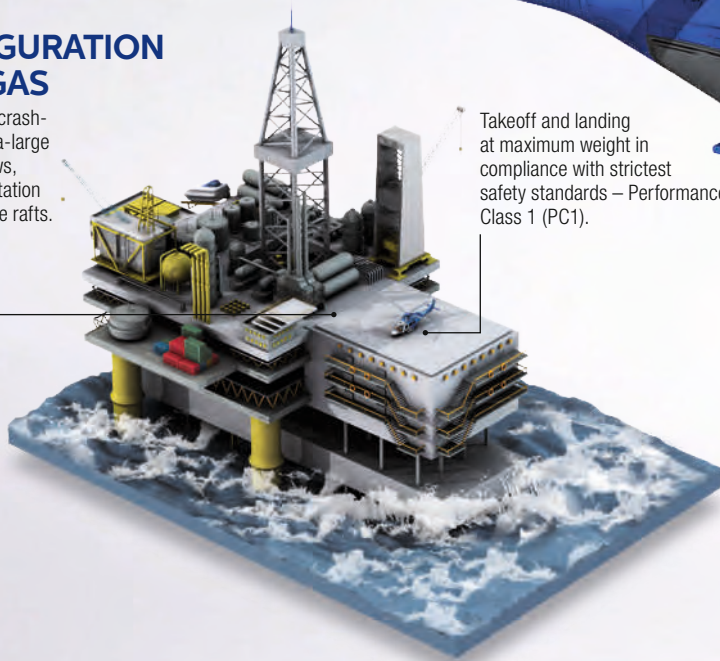
The EC175 is setting new standards of safety and comfort, with the most competitiveness to be had in its class.



The EC175 sets a new standard in terms of comfort, with the largest cabin volume per seat and low vibration and sound levels whatever the speed.

## CONFIGURATION OIL & GAS

Safety: highly crash-resistant, extra-large egress windows, emergency flotation devices and life rafts.



Takeoff and landing at maximum weight in compliance with strictest safety standards – Performance Class 1 (PC1).

Most competitive rotorcraft for transporting between 16 and 18 passengers.

## Technical Data



Maximum takeoff weight: **7,500 kg / 7,800 kg (end 2016)**



Standard fuel tank capacity: **> 2,000 kg**



Ferry range: **> 600 NM**



Endurance: **6 hours**



Maximum cruise speed: **160 kts (300 km/h)**

Within its class, the EC175 offers the best operating range in relation to the number of passengers.

Objective	Passengers	Radius of action
Comfort	16	140 NM
Higher density	18	105 NM
Long range	12	195 NM

## BUSINESS AVIATION AND GOVERNMENT TRANSPORTATION

With the most spacious and comfortable cabin in its class, the EC175 offers many configurations.



VIP or Executive configuration: 6 to 12 passengers.



## Dimensions



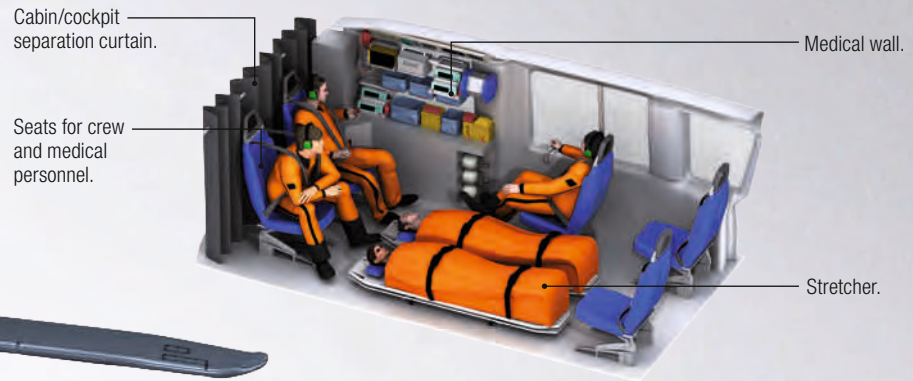
Very large window area.



Its new avionics suite and automatic pilot offer easy piloting with optimized assistance.

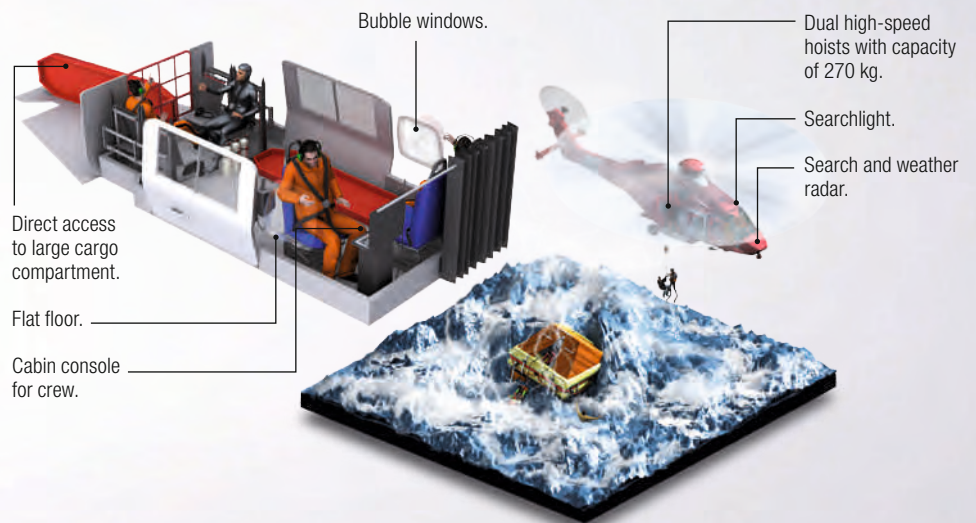
## EMERGENCY MEDICAL SERVICES

Spacious cabin with room for intensive care medical installation, while still offering free space for seats and cargo access. The EC175 can easily perform long-distance inter-hospital transfer flights.



