

MAGAZINE

ROTOR

THE WORLD OF HELICOPTERS BY AIRBUS HELICOPTERS - N°99 - NOVEMBER 2014



RENEWABLE ENERGY

PROMISING HORIZONS

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OUR TRANSFORMATION IS GATHERING PACE

Designed to guarantee the satisfaction of our customers, our transformation plan is gathering pace. Actions have been implemented in every area of the company and are starting to pay dividends, as you yourselves have been telling us, which gives us all the encouragement we need to continue on this path.

Our programs are moving forward. The first deliveries of the EC145 T2 were made this summer, and the first EC175s are about to follow suit. This helicopter has undergone its final full-scale tests in the North Sea, which were conclusive and point to its successful entry into service. In addition, the T3/P3 version of the new EC135 has just been certified and will deliver the most competitive operating costs in its category.

As for governmental programs, the ramp-up in NH90 deliveries continues, with the aircraft revealing more and more of its capabilities, while the Tiger is successfully performing its missions in Africa despite extremely testing conditions. Nevertheless, we are continuing with our efforts to ensure that both aircraft attain the necessary standards of excellence.

We are also making improvements throughout our industrial chain in order to supply you with ever more reliable and competitive helicopters. We have made significant investments in support and service activities, particularly in spares and replacement parts, all with the aim of guaranteeing maximum availability of your aircraft. Innovation is an integral part of the culture at Airbus Helicopters and we must ensure it generates added value for you. Now headed up by Tomasz Krysinzky, our R&D programs are centered on new solutions that are simple and affordable, both in terms of rolling them out and in their operability.

We embarked on our transformation plan last January and it is now at the core of each and every one of our actions. Our determination to achieve our objectives is growing by the day, because this is a transformation designed with you in mind.

Guillaume Faury



© Bond



© INAER



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GERMANY

EASA CERTIFICATION FOR EC135 T3/P3

The type certificate for the T3/P3 version of the EC135 was issued by the European Aviation Safety Agency (EASA) on October 20. Compared with its predecessors, the EC135 T3/P3 has a higher payload capacity under hot/high conditions—an additional 200 kg—and more power when operating at sea level. Its one-engine-inoperative performance permits it to carry up to 70kg heavier payloads in CAT operations.

Like all earlier versions of the EC135, the new aircraft delivers the best operating costs in its category. An upgrade option is also offered to customers who wish to benefit from the new technology of the EC135 T3/P3 for their existing aircraft.

To date, the 1200 or so EC135s delivered to customers around the world have clocked up nearly three million flight hours.



© Charles Abarr



© Marina Mexico

MEXICO

TWO EC725s PARTICIPATE IN HUMANITARIAN MISSION

When hurricane Odile swept across Mexico, with winds blowing at 185 km/h, it left hundreds of thousands of people in the peninsula of Baja California without water, electricity and telephone. The Mexican Navy responded by launching its emergency relief plan (Plan Marina) and deployed two of its EC725s to distribute food and water, as well as helped to evacuate victims in the worst-hit areas. On average, each of the two EC725s that took part in this humanitarian mission, which lasted from September 18 to October 6, remained in the air for four hours each day.

GERMANY

GERMAN AIR RESCUE ORGANIZATION TAKES DELIVERY OF FIRST EC145 T2

© Charles Aharr



The very first EC145 T2 was delivered in July 2014, to German air rescue organization DRF Luftrettung, only a few weeks after its certification by the European Aviation Safety Agency (EASA). To date, more than 100 orders have been placed for this aircraft, which is designed and assembled in Donauwörth and is available in law enforcement, executive travel, personnel transportation, and offshore versions. Twenty or so of these helicopters are scheduled for delivery between now and the end of 2014.

ROMANIA

AN ONGOING RELATIONSHIP

The Romanian government, represented by Prime Minister Victor Viorel Ponta, has signed a memorandum of understanding (MOU) with Airbus Helicopters, paving the way for further growth of the company's manufacturing capacity in Romania for the Super Puma MK1.

A forty-year partnership joins Airbus Helicopters and Romania through a joint venture with the state-owned Industria Aeronautică Română based in Brasov, which develops solutions for the maintenance and further development of the Puma.



© Paul Cordwell

POLAND

**MSPO DEFENSE EXHIBITION: EC725
AND TIGER TAKE CENTER STAGE**



© Amélie Laurin

Together with other members of the Airbus Group, Airbus Helicopters participated in the 22nd International Defense Industry Exhibition MSPO, which took place in September in Kielce, Poland. Highlights of the show were the EC725 and the first appearance in Poland of the HAD support and suppression version of the Tiger attack helicopter, both of which form part of bids currently being evaluated by the Polish government. Visitors to the show had the opportunity to learn about the French armed forces' experience with these two aircraft, which between them have accumulated more than 58,000 flight hours in many theaters of operation including Afghanistan, Lebanon, Libya, Chad, and Mali.

SINGAPORE

SAFETY FIRST

CHC and Airbus Helicopters South East Asia (AHSEA) joined forces as co-sponsors of the inaugural steering committee meeting of the ASEAN Helicopter Safety Team (AHEST). The aim of this association is to initiate actions to improve safety in civil helicopter operations in the region. The AHEST meeting, held on June 5 at Airbus Helicopters Southeast Asia headquarters in Singapore, was attended by 15 participants representing helicopter manufacturers, operators, regulators and customers.



© Airbus Helicopters South East Asia

A FIRST FOR THE EC175!

Article
JULIEN DUBOELLE

To prepare for the upcoming delivery of the EC175, the crews of NHV and Airbus Helicopters performed a wide range of tests together last May. The testing was conducted out of the North Sea, one of the next playing fields of the helicopter once it enters service.

FULL-SCALE TESTING IN THE NORTH SEA WITH NHV



The EC175's new Helionix® avionics suite offers pilots an intuitive man-machine interface.



The EC175 was first conceived for the oil and gas industry, in order to transport crews to offshore platforms.



Pilots were impressed with the helicopter's performance.

It's hardly a coincidence that the testing was performed in Belgium, as the country is home to a world-renowned specialist in helicopter transport, NHV. The company, whose fleet already includes EC145, EC155, AS332, and AS365 helicopters, is active in the oil and gas sector in the North Sea and in West Africa, where it shuttles crews back and forth to offshore platforms. NHV also offers a wide range of maritime services, and performs air ambulance and emergency rescue missions.

William Pyfferoen, the EC175 Project Manager at NHV, talked about the importance of the EC175 for the company: "We're very excited to be one of the launch customers for the new helicopter, and we're ready to take on the challenge. The acquisition of the EC175 is right in line with our strategy to own and operate a modern fleet that makes use of cutting-edge technology."

This joint testing campaign gave several NHV pilots the opportunity to make their first

forays over the North Sea with the EC175 in difficult flight conditions. All were impressed by the flight capabilities of the new helicopter and its revolutionary new avionics. Even in extremely harsh conditions, the aircraft's capabilities imparted a palpable sense of safety and excellent comfort levels. To test the product's maturity, Airbus Helicopters pilots then conducted an additional campaign in the driving rain over heavy seas. Visibility conditions were particularly bad, but once again, safety was never an issue.

The flight engineers at NHV also took part in all the maintenance and inspection operations. Not a stone was left unturned: pre- and post-flight visual inspections, simulation of 50-hour and 100-hour scheduled maintenance work, downloading aircraft data to the ground maintenance station, using and understanding technical documentation, and familiarization with diagnostic tools were covered in detail. The NHV teams also shared their own expe-

riences with Airbus Helicopters personnel and talked about their specific needs.

William Pyfferoen and the NHV crews were very satisfied with the experience: "All the pilots were impressed by how well the helicopter performed. They're convinced that the EC175 opens new perspectives, as it will enable NHV to operate in complete safety in the difficult conditions that we encounter on a regular basis—in particular for offshore type missions. This was the first time that NHV personnel were able to participate in the gradual entry into service of a new helicopter. We were able to ask all sorts of questions and have already anticipated some of the issues we may encounter further down the road. The NHV and Airbus Helicopters crews also got to know each other, which makes cooperation that much easier. I think the testing sent a very positive message to our employees, and everyone at NHV is ready for the new helicopter's entry into service in the coming months."



© Amélie Laurin

The latest member of the Airbus Helicopters range, the EC175 will be entering service before the end of 2014.

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RENEWABLE ENERGY **PROMISING HORIZONS**

Article: **BELÉN MORANT AND ALEXANDRE MARCHAND**

Renewable energy is by definition endless. The various types of renewables offer infinite possibilities, but humankind is not yet capable of controlling their output, nor of exploiting them efficiently.

And yet global energy consumption has doubled over the past forty years; at this rate, our oil reserves are likely to run out in less than sixty years, and our gas reserves will last for little more than a century. As things stand today, we don't really

have any other option than to look for new forms of energy—and the helicopter could turn out to be a very efficient means of exploiting these resources intelligently.

Wind, geothermal energy, hydroelectricity, and tidal power are just a few of the many solutions to our energy needs. Having already shown how useful it can be in a variety of scenarios, the helicopter has a promising future in an evolving market. A few examples are detailed below.



“THE RENEWABLE ENERGY SECTOR IS ATTRACTIVE TO NEW INVESTORS”

Marie C. Donnelly heads the Directorate for Renewables, Research and Innovation, and Energy Efficiency at the European Commission’s DG Energy. Here she presents her vision of the renewable energy market in Europe.

“According to the RES Directive (2009/28/CE), sources of renewable energy include wind, solar (photovoltaic - PV), biomass and sustainable biofuel, biogas, hydro-electric and geothermal energy. Currently, as far as electricity production in Europe is concerned, onshore wind power is especially competitive and the cost of photovoltaic (PV) electricity has dropped considerably due to economies of scale and innovation – a trend that can be expected to continue in the near future. Another important aspect is the active participation of electricity users, in particular through the use of smart metering and other systems permitting demand-side energy management.

The days of power monopolies and vertically integrated utilities are over. Liberalization has opened up the energy market to new players offering new products and services, shaking up the existing structures in the process. Even more far-reaching changes will be necessary to meet the targets set for 2020 and the longer-range objectives for 2050, because the energy sector has traditionally been based on centralized electricity production by companies with a strong cash flow and a diversified range of activities. New investors are primarily interested in the renewable energy sector, which requires an entirely different approach. At present, the main focus is on electricity generation and heating.

Our energy supply system can expect to see an increase in the number of decentralized production facilities serving local needs – ranging from photovoltaic arrays installed by individual households and wind turbines erected on the outskirts of towns and villages, to smart distribution networks for these alternative energy resources.

“Renewables could account for 20% of total energy consumption by 2020, particularly in the transportation sector, where we aim to reach a penetration of 10%.”

In 2012, 11% of our gross national consumption was provided by renewable sources of energy, a figure that has more than doubled since 1990. We are well on the way to achieving our goal of 20% renewables by 2020, and aim to increase this to 27% by 2030.

The results are encouraging and make us all the more determined to persevere with our efforts. In the years to come, new solutions and technological developments will help us to make further significant progress.”



READ THE FULL INTERVIEW WITH MARIE C. DONNELLY IN ROTOR ONLINE www.airbushelicopters.com



OPENING UP NEW SOURCES OF ENERGY

There is immense scope for harvesting energy from a multitude of sources. In many cases, the helicopter can play an essential role.

There are sources of energy everywhere we look, but exploiting and storing this energy is still a major challenge. Certain of these so-called clean energy resources have seen unprecedented growth in the past ten years; others, such as wave power, are still waiting for the technology to progress to the point where it becomes economically and technically viable.

Wind energy, which in 2013 reached a global total of 318 gigawatts of installed capacity⁽¹⁾, belongs to the first category. Many countries, particularly in northern Europe, have constructed offshore wind parks to produce electricity because winds at sea are usually stronger and more constant than those on land. The general maintenance and cleaning of the wind turbines is contracted out to private companies such as Bond (see page 14), Uni-Fly and HTM Helicopter, who use EC135s to carry maintenance personnel to and from the parks. Unlike ships, this form of transportation is capable of traveling at speeds of up to 150 knots (nearly 300 km/h), regardless of whether the sea is rough or calm and even under high winds.

Another related activity in which the helicopter has proved to be extremely useful is that of carrying out geological surveys and producing 3D topographic models—an indispensable preliminary stage in the creation of a photovoltaic park. In terms of installed capacity, photovoltaic arrays come third in the list of renewables. They are already widely used, not only in the form of large-scale power plants but also by private households and rural communities, to produce energy for heating and hot water. The Ecureuil B3 is frequently used to install solar panels on buildings in out-of-the-way locations, such as mountain cabins.

Hydropower is well known and has been in use for centuries. Today its main application is in hydroelectric power plants. The helicopter's role in this context is focused on the construction of dams and reservoirs, the transportation of personnel and materials, and the monitoring and maintenance of power lines. Whereas the Ecureuil and EC135 are the preferred helicopters during the construction phase given their superior qualities for aerial work, the EC225 operated by French company RTE is the undisputed champion when it comes to line maintenance and surveillance. This aircraft is equipped with a highly accurate autopilot and has a payload capacity of 4.5 metric tons—two essential performance features when conducting missions of this type. A number of other natural resources such as wood, marine biomass, and biofuels could be added to the list of potential sources of renewable energy, on condition that ways can be found of exploiting them in a responsible and sustainable manner. Whatever the solution, there are helicopters standing ready to provide the necessary support.

(1) Global Wind Energy Council (GWEC).

© Anthony Pecchi



The Greater Gabbard wind park is made up of 140 turbines lying 23 km off the coast of Suffolk in southeast England. It is operated by Scottish and Southern Energy (SSE) and RWE. According to the operators, it produces enough electricity to supply 530,000 households.



© Bond

WIND DRIVEN

Bond Air Services has been involved in the offshore wind sector from its very beginnings. The company flies missions to the Greater Gabbard wind park off England's east coast, one of the largest wind parks in the world. David Bond explains the helicopter's role, its advantages and the challenges involved.

UNI-FLY: 23,000 OPERATIONS FLOWN BY THE EC135

Danish operator Uni-Fly A/S uses two EC135s to provide offshore helicopter support. The first, based at Esbjerg in Denmark, flies missions to the Horns Rev 1 and DanTysk wind farms. A second EC135 will shortly go into operation at Humberside Airport on the east coast of England, to serve the Westernmost Rough wind park. Since 2002, Uni-Fly A/S has performed more than 23,000 successful hoist operations to offshore wind turbines using the EC135 based in Esbjerg.