## SEARCH AND RESCUE (SAR)

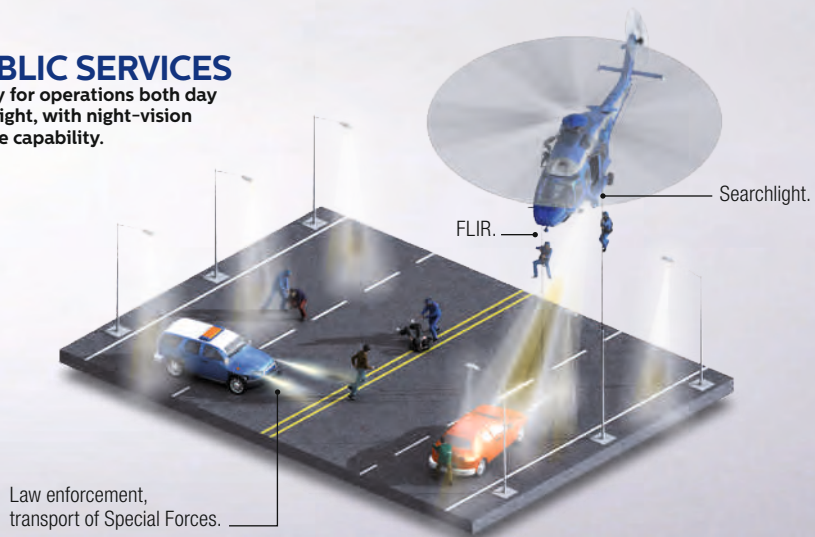
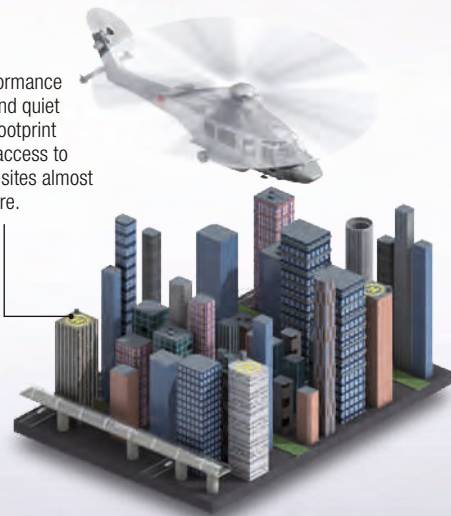
Capable of rescue missions up to 250 NM (463 km). Stability and precision in hover flight with high power reserve.



## PUBLIC SERVICES

Ready for operations both day and night, with night-vision goggle capability.

Its performance levels and quiet sound footprint permit access to landing sites almost anywhere.





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Several configurations are being developed: offshore transportation, business and private aviation, public service, and commercial aviation.

# H160 Generation!

“The H160 helicopter marks a new chapter in Airbus Helicopters’ history. It is the tangible proof of the company’s transformation. This new helicopter wears the mark of the company’s change of identity, based in large part on the value of excellence imparted by Airbus. It is also the fruit of Airbus Helicopters’ company-wide transformation plan, which puts customers’ needs at the heart of its priorities. The first results have exceeded our ambitions, affirming our prediction that the H160 will be the reference for helicopters in the decades to come.”

Michel Polychroniadis, Executive Vice-President Medium and Heavy Programs

# “DESIGNED AND BUILT FOR CUSTOMERS”

## Interview with Bernard Fujarski, Director of the H160 program.

The H160 has opened a new chapter in the history of Airbus Helicopters. The entire design of this innovative new helicopter was based on one overriding goal: to create added value for our customers. The H160 was unveiled to the public at the HAI Heli-Expo trade show in Orlando, Florida. Rotor sat down with Bernard Fujarski to get a behind-the-scenes preview of the new program.

Article: Pascale Fleury – Photos: Jérôme Deulin



### Why the H160? What were you looking to accomplish?

**Bernard Fujarski:** The H160 will be the successor to the Dauphin/EC155 family. It will fill the slot in the Airbus Helicopters range between the EC145 and the EC175. The goal for the H160 can be summed up very simply: to create

added value for its customers in terms of performance, economic competitiveness, safety, comfort and respect for the environment. Customer expectations and a return on their experience have always been at the heart of our deliberations and choices. That's why early on, when making decisions concerning the helicopter's design and maintenance, we took note of our customers' opinions. Designed to carry up to 12 passengers within a radius of action of 120 nautical miles, this extremely versatile helicopter will be capable of a wide range of missions. Several different configurations are currently being developed: offshore transportation, business and private aviation, public services (EMS, law enforcement, surveillance, intervention, etc.), and commercial passenger transportation. Generally speaking, the progress we've already made on the program has confirmed that we can expect some ambitious results. New technologies will reduce not only its fuel consumption but also external sound levels. Among the most visible changes are the Blue Edge® rotor blades with double-swept tips that will be installed for the first time on a helicopter in our range. These slash the perceived sound levels in half compared with an EC155. The new blades and the inclined Fenestron® shrouded tail rotor—another first—will also improve the helicopter's performance in hover flight with a higher carrying capacity.

### Was the development program itself innovative as well?

**B. F.:** Our priorities for the development program

were very ambitious. We wanted to create a high-performance, economical helicopter that could ensure unprecedented levels of safety for our operators. But at the same time, it had to be easy to manufacture and easy for our customers to maintain. To obtain these goals, we re-engineered our setup. For the first time, we created an interdisciplinary team with staff from engineering, production and support. This had never been done before at Airbus Helicopters. Nearly 600 people are now working on the program at our plants in Donauwörth, La Courneuve and Marignane. This new setup uses concurrent engineering methodologies, enabling the different functions to share and consolidate their findings as the program progresses. In parallel, we've introduced new industrial processes that are more efficient, drawing largely on techniques used in the automotive industry. For the development work, we drew on the experience of Airbus and invested in two "Helicopter Zeros," called HCOs, which are identical to the "Aircraft 0" concept used at Airbus. The first one is called "System HCO" and has been fitted with all the electrical equipment of the actual helicopter. The second one, called "Dynamic HCO," is the one on which we perform ground tests on all the dynamic components—the engine, gearbox, rotors and blades. These new investments enable us to test the endurance of all the systems and ensure they've reached the highest possible level of maturity when they enter service, without having to wait until the prototypes are available. In this way, the prototypes can then be fully dedicated to flight testing.