© UniFly



“When it comes to supplying wind parks on the open sea, there are really only two possible options: ship or helicopter. Ships are indispensable for transporting large components, but helicopters offer the greater advantage in that they can reach the turbines and safely deliver maintenance personnel directly, no matter how choppy the sea is.

For Greater Gabbard, Bond Air Services deploys an EC135 T2+ in offshore configuration—including EMS equipment and floats—on behalf of Airtricity. Excellent OEI performance is an important aspect for operating the helicopter’s hoist. Ships cannot reach wind parks once waves reach a height of 1.5 meters, but helicopters can be used at any time, even in bad weather. Generally, we fly two to three technicians out to the Greater Gabbard wind turbines from the heliport at the Port of Lowestoft and set them down on the turbine’s platform. In terms of safety and organization, there are many parallels between offshore wind and offshore oil and gas missions, but the two differ considerably in detail. For example, most wind parks are still unmanned, so large capacity for carrying personnel is not needed. This could change in the future. Growth in wind parks is strong, and ever bigger wind turbines are being built ever further offshore.

“This market is just getting started. Offshore wind today is where offshore oil and gas was 40 years ago. Going on that principle, demand for helicopters to do this kind of work is likely to increase to several hundred in the future.”

Dennis Bernitz, in charge of sales for this market segment at Airbus Helicopters.

In my opinion, it’s important for helicopters and ships supplying offshore wind parks to be seen not as competitors but as complementary transportation methods. Imagine you have to replace a large part on a turbine. It makes sense to get technicians to the location by helicopter so they can prepare things ahead of time before the ship carrying the part sets out. This reduces the time needed for repair and maintenance to a minimum, so the wind turbine can be back in service more quickly.”

HIGH-PRESSURE CLEANER ON BOARD

Swiss companies Heli Rezia and Heli EnergyServices SA, together with SIMPLEX, developed a process for cleaning turbine rotor blades. A six-meter-long lance is attached to the helicopter to spray water and cleaning agents onto the blades under high pressure, which removes salt, bird droppings and other residues. This process has been used to clean steel towers for more than 20 years.

© Heli Rezia





© Courtesy of Héli-Boréal

CANADA

HELPING TO PRODUCE CLEAN ENERGY

The production of hydroelectric power is given high priority in the Canadian province of Quebec, with its extensive water resources. The La Romaine project, named for a river that flows into the Gulf of Saint Lawrence, comprises the construction of four hydroelectric power stations and numerous transmission and distribution lines. For much of the work on this project, the utility company Hydro-Québec has engaged Innukoptères and Héli-Boréal, two private operators equipped with Airbus Helicopters aircraft. The words of these two operators tell us more.

“HELICOPTERS ARE USED FOR ALL TYPES OF UP-FRONT WORK”

“The present Héli-Boréal fleet consists of six Ecureuil B2s, one B3 and one EC120. Our very first customer was Hydro-Québec, with whom we have worked together on several major projects in James Bay. When the power stations were being built, our helicopters were used not only to transport personnel and equipment but also to monitor environmental impact. For example, our aircraft were used to capture woodland caribou, a protected species, so they could be fitted with radio collars. We also conduct missions in collaboration with geological survey teams all along the north coast of Canada, in areas that are not accessible by road. Helicopters are indispensable for all these types of up-front work. And even if large-scale infrastructure projects of this nature have grown less common these days, the helicopter is still invaluable as a means of monitoring, maintaining and repairing power lines that were installed in the 1970s.”



© Courtesy of Héli-Boréal

Jean-Yves Lacasse, Vice president Héli-Boréal

COMPANY PROFILE

Héli-Boréal

- Vice president: Jean-Yves Lacasse
- Number of employees: 20
- Company founded in 2005
- Number of aircraft: one EC120, one AS350 B3, one AS350 BA+ and four AS350 B2s
- Types of mission: mineral exploration, long-line sling load operations, geophysical surveys, wildlife surveying and capture, power line monitoring, forest firefighting.



© Courtesy of InnuKoptères



© Courtesy of InnuKoptères

COMPANY PROFILE

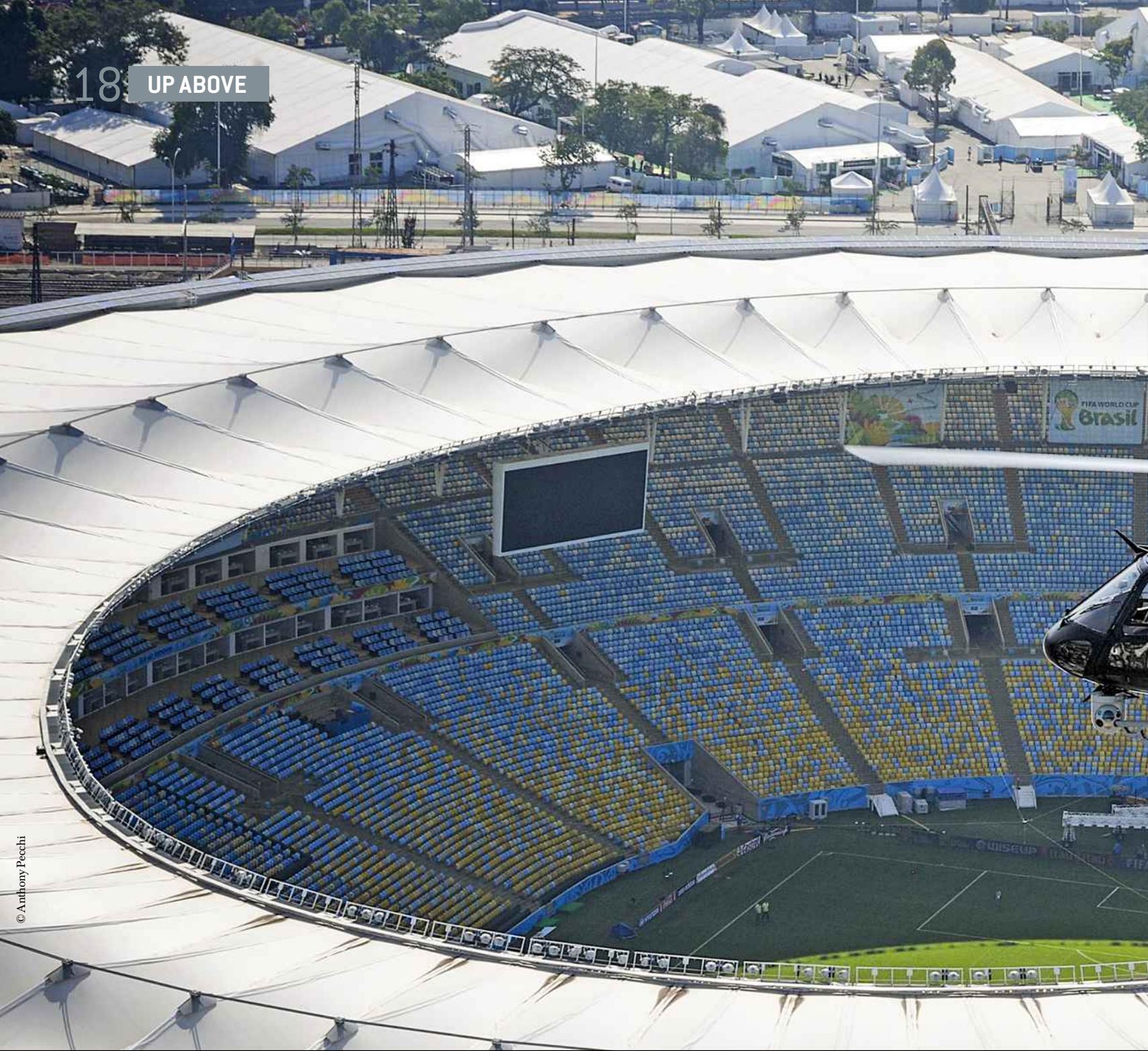
InnuKoptères

- CEO: Paul Desmeules
- Number of employees: 18
- Company founded in January 2010
- Number of aircraft: three AS350 B2s, one AS350 B3e
- Types of mission: aerial work, mining exploration projects, medical evacuation, forest firefighting.

“THE HELICOPTER IS AN INDISPENSABLE MEANS OF REACHING REMOTE SITES THAT ARE NOT ACCESSIBLE BY ROAD.”

“What distinguishes InnuKoptères from other companies is that its controlling shareholders are the Société de Gestion Ekuanitshinnuat (SGE), a holding company formed by the council of the Inuit community of Equanitshit, and Nunavik Rotors, a subsidiary of local airline Air Inuit. The company was founded in response to the growing economic development of the aboriginal communities. Our present fleet consists of three Ecoureuil B2s and one B3e, which we operate from our base at Sept Iles Airport. We provide helicopter support to construction projects on demand. Thanks to its robustness and reliability, an Ecoureuil is capable of working in the field for several weeks without returning to base. The helicopter is an indispensable means of reaching remote sites that are not accessible by road. We use it to transport the personnel tasked with conducting preparatory work for power line construction and clearing access roads. The Ecoureuil is the aircraft most requested by customers in the region, who include not only Hydro-Québec but also the forestry commission and the mining industry. The B2 satisfies the minimum requirements for these types of mission, but customers are beginning to grow accustomed to the superior performance offered by the B3e. For example, it allows us to carry sling loads of up to 2,500 pounds on short-haul flights.”

Paul Desmeules, CEO InnuKoptères



© Anthony Pecchi

2014 FIFA WORLD CUP

Article: JULIEN DUBOELLE

SHOWCASE FOR BRAZIL



Throughout the four-week event in June and July 2014, 122 Airbus Helicopters aircraft were deployed in surveillance roles to assure the security of the football fans who had come to watch the matches at the twelve venues in Brazil, both inside the stadiums and around their perimeter. Flying the AS350 B3+ equipped with infrared and thermal

imaging cameras for aerial surveillance, or the AS355 F2 for passenger transportation, the pilots of Rio de Janeiro's state police force (Serviço Aeropolicial da Polícia Civil do Estado do Rio de Janeiro, SAER) worked in close collaboration with the armed forces—a first for this type of event.

The Bolivian air force has opted for the Super Puma C1e to modernize its fleet and to assure the protection of all communities dispersed throughout the country. In this interview, Bolivian defense minister Rubén Aldo Saavedra Soto provides details of the project.

Interviewed by: **BELÉN MORANT**

BOLIVIA, A LAND OF CONTRASTS

The Bolivian air force carries out missions of vital importance to the country's population. Now it has launched a major fleet renewal program. What lies behind this decision?

Rubén Aldo Saavedra Soto: The purpose of the security missions undertaken by the Bolivian armed forces is to safeguard the nation's political cohesion and to protect the State's sovereign interests—in other words, to ensure that Bolivia remains a well-run country and to defend its national borders. The air force plays a fundamental role in national integration by providing support in the more isolated regions that are deprived of access to the main highway infrastructure. A few years ago, our aircraft fleet was relatively small. Then the Bolivian government launched a large-scale fleet renewal project involving purchases of new airplanes and helicopters, especially for the air force.

“...at the beginning of this year, we purchased six Super Puma C1es.”

After evaluating the bids proposed by various countries, the government finally opted for European products, namely those offered by Airbus Helicopters. We also purchased new aircraft for official journeys by the country's president and vice-president.

What were your reasons for choosing Airbus Helicopters?

R. A. S. S.: Our first orders in 2007 and 2008 were for the Ecureuil B3. After that, in 2011, we acquired two EC145s because they are reputed to be excellent at high altitudes. Our experience with the EC145 confirmed this, and we very much appreciate the advanced technology with which it is equipped. More recently, at the beginning of this year, we purchased six Super Puma C1es. They are destined for use in multi-role missions and numerous other operating scenarios including the war on drugs, the protection of constitutional rights, and the provision of emergency rescue services to victims of natural disasters such as landslides and flooding caused by torrential rain, water shortages caused by periods of drought, or communities threatened by forest fires. What impressed us most about the Super Puma was its outstanding build quality,

for which it is recognized throughout the world. These helicopters have the capacity to operate efficiently at high altitudes—and in Bolivia the average height above sea level often exceeds 2,500 or even 3,000 meters. The capital city of La Paz, for example, lies at an altitude of 3,600 meters, but that doesn't stop the Super Puma from carrying out its missions.

Does this mean that Bolivia's geography and climate present a special challenge in terms of aircraft operating conditions?

R. A. S. S.: Absolutely. Bolivia is made up of three distinct geographical regions. There are the Cordillera and Altiplano, with mountains rising to 6,000 meters; the valleys between them, with virgin forest at altitudes

Rubén Aldo Saavedra Soto, Bolivian Minister of Defense, during his visit to Airbus Helicopters in Marignane, France.





© Thierry Rostang / Airbus Helicopters

UNDER THE MICROSCOPE

The world's longest cable car system

In May 2014, a cable car system covering a distance of 4,000 meters—the world's longest—was inaugurated in La Paz to alleviate congestion on the roads of the Bolivian capital. With a capacity to transport 18,000 passengers per hour, Mi Teleférico carried more than two million people in its first two months of operation.

For the construction work on this immense project and to transport the kilometers of cable, the city of La Paz used an Ecoureuil B3. It was an obvious choice, given the aircraft's endurance, maneuverability, and capacity to lift heavy loads. With the assistance of the Bolivian armed forces, it only took eight days to install the cables for the three-line cable car system.



© David Illanes

of between 1,000 and 1,500 meters; and the Amazonian region—40% of the country—which rarely exceeds 500 meters in altitude but has some of the highest levels of humidity in the world. The Super Puma adapts to each of these challenging environments without the slightest difficulty. That's why we're sure the C1e helicopters are perfectly suited to our needs, and why we're adding six of these aircraft to our fleet. And it's quite possible that we will purchase more in the years to come.

How are you preparing for the entry into service of the Super Puma C1e helicopters?

R. A. S. S.: Our pilots have been trained on flight simulators in France, a service that they judged to be of a very high quality and that

was praised by all participants. At present they're undergoing additional training with the aim of improving their navigation skills at the helm of a Super Puma or EC145. Back in Bolivia, they will share the knowledge they have gained with the other pilots.

How come you decided to rename the Super Puma *Jatun Puma* in Bolivia?

R. A. S. S.: We wanted to give it a name in our native Quechua language, which is widely spoken by the Andean people and features prominently in our folkloric tales and music. Puma is a word of Quechuan origin, and Super can be translated as Jatun, which means "magnificent". The air force personnel readily accepted this name to designate Bolivia's favorite helicopter. ■



READ THE FULL ARTICLE
IN ROTOR ON LINE.
www.airbushelicopters.com

EC145 T2: ONE PLATFORM FOR A FULL RANGE OF MISSIONS

Superior power, advanced mission equipment, small footprint and large cabin size – the EC145 T2 is perfectly suited for a multitude of operations.