### What are the next steps for the program?

**B. F.:** We have successfully completed the Power On, and in March, the first rotation of Dynamic HCO was performed on the new test bench. The first flight of PT1 is scheduled for this year, and I think it's safe to say that we'll be able to launch the commercialization phase from 2016. ■

**1 – Over 600 people are working on the program at the plants in Marignane, La Courneuve and Donauwörth.**

**2 – The H160 is the first helicopter equipped with the new Blue Edge® rotor blades with double-swept tips.**

**3 – Airbus Helicopters built on the experience of Airbus to develop a Helicopter zero concept capable of handling the ground tests for all the helicopter's dynamic components.**

“The H160 takes into account customers' expectations and will be the reference for the future.”



# MATURE FROM THE START

Right from the beginning of its development, the H160 was intended to make life easier for its operators. Maintenance operations, and how they could be tailored to every operational need, were taken into equal consideration from the outset.

Article: Belén Morant – Photos: Jérôme Deulin



**An optimized maintenance plan** – The new maintenance plan was defined in a joint effort with aviation authorities, the industry and operators, based on the MSG-3<sup>(1)</sup> method, which was originally used to create scheduled maintenance programs for airplanes. Airbus Helicopters first introduced this method for production of the EC175. With the new plan, operators will gain in efficiency and be able to optimize the availability of their fleets. Maintenance programs will also be better adapted to specific customer profiles, meaning better organization and scheduling for maintenance work. The maintenance programs for both the

helicopters and the engines have also been harmonized.

**A direct link between the helicopter's data and its use at the ground station**

Data management has been envisaged as a shared responsibility between the helicopter and an operator's ground station, which has direct access to technical documentation. As a result, airworthiness monitoring is greatly simplified.

**Customized 3D technical publications**

– The new-generation technical publications maximize the use of 3D technology, in which sophisticated visuals greatly enhance understanding. They will be available through the Keycopter portal.

**A family-based training concept** – Thanks to the Helionix<sup>®</sup> avionics suite integrated in the H160, training will be much quicker and easier for pilots who already have experience with other helicopters in the Airbus Helicopters range equipped with this same system: namely the EC175 and the EC145 T2. ■

“All the solutions to be delivered when the H160 enters service will have been tested ahead of time in actual operating conditions to ensure the highest levels of maturity from the outset, and any remaining limitations detected in the helicopter's components will undergo an accelerated maturity process.”

**Antoine Fleischmann,**  
H160 Support & Services  
Manager

<sup>(1)</sup>The MSG-3 method takes into account safety and financial aspects, operational needs, and the savings generated by scheduled maintenance in order to offer an optimized maintenance plan.



**NEW CANTED FENESTRON®**

Increases performance levels, adds to passenger comfort thanks to excellent flight stability, and permits community-friendly sound levels.

**BLUE EDGE® BLADES**

Increase performance levels, add to passenger comfort thanks to excellent flight stability, and permit community-friendly sound levels.

**NEW GENERATION TURBOSHAFT ENGINE**

More powerful than previous generation while reducing fuel consumption and CO<sub>2</sub> emissions.

**BIPLANE STABILIZER™**

Contributes to agility with improved performance and exceptional handling.

**ELECTRICAL LANDING GEAR**

Designed to allow more payload and helps to simplify aircraft maintenance.

**FULL COMPOSITE AIRFRAME**

Contributes to the robustness of the aircraft and lower maintenance.

# BREAKTHROUGH DESIGN... FOR GAME-CHANGING VALUE

Both cleaner and quieter, the H160 takes a step forward in respect for the environment.

Article: Belén Morant

See Rotor on line  
for more pictures  
[www.airbushelicopters.com](http://www.airbushelicopters.com)



# Ten million flight hours in Oil & Gas

**Airbus Helicopters and the petroleum industry go back a long way**, having forged a partnership based on unyielding commitment to technical excellence.

Article: Alexandre Marchand – Photos: Loretta Fabre



A big thanks to all our customers who helped celebrate this historic event.

Airbus Helicopters recently celebrated an historic moment. In late December 2014, the company's fleet surpassed the ten million flight hour milestone in the oil & gas sector, just a few hours after the first two EC175s were delivered to NHV. These two symbolic events added another page to the long history shared by Airbus Helicopters and the petroleum sector, which accounts for approximately fifteen percent of the company's revenues. But beyond economic considerations, the extremely high standards required in this sector have pushed Airbus Helicopters to make enormous technical progress. "We've now reached the end of an exceptionally long period of stable oil prices in the petroleum industry," said Christopher Grainger, Airbus Helicopters' Vice President - Oil and Gas. "However, we have to be very careful about drawing any conclusions from the current price fluctuations. Helicopter activities are mainly concentrated on production work in this sector, and should not be greatly affected by the current drop in prices (author's note: as of January 2015)." Another important area for development is support services, which require the same high levels of reliability, availability and safety as airline

companies. "Airbus Helicopters has made substantial investments in this area, in training activities in particular," added Mr. Grainger. "Thanks to the Customer Centers we've set up worldwide, we're reaping the benefits of our geographical proximity. After installing the first EC225 Full Flight Simulator (FFS) in Marignane, we've followed up with new FFSs in Aberdeen, Beijing and Kuala Lumpur, and another one will soon be following in Rio de Janeiro. These developments reflect the global nature of this particular market." To meet demand, Airbus Helicopters has a wide range of products to offer: lighter helicopters such as the EC135 and EC145, medium-lift models like the Dauphin and the EC155 families, and the EC225 in the eleven-ton class. The EC175 is also an excellent all-rounder, combining heavy-lift capabilities with the flexibility and reduced operating costs of a medium-lift helicopter. The EC175 was the result of close cooperation between Airbus Helicopters, operators and petroleum companies. "It was only recently that the petroleum industry became so closely involved in the design and operational aspects of our new models," added Grainger. "Our operators are delighted!" ■

"Thanks to the Customer Centers we've set up worldwide, we're reaping the benefits of our geographical proximity."

**Christopher Grainger,**  
Airbus Helicopters Vice  
President - Oil and Gas.





Since its creation 27 years ago, Aiut Alpin Dolomites has performed more than 8,000 missions in the Bolzano region of Italy.



### EC135 T3/P3

- 6/7 passengers and 1 pilot
- Maximum speed (VNE) of 259 km/h / 140 kts
- Maximum takeoff weight of 2,980 kg
- Maximum range at recommended cruise speed (without fuel reserve) 609 km / 329 NM.