BUSINESS

Maximum comfort and optimum working conditions

Cockpit

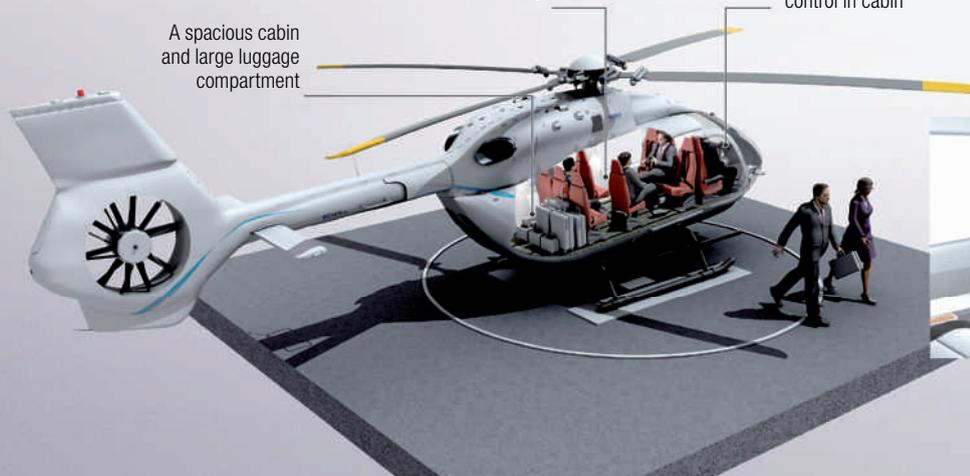
A modular state-of-the-art avionics suite incorporates three large displays and four-axis autopilot. It provides an excellent human-machine interface, improved situational awareness, enhanced flight paths and safety, and a superior field of view for safe landings and take-offs.

A spacious cabin and large luggage compartment

Best comfort with a stylish interior and outstanding external visibility

Air conditioning with independent control in cabin

Available in Mercedes-Benz Style with entertainment system



KEY FIGURES

One engine inoperative performance at Maximum Take Off Weight – the only helicopter with such capability. High and hot performance provides multi-mission flexibility.



Cruise speed:
248 km/h



Useful load:
1,731 kg



Maximum range
(at MTOW)*: **663 km**

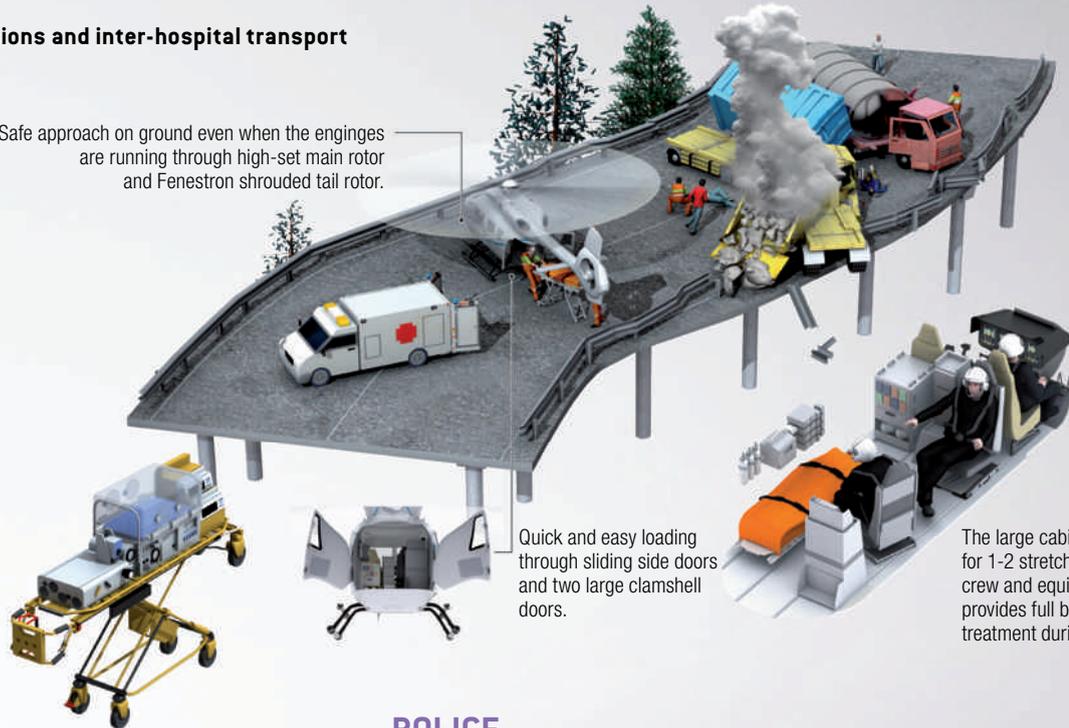


Standard fuel tanks:
728 kg

EMS

Suitable for emergency missions and inter-hospital transport

Safe approach on ground even when the engines are running through high-set main rotor and Fenestron shrouded tail rotor.



Quick and easy loading through sliding side doors and two large clamshell doors.

The large cabin offers space for 1-2 stretchers, medical crew and equipment and provides full body access for treatment during the flight.

POLICE

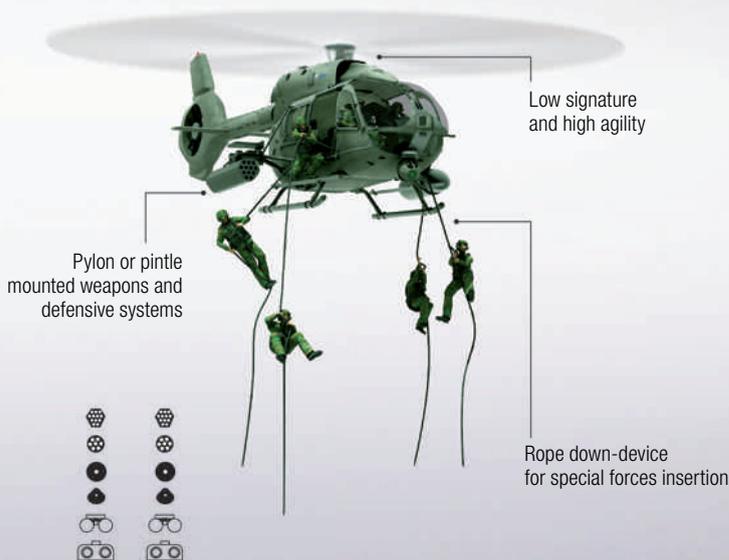
Ready for operations day and night

- Quick role change capability for a wide range of applications such as patrol and surveillance, search and rescue and transport of special police forces.
- Night-vision-goggle compatible and equipped with a powerful searchlight
- Observation and surveillance missions are supported by forward-looking infrared (FLIR) and daylight cameras, controlled by an operator who also handles communications and data exchange with ground-based police operations.
- Enhanced Reality System

MILITARY

EC645 T2 – a versatile light battlefield helicopter

Suitable for special operations, light attack, utility, MEDEVAC and surveillance missions.



Low signature and high agility

Pylon or pinte mounted weapons and defensive systems

Rope down-device for special forces insertion



GROWTH – AND A STRATEGY OF MODERNIZATION

Article: **BELÉN MORANT**

Transportes Aéreos Pegaso is about to begin a new chapter in its long history, with the entry-into-service of two EC175s. They will join a fleet of thirty-five Airbus Helicopters rotorcraft already in service under this operator in the Gulf of Mexico—a strategy of continuous fleet renewal of which company founder Enrique Zepeda Morales is very proud.

Operating conditions in the Gulf of Mexico are very different from those in the North Sea, but both areas are a hostile environment for men and machines. The Pegaso crews who fly offshore missions from the company's home base of Ciudad del Carmen and eleven other sites in Mexico have to deal with the vagaries of a climate that can change at any moment, not to mention the wear on the helicopters due to the high salinity and humidity of the air, which accelerates corrosion.

A WIDE RANGE OF MISSIONS

The company currently operates five EC155s for missions on behalf of Mexico's state-owned petroleum company, Petróleos Mexicanos (PEMEX), to oilfields in deep water about 100 nautical miles off the coast, close to the maritime boundary with the United States. But it is likely that joint exploration projects with North American oil companies will find significant oil deposits further offshore in areas that straddle the border. "The acquisition of our first EC175s

symbolizes a major turning point for us because they will allow us to conduct operations serving trans-boundary oil fields further out in the Gulf of Mexico," says Mr. Zepeda Morales, who has remained faithful to the Airbus Helicopters brand for more than thirty years. "The features of the EC175 that clinched our decision were its passenger-carrying capacity, its excellent operating range, and its speed." He adds, "Another aspect of the selection procedure was after-sales support, and here too Airbus Helicopters demonstrated that its service was superior to that of its rivals." To ensure that the new EC175s enter into service within the planned deadlines, the company has implemented a process that takes into account all logistics-support and training requirements.

A SOLUTION THAT MEETS ALL CUSTOMER REQUIREMENTS

With its present fleet of 35 Airbus Helicopters aircraft (comprising five EC155s, sixteen EC145s, and several EC130s and EC135s), Transportes Aéreos Pegaso undertakes a number of other services including aerial work, firefighting missions, and VIP transportation. However, the main focus of its business is transporting workers and equipment to and from offshore oil and gas platforms. The helicopter operator also provides support in emergency

UNDER THE MICROSCOPE

The EC145 is my favorite helicopter

"We recently signed a contract to purchase ten next-generation EC145s. In my view, it's the best helicopter in the world—and I have no hesitation in saying so. We already have sixteen in our present fleet and we're entirely happy with their performance. Over time, this helicopter's flexibility has made it our company's most valuable asset. It leaves nothing to be desired in terms of functionality and performance, and is capable of landing almost anywhere. Its cabin is spacious and comfortable, the rear door is very practical, and it is equipped with a range of functions perfectly attuned to the missions it is required to perform."

Enrique Zepeda Morales,
founder of TRANSPORTES AÉREOS PEGASO.



© Airbus Helicopters Mexico



© Jérôme Deulin/Airbus Helicopters

To ensure that the new EC175s enter into service within the planned deadlines, Pegaso has implemented a process that takes into account all logistics-support and training requirements.

situations of all types, most especially for medical evacuation. To guarantee safety when performing these highly demanding missions, the oil and gas industry insists that helicopters should be replaced after 10 years in operation or as soon as they have accumulated 10,000 flight hours. “Pegaso implements a strategy of continuous fleet renewal that delivers excellent results. Our customers always say that they feel safe and in good hands each time they board one of our helicopters,” reports company founder Mr. Zepeda Morales, with a smile of satisfaction. “It also makes me proud to see how much Pegaso has grown since my son, Enrique Zepeda Navarro, took on the role of CEO ten years ago.”

PEOPLE ARE THE KEY TO OUR SUCCESS



© Eric Raz

Enrique Zepeda Morales,
founder of TRANSPORTES AÉREOS PEGASO.

Pegaso owes its success to the dedicated efforts of its employees, who play a fundamental role in ensuring that its missions are carried out safely and effectively. In this context, training is essential.

That is why Pegaso has set up a project to establish a training center in Cancún for future maintenance technicians and pilots. “Because there are not enough training facilities of this type in Latin America, operators are obliged to send their employees to centers in Europe. We hope that Airbus Helicopters will provide the support we need to accomplish this ambitious project.”

INAER/SPAIN

Article: **BEATA CECE**

The risk of forest fires is at its maximum in Spain during the heatwaves of the summer months. In the past ten years, more than 200,000 hectares of woodland have been destroyed by fire. The members of the fire department based near the village of Guadalupe in south-west Spain are on permanent standby at the height of the season, ready to be called out with their fire trucks, and with their AS350 B3 fire helicopter.

HELP FROM ON HIGH

When asked what was the worst fire he's ever dealt with, fire chief Jesús Pulido, who coordinates firefighting missions in the Extremadura region, answers without hesitation: "It was nine years ago. The fire started over there," he says, pointing to the range of hills just above the village of Guadalupe. The weather was particularly hot and dry that day, even for July, and there was a strong wind. Within nine hours,

the wildfire had reduced 8,000 hectares of pine forest to ashes—that's roughly 3,200 acres, or the equivalent of 10,000 football pitches. Ten helicopters and countless fire trucks had to be mobilized to bring the blaze under control.

ALWAYS PREPARED, AT 45°C IN THE SHADE

Extremadura has one of the hottest climates in Europe. Each summer, the risk of forest fires grows more and more acute as the temperature rises to its seasonal peak. The firefighting crew led by Mr. Pulido remains on constant alert at this time of year. Their mission headquarters are situated just outside Guadalupe, in the hills above the village. The site includes a helipad, two outbuildings for storing firefighting equipment, and a house where the on-duty firefighters, pilots and technicians can relax between missions. A book lies on the table in the common room, open at the page where the reader was interrupted by an emergency callout. "There are days when we are called out three times in a row," relates Mr. Pulido, "and other days when we fly directly from one intervention to another without even having time to return to base." For transport, he and his team use an Airbus Helicopters AS350 B3. This multi-role light helicopter is equipped with a Bambi Bucket, a collapsible container attached to a hoist that can scoop up and drop up to 1,200 liters of water. The AS350 B3 is operated by INAER, a service provider specializing in mission-critical operations such as water bombing and fire preven-

tion. Manuel Cano is the INAER key account manager responsible for supervising firefighting operations in the Spanish regions of Andalusia and Extremadura. We meet him on the edge of the Guadalupe helipad, his hand above his eyes to shield his vision from the burning heat and blinding light of the sun: "When it's this hot and there's a wind blowing, it takes just a few minutes for the tiniest spark to generate a huge blaze. That's why we need helicopters ready to take off immediately. And if the fire spreads, we may need to mobilize additional support by bringing in helicopters from other bases nearby."

A NERVE-WRACKING EXPERIENCE

As soon as the alarm sounds, the AS350 B3 takes off with the pilot and five firefighters on board. "Our guys never need more than ten minutes to reach the site of the fire," reports Mr. Cano proudly. While the fire-fighters are busy digging fire trenches and beating out the flames, the pilot takes off again in search of the nearest body of water.

Hovering a few meters above the surface, he lowers and fills the Bambi Bucket, then returns to the site of the intervention. With a single flick of a switch, the pilot discharges the contents of the bucket onto the flames and immediately turns around to scoop up another load of water.