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## Higher, further, stronger, safer

The new EC135 T3/P3 was recently selected by the operator Aiut Alpin Dolomites to perform rescue missions at altitudes of up to 4,000 meters, and its entry into service has been a resounding success.

Article: Eva Schaar – Photo: Charles Abarr

“What really sets this latest member of the EC135 family apart is its augmented performance,” said Raffael Kostner, who certainly knows what he’s talking about. Mr. Kostner is one of the co-founders of Aiut Alpin Dolomites, which has completed more than 8,000 missions in the Bolzano region of Italy since it was created 27 years ago. The rescue association performs approximately 700 missions per year. “We deploy at altitudes between 3,000 and 4,000 meters, often during the winter, to perform rescues in skiing areas and avalanche zones. We also fly up to glaciers to save climbers who have run into trouble. At high altitudes such as these, the power reserves offered by the EC135 have quickly proven to be a decisive factor for ensuring successful missions.” The new EC135 T3/P3 is stationed in Pontives, in the Val Gardena region, where it has taken over from the EC135 T2/P2 formerly operated by the association. “The increased carrying

capacity is another major advantage for our different types of missions, because we often take off with four or five people on board and a lot of equipment,” explained Kostner. “That way we can deploy to more than one location and complete several missions.” The EC135 T3/P3 offers a number of upgrades, including an elongated main rotor, new turboshaft engines, a cockpit with fully integrated avionics for navigation and communications, and Full Authority Digital Engine Control (FADEC). Among the most visible changes are the lateral air engine intakes, a more compact mini tail bumper, and new horizontal stabilizers. The T3/P3 is extremely economical, offering excellent endurance and a higher payload than all the other models in its class. The success of the T3/P3’s operational start-up bodes well for the helicopter’s future, in particular for surveillance missions and operations in both the public and private sectors. ■

UP ABOVE



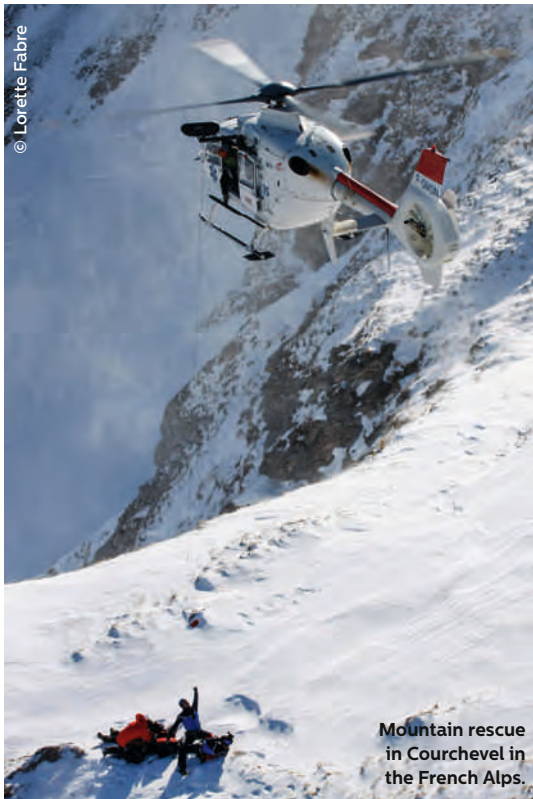
See Rotor on line  
for more pictures  
[www.airbushelicopters.com](http://www.airbushelicopters.com)



## Training in Corsica with the EC725

The EC725 carries out an in-flight refueling exercise with a C130 Hercule.

## IN ACTION



Christophe Rosset, President  
of SAF Helicopters.



# FRANCE “In line with market needs”

**Interview with Christophe Rosset,** President of SAF Helicopters.

Article: Monique Colonges

**You currently operate 44 Airbus Helicopters rotorcraft. What are their primary missions?**

**Christophe Rosset:** We use our EC135s for mountain rescues and emergency medical services, and our Ecureuil/AStars for aerial work and passenger transport. But we do much more than that. Through our subsidiary SAF Industries, we perform maintenance work on Airbus Helicopters products at our two certified maintenance centers in Albertville and Paris for both private and government customers. In cooperation with Thalès, we've also set up two flight simulators: one for the AS350 B3 Ecureuil/AStar and another for the EC135.

**Until recently, your fleet was made up of EC135s and Ecureuil/AStars, but in 2014 you purchased a previously-owned Super Puma. Why this new addition?**

**C.R.:** We often used to lease an AS332 C1 Super Puma from a company in Switzerland when we needed to carry heavier loads. After the company went out of business, we decided to buy the helicopter in mid-2014. It can carry sling loads of up to 4,500 kg, and we use it to transport ski lift equipment, air conditioning systems, antennas and much more. Our Super Puma flies throughout Europe. Believe it or not,

there are only three privately-owned Super Pumas on the entire continent (excluding the offshore sector).

**How would you rate the support you receive from Airbus Helicopters?**

**C.R.:** It's true that we did go through some difficult stretches in the past when we couldn't get our hands on critical spare parts. But those days are over.

We're very satisfied with the service we receive these days. We're in constant contact with the Airbus Helicopters teams, which enables us to anticipate needs and avoid crisis situations. However, I do think there's one area that needs to be improved: The cost of training for our mechanics is still too high. This training is vital because our mechanics must know the helicopter inside and out if we want to keep availability rates as high as possible. The higher the availability rate, the higher the customer satisfaction. In the end, it's a win-win situation for everybody.

**In your opinion, what points should manufacturers focus on when designing the helicopter of the future?**

**C.R.:** We've already given a great deal of thought to this, and have come up with several criteria that would define the ideal helicopter. It would have to be light-weight, robust, easy to maintain, quiet, multifunctional, and extremely fuel efficient. Added to that, it would need to come with reduced operating costs and, above all, a price in line with market needs. This last point is an absolute must because if the helicopter becomes too pricey for our customers we'll start to lose contracts, and at some point the market might disappear altogether. ■

## Identity Card

**Name:**  
**SAF Helicopters**

**Established:**  
**1979**

**President:**  
**Christophe Rosset**

**Bases:**  
**Albertville (main office), Paris**

**Fleet:**  
**AS350 B2/B3,  
AS355 N Ecureuil/  
AStar; EC135 T1/  
T2, AS332 C1  
Super Puma**

# A growing demand

**China is the second biggest civil helicopter market in the world,**

and is expected to take the top spot by the end of the decade.

Helicopters already carry out a range of missions here. The country's airspace aims to open up to general aviation, and opportunities are increasingly numerous, especially for medical support and private operators. Read on to find out more about the Airbus Helicopters rotorcraft in action across China.

Article: Eva Schaar

## AERIAL MONITORING AT 5,000 METERS

Hubei Tongcheng (HTC), headquartered in Jingzhou (Hubei province) and one of the most successful private operators in China, prizes its fleet of six AS350 aircraft for their ability to undertake all kinds of missions. The single-engine helicopters have proven particularly valuable in China's mountainous northwest, where they are regularly employed at altitudes of up to 5,000 meters for aerial land survey work. However, they are also used for missions ranging from the monitoring of power lines to firefighting and agricultural work. "The AS350 is the best single-engine utility helicopter I know — including for economy. It's an excellent helicopter that performs particularly well in high and hot conditions," says Xu Guoging, General Manager at HTC. "We even get inquiries about the aircraft from our clients, since it's so fast and reliable at doing its job. We'll definitely be expanding our AS350 fleet."

## RESCUING RALLY DRIVERS FROM THE DESERT

Kingho General Aviation operates three EC135s and one AS350 B3 in the sparsely populated expanses of Inner Mongolia. It is the only operator approved to perform rescue missions in the region. The helicopters have proven their capabilities many times over in emergency situations, transporting patients to specialist hospitals. Following a mining accident in the region in early 2014, for instance, they were able to quickly deliver rescue

workers and aid to the scene, providing valuable assistance in helping the injured. In the autumn of 2013, Kingho's EC135s were called upon to assist in a two-day operation to locate and evacuate rally drivers stranded during a race through the Tengger Desert.

## SUPER PUMAS WORKING WITHOUT LETUP FOR THE OIL & GAS INDUSTRY

A total of 32 helicopters in the Super Puma family operate in China, mostly used for transportation to offshore platforms and for search and rescue missions. The biggest name in the segment is CITIC Offshore Helicopters (COHC), which alone operates fifteen Super Pumas in addition to sixteen Dauphin aircraft.

## FIRST AID FROM THE SKIES

In fall 2014, the first rescue helicopter in China to feature the full range of medical equipment was handed over to the Beijing 999 Emergency Rescue Center, a subsidiary of the Chinese Red Cross headquartered in Beijing. This was the beginning of a new chapter in air rescue for the country. The EC135s are integrated into the existing rescue system — along with other aircraft ordered — and provide life-saving assistance in emergency situations. The EC135, designed in close cooperation with professionals from the medical sector, is perfectly suited to answer the huge needs of emergency medical services in China. In the next decade, at least 200 EMS helicopters are expected to be at work in the country. ■

**1 – The biggest provider in the Oil & Gas segment in China is CITIC Offshore Helicopters (COHC).**

**2 – The single-engine helicopters have proven to be particularly valuable in China for aerial work at high altitudes.**

**3 – “We started to see the benefits of the progressive opening up of airspace in our 2014 results and this will be – in the near future – a source of further opportunities,”**  
says Ducrot.

“The wide range of missions undertaken by our customers in China are a testament to the valuable services that helicopters can provide to the population. Thanks to the close-knit network we have established in China, we are ideally placed to assist operators.”

**Norbert Ducrot,**  
CEO of Airbus Helicopters China



# Change is in the air!

**As part of its corporate transformation plan,** Airbus Helicopters continues to make sweeping changes to improve customer services. Below, Rotor takes a look at some of the latest initiatives implemented by Support and Services teams.

Article: Monique Colonges



Three-year warranty or 2,000 flight hours.

## 1 Warranty

Airbus Helicopters has changed the terms of its warranties. As of January 1, 2015, the warranty for all new helicopters has been extended to three years or 2,000 flight hours. What's more, all labor costs are covered by the warranty for the first year. "These are the best warranty conditions in the entire helicopter industry," said Matthieu Louvot, Senior Vice President of Support & Services at Airbus Helicopters. "They show how confident we are in the quality of our products, and have vaulted us into pole position with respect to our competitors' warranty policies." ■

## 2 Spare Parts

In two years, Airbus Helicopters has slashed the number of late spare parts deliveries in half. Today, 98 percent of scheduled orders arrive on time to the customer. This notable improvement was made possible by increasing our spare parts inventory (at a cost of 100 million euros), in particular for the most frequently ordered parts, and by implementing a worldwide parts management system. These efforts will be continuing throughout 2015 to improve our logistics performance even further. In addition, Airbus Helicopters has launched a major work project to improve the quality of its parts pricing policy. Prices for parts from the same family will now be more consistent, and the number of parts with no catalogue price will be reduced. ■







# 3

## Overhaul and Repair

Two new services were introduced last fall for overhaul and repair work. The first service concerns part repairs. Customers are now guaranteed to receive their part by the date that was indicated when they placed their order — no matter what. If the part could not be repaired on time, Airbus Helicopters will perform a standard replacement. This new policy concerns more than 600 parts from the Dauphin

and Super Puma families. Customers will enjoy greater visibility of the process and less stress when managing fleet maintenance. The second service will be increasing fleet availability by offering immediate standard replacements. This is currently being offered for 200 parts in the Ecureuil family, and will be extended to the EC135, EC145, dynamic components, and blades during the current year. ■

Parts repair service concerns more than 600 parts from the Dauphin and Super Puma families.

# 4

## Technical Support

Airbus Helicopters has reorganized its internal infrastructure. All our customers' technical questions, from the most basic to the most complex, will be answered more rapidly and efficiently. Customers can contact our assistance center day or night, wherever they may be around the globe. The Technical Request Management service is available on the Keycopter portal 24 hours a day, seven days a week, where customers can also track the status of their requests. ■



Technical assistance available 24 hours a day, seven days a week.