Working in such close proximity to a forest fire is a nerve-wracking experience for the pilot, especially if it covers a wide area. The smoke obscures his view not only of the surroundings but also of other fire helicopters operating in the same airspace.

The pilot never needs more than ten minutes to reach the site of a forest fire.



The INAER Ecureuils used during firefighting missions are equipped with a Bambi Bucket.



© INAER

“There is an increased risk of collision with overhead power lines or with other helicopters,” says AS350 B3 pilot Jordi Ferrer. To avert this danger, if a mission involves several aircraft, their flight paths are coordinated by one helicopter flying at a higher altitude than the others, serving as a kind of airborne control tower. Despite these safety measures, firefighting missions demand extreme vigilance and push everyone concerned to the limits of their endurance. “Stress and fatigue quickly build up to very high levels, especially if it takes several hours to bring a fire under control,” points out Mr. Ferrer. The people most at danger are the firefighting crews on the ground, whose escape route might be suddenly cut off by a change in wind direction. This is when experience counts most, and the absolute priority is to ensure that everyone is guided to safety. “We aren’t heroes,” says Mr. Ferrer. “We simply try to do our job as best we can. And if at the end of the day we’ve been able to stop the fire from spreading and causing even more damage, we can be satisfied with our work. This thought helps us get over all the stress and fatigue.”



© INAER

UNDER THE MICROSCOPE

A reference in first-aid

INAER is Spain's leading provider of aerial emergency services and aircraft maintenance, specializing in mission-critical operations such as medical evacuation, civil defense, sea and mountain search and rescue, coastal and fishing surveillance, firefighting, training, and aircraft maintenance. INAER is part of the Avincis Group, one of the world's leading providers of aerial emergency services and a member of Babcock International Group plc. The operator manages a fleet of approximately 170 aircraft, including 45 Airbus Helicopters aircraft. In 2013, INAER Spain coordinated 5,300 firefighting missions, representing a total of 7,100 flight hours.

ANOTHER IMPRESSIVE PERFORMANCE BY THE TIGER IN MALI

Article:
ALEXANDRE MARCHAND

Despite restrictive flying conditions, the ALAT Tigers once again fulfilled their mission.

Following interventions in Afghanistan and Libya, the Tigers operated by the French Army Light Aviation (ALAT) were dispatched to Mali to take part in Operations Sabre and Serval. Each theater of operations calls for a different approach to deal with a specific set of constraints. In Afghanistan, the most difficult aspects were the high altitude and the complex rules of engagement. In Libya, the only line of approach was from the sea, and exclusively under the cover of night. This time, in Mali, the ALAT pilots were confronted with stifling, almost unbearable heat, whirling clouds of dust, and a strict minimum of technical support. "We used to think that Afghanistan was by far the most difficult theater of operations, but we were wrong," one pilot dryly remarks.

It all started in the first weeks of 2013. Units from ALAT's 5th Combat Helicopter Regiment (RHC) and the 4th Special Forces Helicopter Regiment (RHFS), both based in Pau, had only been home for a few weeks after serving in Afghanistan when the French government voted to take military action to restore peace in Mali. The Tiger pilots soon found themselves in the heat of the armed conflict, operating up to eight helicopters simultaneously

in this West African country—not only in the army's Operation Serval but also in Operation Sabre, under the command of the French Special Forces.

OUTSTANDING PERFORMANCE AND RESISTANCE DURING SORTIES

Mali is an immense country; the area that the pilots have to patrol day and night is itself the size of France. This stretches the aircraft's fuel autonomy to its limits, making it practically indispensable to equip the Tigers with an extra-large fuel

tank under one wing (giving it an hour or so of additional flight time). Under the other wing, a rocket launcher is kept fully loaded with missiles. The reliable fuel management system features precise fuel consumption calculations so crews can venture into hostile territory in the middle of the desert without having to worry about fuel. In Mali, the Tigers are deployed as close as possible to the combat zone, far away from the base camp and beyond the reach of the logistics teams that would normally provide support in such a hostile environment. Even though

The Tigers are equipped with a thermal sighting system.

© 5th Combat Helicopter Regiment (RHC)/ALAT





The Tiger's damage-resistant structure enables it to operate under enemy fire in the desert regions of Mali.

the range of technical services is reduced to the strictest minimum, the helicopters still fly for up to 50 hours per month and per aircraft. Certain Tigers even clocked up ten flight hours per day. One machine that returned to France in the spring of 2014 had spent no less than eighteen months without interruption in the Malian desert, out of reach of any maintenance facility. Quite apart from the often hellish flight conditions, the military personnel dispatched from Pau were faced with a determined enemy force. Nearly every Tiger that entered the combat zone emerged with bullet holes in its fuselage.

ON-SITE REPAIRS WITH REMOTE SUPPORT

"I vividly recall the sound of the bullets hitting the aircraft, as if somebody had

thrown a fistful of stones at us with all their force," relates the captain of the aircraft. His helicopter had just received a shower of 26 projectiles in the space of a few seconds. And yet all the systems were still functioning and the aircraft carried the crew back to Gao safe and sound. A closer inspection revealed at least three points of impact in the belly of the fuselage, and many more in the housing below the rotor, in the rest of the fuselage, and at the base of the rotor blades. Repairs to all the other aircraft with less extensive damage are dealt with by ALAT's own airframe technicians at the forward operating base in Gao. "We follow the manufacturer's specified maintenance procedures," they explain. "And in any case we have a direct line of contact from Gao to the Airbus Helicopters Design Office in Marignane. If necessary, we can send them

UNDER THE MICROSCOPE

A whole menagerie of rotary-wing aircraft

To conduct its operations in Mali, ALAT (and to a lesser extent the French air force) dispatched a wide variety of helicopters including the Puma, Cougar, Caracal, and Gazelle in addition to the Tiger. At the height of the conflict, there were thirty or so helicopters deployed in northern Mali. Of these, around fifteen were still operating in the region in the summer of 2014. Rotary-wing aircraft are the ideal choice for long-range sorties in this theater of operations with its difficult topography and lack of infrastructure.

photos of the damage and in turn receive the appropriate instructions or advice very rapidly." The Malian theater of operations, and the extremely tough demands it places on personnel and aircraft alike, has once again reaffirmed the European combat helicopter's outstanding efficiency and proven battlefield capabilities.



© Lorette Fabre

INNOVATION MEANS GENERATING VALUE FOR CUSTOMERS

Article:
EVA SCHAAR

After three years at PSA Peugeot Citroën, Tomasz Kryszynski is now head of Research and Innovation at Airbus Helicopters.

What experience are you able to bring back to the aviation sector from the automotive industry?

Tomasz Kryszynski: The automotive industry is facing pressing challenges such as globalization, growing competition, consumers' heightened sensitivity to quality, increasing safety requirements and environmental commitments. In this context, innovation is not an end in itself. It is a means to offering a competitive

product to the largest possible number of customers. I am convinced that only companies that generate value for their customers will prosper in the future. And innovation that generates value is often simple, but difficult to identify.

Are there best practices that can be transferred?