## ENCOUNTER

### VITTORIO MORASSI

Vittorio Morassi attended the Italian Air Force Academy before earning his university degree in 1972. During his career, he was Chief of the International Programs Office of the MoD Rome, and Sr. National Representative for the Tornado and Eurofighter Programs. He holds the rank of Colonel in the Air Force. Today, he is President and CEO of Helicopters Italia S.r.l. and Air Corporate S.r.l. Dr. Morassi is Chairman of the European Helicopter Association, and Chairman of the National Helicopter Association Committee.



# “Operators expect better support from manufacturers”

**Rotor Magazine recently spoke with Vittorio Morassi**, Chairman of the European Helicopter Association (EHA). Here is what he had to say about the needs and expectations of helicopter operators in Europe.

Interviewed by: Belén Morant

## What is the role of the European Helicopter Association?

**Vittorio Morassi:** The main role of the EHA is to be the voice of rotorcraft operators to bring forward their needs and expectations to European Union (EU) authorities, institutions and public opinion, as well as to raise awareness of the helicopter's role in a modern society. Safety remains priority one and the EHA has always been involved in European and international safety initiatives. At the same time, one of the main goals of the Association is to get a set of tailored, sensible and affordable rules.

To this end, the EHA has endeavored to play an active part in the rule-making process by being represented within the European Aviation Safety Agency (EASA) at all levels. One important result is that the EASA has now established a Rotorcraft Department within their new structure.

The EHA is also dealing with the ICAO, the European Union Commission, the European Parliament, and EU General Directorates. Major achievements include the possibility to continue single-engine operations over hostile environments, the definition of what

constitutes complex aircraft, affordable inclusion of helicopters in the EU Emissions Trading System (EU ETS), and helicopters' derogation from the standards of civil aviation security.

## In your opinion, what improvements could be instituted to make helicopter flight in Europe safer? What role do helicopter manufacturers play in improving flight safety?

**V. M.:** By far, human factor plays a major role in helicopter accidents. Therefore, it's vital to continue, and to expand, all the efforts in place for extensive crew training, the use of advanced flight simulators, and the sharing of best practices.

In aerial work and the HEMS sectors, the lack of national legislation aimed at providing better visibility with regard to wires and power lines, is one of the contributing factors in accidents, especially in mountain environments. In offshore operations, survivability in case of ditching is under consideration by manufacturers, operators and regulators. Manufacturers should continue

their efforts to provide user-friendly and ergonomic cockpits, new technologies to detect obstacles during low-level flights, easier maintenance checks, flight and maintenance data collection and analysis. The perfect helicopter would be environmentally friendly, easy to fly and to maintain.

## What are the needs and expectations that European helicopter operators have toward authorities?

### What are they toward helicopter manufacturers?

**V. M.:** Operators expect better support in terms of reliability, spares availability, efficient customer service and reduction in training costs. Additionally, they would like the safety equipment to be part of the helicopter's baseline without an increase in cost.

Finally, we strongly underline the need for an officially recognized helicopter database to support regulatory decisions, which should be taken on data and facts and not on perceptions, and we call upon manufacturers to support this important activity. ■

# A partnership for safety

Airbus Helicopters launched a program named the Airbus Helicopters Safety Partnership in October 2013 in order to improve, through collaboration with its partners, the whole of its company-wide safety initiatives, and to excel in the field of aviation safety.

Article: Regina Lange

## THREE AREAS OF ACTION

Airbus Helicopters has always worked closely with its partners in the helicopter industry – including operators, end users, authorities, the accident investigation board and others – to improve aviation safety. Indeed, Airbus Helicopters has been playing a key role in the IHST (International Helicopter Safety Team) since its set-up in 2006. And going one step further, in 2013 the company launched the Airbus Helicopters Safety Partnership.

If the partnership's initial focus was on offshore missions in the North Sea and on the Super Puma family, the program now extends more globally, involving other missions and helicopter ranges. To ease communication and management within the program, Airbus Helicopters Safety Partnership initiatives are categorized into three areas of action: **configuration (01)**, **flight operations (02)**, and **maintenance (03)**.



### 01

#### CONFIGURATION

The aim of configuration-related initiatives is to apply capabilities related to safety. This includes proposing and promoting configuration changes which go beyond regulatory requirements for continuing airworthiness. They are designed to: enhance survivability; incorporate the cockpit image, sound and GPS recorder (Vision 1000) into all aircraft that are being rolled-out in 2015 new deliveries (for incidents/accident investigation and flight data monitoring purposes); develop the automatic approach capability for the EC225 in 2015; and promote standardization of safety-related capabilities like the HTAWS (Helicopter Terrain Awareness and Warning System). ■



## 02

### FLIGHT OPERATIONS

The aim of initiatives related to flight operations is to strengthen the link between Airbus Helicopters and operators to baseline best practices in training and the use of automation. Objectives include holding regular pilot seminars to share best practices in flight operations and training; and harmonizing and standardizing pilot type ratings, as well as recurrent and conversion to role training. **The best example of this avenue has been the creation of a Flight Crew Operations Manual (FCOM) – a first of its kind for helicopters – drawn up by Airbus Helicopters for all EC225 helicopters mainly in order to give operational recommendations in the use of automation technology. ■**

## SAFETY PARTNERSHIP

The name **Safety Partnership** underlines on the one hand the need for collaboration to improve standards for flight safety, and on the other, the similar role played by operators. In principle, the partnership joins the activities of the Joint Operators Review (JOR) which initially encompassed Avincis, CHC, and Bristow, but which has now grown to include other offshore operators, like ERA or PHI, through the efforts of HeliOffshore. The Safety Partnership also complements the work of British aeronautics authorities toward the safety of offshore helicopter transport in the frame of CAP1145.

The objective of this communication is to heighten awareness of this safety-focused partnership and efforts in particular by Airbus Helicopters and operators to improve safety. Lastly, Airbus Helicopters uses operators' experiences to further improve helicopters and their services.



## 03

### MAINTENANCE

The aim of maintenance-related initiatives is to strengthen the link between Airbus Helicopters and operators to standardize best practices in maintenance. These initiatives include: providing maintenance mentors in Aberdeen, Scotland; and holding regular maintenance seminars to share lessons learned and best practices, as well as to exchange about the use of Airbus Helicopters' Health and Usage Monitoring System (HUMS) – the first maintenance and HUMS seminars were held in November 2014. ■

# Indonesia full speed ahead

With more than 40 percent market share and forty years-plus cooperation with Indonesia, Airbus Helicopters has widely invested in the country and its industry. The company's leadership position should only get stronger in the coming years with the region's growing needs.

Article: Eva Schaar



© PTDI

## PTDI: A LONG-LASTING FRIENDSHIP

It all began some 40 years ago, when PT Dirgantara Indonesia (PTDI) started producing BO105s, then Puma and Super Puma under license. Since then, the partnership between Airbus Helicopters and PTDI has expanded to include over 180 helicopters, including EC725, Fennec, Squirrel, Dauphin, Panther and even the latest AS332 C1e. Since 2008, PTDI has even been qualified as a worldwide supplier of airframe parts and tail booms for the EC225/EC725. This win-win partnership is built on a long-lasting trust, as PTDI serves as the major customization and completion center for most of the Airbus Helicopters aircraft delivered to the Indonesian government.

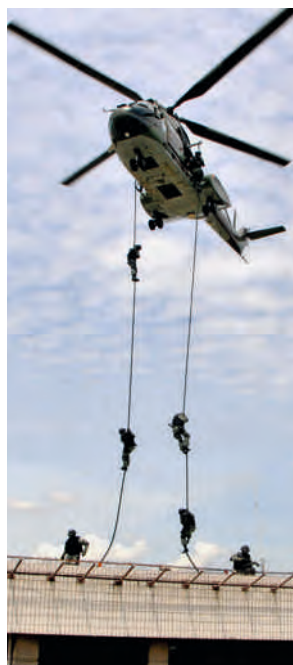


**Budi Santoso, President PTDI:**  
"The cooperation between Airbus Helicopters and PT Dirgantara

Indonesia brings huge value to our industry. Beyond production, delivery of helicopters and support for the fleet, it is aligned with our responsibilities to develop defence systems locally and to increase the country's defense capabilities."



The Dauphin AS365 takes off for a search and rescue mission.



## LARGEST FLEET IN ASEAN

Indonesia's booming economy is at the cornerstone of the country's modernization of its infrastructure, security means and defence assets. The Indonesian Armed Forces already operate a large fleet of Airbus Helicopters rotorcraft, from the EC120, Fennec, Puma, and Super Puma up to the EC725, including legacy helicopters such as the BO105. At present, they are investing in the modernization of their fleet. Since 2012, the Forces' latest acquisitions are the Fennec, used by the Indonesian Army for attack missions; the EC725, which the Air Force employs in combat search and rescue (CSAR); the AS365 N3+ Dauphin for the country's SAR agency; and most recently, the AS565 MBe Panther for the Navy's missions in anti-submarine warfare (ASW). These helicopters are all prepared, completed and customized by PTDI, who even develop advanced mission equipment such as an ASW suite.



**Pierre André, Key Account Manager:**  
"Helicopters play a major role in supporting the Indonesian government's sovereignty throughout the archipelago, especially at sea. We are dedicated to offering innovative and cost-effective solutions – with PTDI – for the benefit of both Indonesian industry and its armed forces."

© PTDI

The Indonesian army relies on a large fleet of Airbus Helicopters rotorcraft, among them several Pumas.



At work in the maintenance center.

## SAFETY NEXT DOOR

Airbus Helicopters Indonesia already provides a full scope of services at the highest standards of safety and quality for an in-country maintenance provider, and offers increased operational availability to governmental and private operators. In cooperation with PTDI, Airbus Helicopters Indonesia continues to improve these maintenance, repair and overhaul capabilities.



**Ludovic Boistot, Managing Director:**

“Airbus Helicopters Indonesia is the only Part 145 Helicopter

Maintenance Center owned by a foreign OEM in Indonesia. And we are jointly developing strategic capabilities with PTDI to reach the highest service level expected by Indonesian operators.”

### Airbus Helicopters Indonesia:

**Location:**  
Jakarta

**Employees:**  
30 people

**Hangar Capability:**  
8 Helicopter slots for turnkey services

**Fleet:**  
300 rotorcraft

## BOOMING PRIVATE MARKET

Helicopters are a major asset for public services and commercial operations in the vast Indonesian archipelago. Airbus Helicopters supports the region’s operators with versatile rotorcraft tailored to their growing needs, including for air ambulance services, firefighting or aerial work operations. Private and business aviation is growing steadily, and has huge potential considering the future needs of infrastructure. And a new star will shine soon in the Indonesian sky: the elegant EC145 T2 Mercedes-Benz style version, conceived in cooperation with the renowned automobile brand--and the very first order of its kind in the world.



**Edwin Widjaja, CEO - Komala Indonesia:**

“Crucial factors for success in our business are safety, reliability and optimal availability of our helicopters. We are observing lately a significant transformation of Airbus Helicopters in Indonesia in that the support they provide to operators is more local and more reactive to our needs.”



Commercial aviation has enormous potential in the region.

© Komala Indonesia

# Two NH90 Caïman arrive in African skies

France has deployed two NH90 Caïman helicopters as part of operation Barkhane in Mali. After having flown 5,000 kilometers to reach the theater of operations, the helicopters and their flight crews are now ready for combat.

Article and photos: Alexandre Marchand

Flying 50 feet (15 meters) above the ground and at a speed of 140 kts (259 km/h), the two Caïmans follow a 045 heading towards Gao, in northeastern Mali. The rainy season has ended and the banks of the Niger river, dotted here and there by small fishing villages, are once again covered in green. The local inhabitants wave enthusiastically as the helicopters fly by, welcoming the new arrivals of the French Army to their country.

This flight over the Niger was the final stage in a long process that began some ten months earlier, well north of Mali. As the last hours of December 2013 were ticking away, the 1st Combat Helicopter Regiment (RHC) of Phalsbourg officially took possession of its first two tactical transport helicopters. The ensuing technical-operational and tactical tests fully demonstrated the worth of the helicopter, which was then officially "adopted." During the summer of 2014, the French Army performed technical reviews, before approving the deployment of a two-helicopter unit to Mali. It was also decided that the helicopters would fly on their own to the theater of operations. The French Army Light Aviation (ALAT) had complete confidence in the maturity of the helicopters, as their performance had proven that long flight stages could be authorized. A trip between the Canary Islands and Mauritania, for example, included three hours of uninterrupted flight over the ocean.

## **SPEED, ENDURANCE AND TECHNICAL RELIABILITY**

"With three 450 kg ferry fuel tanks in addition to the two tons of fuel carried in the internal tanks, the helicopter has an endurance of nearly five hours, even with a take-off weight of eleven tons," reported the flight crew. "That's unheard of for a helicopter in this class!" The ferry flights were broken down into ten stages, including over Spain, Morocco and Mauritania. When the helicopters reached Senegal, they set down in Dakar and the maritime

survival equipment was removed. The helicopters also received their weapons systems and ammunition during this stop, as they would be reaching their final destination the following day: Gao, in the combat zone. After nine hours of flight and two stops along the way in Kayes and Bamako for refueling, the long journey was finally over. On Monday, November 3 at 5 p.m. the two helicopters reached their final destination, after having traveled more than 5,000 kilometers and completing just over thirty hours of flight. Both Caïmans completed the journey without a hitch. It was time for the helicopters and their crews to become acclimated to their new theater of operations. The dark green forests they'd left behind in France were a distant memory. Now, they would be confronting the red, swirling sands of the Sahel. In Gao, you take off and land in dust, fly in dust, and sleep in dust... This was the first challenge to be overcome by the Caïman crews.

The extremely fine sand gets into everything and can quickly eat away at the engines and rotor blades. But the helicopters had been carefully prepared for their new environment, with special seals for the fairings, additional filters, and innovative solutions to protect the leading edges on the blades. The four flight engineers who travelled to Gao with the two helicopters take no risks: the dynamic components are carefully inspected after each flight. The second challenge is the Caïmans' new military mission. The NH90 has already been deployed by Germany and Italy in Afghanistan for support missions, but in Mali, the ALAT will be doing even more. For the first time, the NH90 is being asked to perform combat missions instead of tactical transport. The Caïmans, which have taken over from the Pumas formerly deployed in the theater of operations, are now working in cooperation with Tiger combat helicopters as a strike force. They're ready to go. ■

**1 - Insignia of the Barkhane operation.**

**2 - At the end of their ferry flight, the Caïmans fly along the extraordinary mountains of the Dogon region.**

**3 - The Caïman's modern avionics ensure safety and efficiency.**


**4 - The flight engineers are the key to ensuring the helicopters' availability.**

**5 - To protect the helicopters from the harsh environment in Gao, they are placed in tents that also serve as workshops.**

**6 - The range of the Caïman and the reliability of its avionics are major assets for carrying out operations in the vast Sahel region.**





**NH90** 

- Average speed: 130 knots (241 km/h)
- Endurance: 5 hours of flight with ferry tanks installed in the cabin.
- Payload: 20 soldiers or 2.5 tons of cargo



# Saving Rhinos with Helicopters

Helicopters are called on to perform almost every type of mission imaginable. In South Africa, for example, rotorcraft are being used to rescue rhinoceros calves after their mothers have succumbed to poachers.

Article: Régis Noyé



“The AS350 B3 and B3e are particularly well-suited for this type of mission. They offer excellent power and performance, and their perfectly flat cabin floor and sliding doors are also great advantages.”

**Grant Knight, chief pilot of SANParks in charge of special missions**

### Extensive program of relocation

Much like the elephant, the rhinoceros is highly prized on the black market for its horn. This is the reason the management board of the South African Natural Parks (SANParks) — a vast network of nature reserves protecting the country’s fauna and flora, and a major tourist attraction — has launched an important program to remove rhinoceroses from danger. The animals are moved from poaching “hotspots” to protection zones both inside and outside the parks. The plan will encompass all nineteen of South Africa’s natural parks; hundreds of animals will be relocated.

### Transport by sling

“The rhino calf is immobilized with veterinary drugs and once it stops running, we land as close as possible to the animal,” explains Grant Knight, SANParks chief pilot. “Smaller animals may be placed in the helicopter’s cabin, but the majority are carried in a sling. The eyes and ears are bound with bandages to minimize stimuli. On the lower part of each leg, a soft strap is looped for transport, and a fifth strap is looped around the head for support only; all the straps are then brought together at the sling hook, which is a seven meter length strap with a swivel. The animal can finally be carried upside-down as is.”

## AS350 B3e



- **Capacity:**  
1 pilot + 5 passengers
- **Cruise speed:**  
258 km/h / 140 kts
- **Endurance:**  
4 hours 23 minutes
- **Maximum takeoff weight:**  
2,250 kg



### Special care

Of course, a great deal of precaution must be taken for these types of flights. After several detailed checks, the load meter is used to assess the weight of the animal along with a hover power check at initial lift of the load. Most flights are performed at an altitude of approximately 300 feet and a speed of 40 kts, depending on the animal's behavior. The cabin door remains open during the flight so that the veterinarian can monitor the animal's response to the flight.

### Prepared for emergencies

After being caught, adults are normally transferred by trucks. But sometimes it may happen that a mother rhino has succumbed to poachers, creating an emergency situation for its small calf. In this case, and within the weight limit of 600 kg, helicopters serve as the unique solution for the calf's survival: after being airlifted to a special zone, veterinarians and a dedicated team can take care of the animal.

### The AS350 B3 and B3e: Perfect partners

"The AS350 B3 and B3e are particularly well-suited for this type of mission. They offer excellent power and performance, and their perfectly flat cabin floor and sliding doors are also great advantages," adds Knight. SANParks already operates three Ecureuils, with a fourth scheduled for delivery this year. The entire fleet is based at Skukuza, the main rest camp at Kruger National Park, but is operated throughout all of South Africa's national parks. The operations are normally grouped together so that a deployment is a few weeks of work. SANParks operates its own maintenance facility in Skukuza.

The Ecureuils each perform approximately 650 flight hours per year on a wide variety of missions, such as aiding wild animals, taking censuses, and protecting the local fauna from poachers.

# THINK OIL & GAS

The rugged and reliable Airbus Helicopters' range is put to the test transporting crews safely to and from assignments. Enduring extreme heat and freezing weather conditions to reach offshore rigs and wells in remote land-based locations.

**Discover an EC175**