T. K.: Yes. Let me give two examples: Helicopter development involves dealing with

practical problems that we solve using specific sensors, flight-test procedures, data processing and comparison with theoretical predictions. This methodology can largely be transferred to the car industry to help lower development time and cost. Vice versa, what impressed me during my time in the automotive industry was the degree of industrialization employed along the entire development chain, which enables suppliers to ensure final product quality, so



UNDER THE MICROSCOPE

Tomasz Krzynski

Tomasz Krzynski joined Aérospatiale as an aerodynamics engineer in 1986, and was involved in the development of most of their helicopter product range. In 2011, he moved to PSA Peugeot Citroën to head up the company's innovation laboratory. Mr. Krzynski joined Airbus Helicopters in May 2014 to take over as head of Research and Innovation.

that customer satisfaction levels remain exceptionally high.

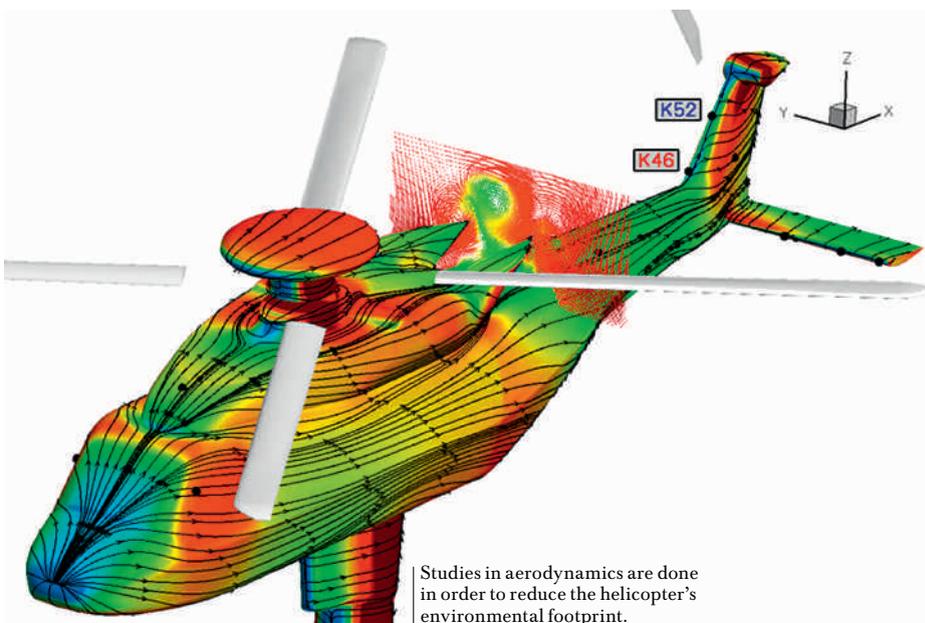
What are the priorities in terms of R&D at Airbus Helicopters?

T. K.: Our R&D objectives align with our company's three key priorities: customer satisfaction, quality and safety, and competitiveness. Currently, we are primarily focusing on short- and mid-term projects in a bid to improve our product range. We want to offer our customers innovative solutions that reduce operating and maintenance costs while improving safety and quality. This starts with production. For example, we launched a project for blades, which aims to replace manual manufacturing steps with automated processes that use composite materials we have developed in-house. This increases the quality and robustness of the manufacturing process, and brings with it a clear reduction in costs.

In the long term, we work on groundbreaking projects to explore completely new helicopter technologies. These research projects are integrated into the European Clean Sky program.

Which helicopter technology do you think holds the greatest development potential?

T. K.: Airbus Helicopters has a history of consistently introducing innovations. Producing simple, efficient and cost-effective helicopters should form the basis of what we do—Airbus Helicopters' very DNA, so to speak. I strongly believe that our R&D efforts should strive to achieve this. Efficient solutions are often difficult to identify and require a significant investment of R&D time and effort. We should make this effort by aiming to introduce new technologies in all areas, from pre-project design to final products. To give you an idea of the sorts of things we're talking about, some of our current innovations include an easily maintainable eco-friendly drive-train system, a crashworthy fuselage made of advanced materials, an advanced human-machine interface with obstacle/terrain avoidance systems for enhanced situational awareness and safety, and the Fly-by-wire control system that could one day become standard for Airbus Helicopters products.



Studies in aerodynamics are done in order to reduce the helicopter's environmental footprint.



Within the framework of Europe's Clean Sky project, Airbus Helicopters is cooperating on

research projects affecting helicopter design, the objectives of which – as elaborated in the European Commission's Horizon 2020 project – are to bring significant improvements to the aeronautical sector's environmental footprint by taking into account the entire lifespan of a product: the development of a high-compression engine to reduce a helicopter's fuel consumption by 30 to 40%; the aerodynamic optimization of the rotor hub and the air-intake vents to reduce a helicopter's drag by 15 to 20%; and the development of noise-reduction processes to minimize a helicopter's sound-footprint.

NH90/NEW ZEALAND

Article:
REGINA LANGE

Eight NH90s in full operational capability (FOC) are ready to perform missions for the Royal New Zealand Air Force (RNZAF) and other of the country's government agencies. The ninth and last NH90 was delivered in October and is due to arrive at RNZAF Base Ohakea, New Zealand, very soon. Three members of the RNZAF helicopter unit recount their experiences.

VERSATILE, FOR ANY CHALLENGE

NH90: ON TOP "DOWN UNDER"

New Zealand will be the first NH90 customer to have its fleet delivered and fully operational. The first eight NH90s were delivered between 2011 and 2013, and four of these have since been upgraded from initial to final configuration. "The first operational deployment of the NH90 was in October 2013," explains Wing Commander Scott McKenzie, Commanding Officer of the Helicopter Transition Unit. "We were called to

remove equipment and debris from a ventilation shaft at the Pike River Mine where an explosion took place in 2010 and 29 miners lost their lives. The helicopter underslung loads weighing up to 3.2 metric tons, which is twice the lifting capacity of any other helicopter operating in New Zealand," he adds. This is only one example of the wide variety of missions that the eight NH90s perform from their operational base in Ohakea, at the southern tip of New

Zealand's North Island. "We perform day and night tactical missions, mountain flying, search and rescue, hoisting, underslung resupply, counter terrorism operations and training," says Flight Lieutenant Mike Garret.

TRANSITION TO THE NH90

The new pilots and crewmen who will fly the helicopters will participate in a basic training course of 110 and 60 hours respectively, followed by five weeks of classroom training and a further three weeks of simulator training for pilots, or a shorter practical course for crew. "The training comprises a total of 24 flight hours, including several daytime and night-time sorties, and covers basic crewman missions such as maneuvering in confined spaces, hoisting, and transporting internal and underslung loads," reports NH90 Crewman SGT Jennifer Hart. For the trained pilots and crewmen the difference between the NH90 and other helicopters is obvious. Garret praises "the increased load capacity, the increased speed, the range and the ability to fly in freezing temperatures above cloud level, which makes the NH90 a competent all-rounder." McKenzie adds, "The NH90 has plenty of power, good One Engine Inoperative performance and good handling characteristics."



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Jennifer Hart and Mike Garret . |



For the pilots and trained members of the team, the difference between the NH90 and other helicopters is clear.



© Anthony Pecchi

RESISTANT FLY-BY-WIRE

The NH90's state-of-the-art flight control system makes it the helicopter of choice for armed forces. In 2013, an NH90 experienced a lightning strike which damaged two blades of the main rotor. Underlining the excellent system qualities, McKenzie says, "Despite the impact of the lightning strike, the crew only felt a very minor vibration and they were able to land safely. This system gives the air-crew confidence."

MAINTENANCE

The RNZAF maintenance team conducts all operating and intermediate level maintenance on the NH90s. "Deeper level maintenance (DLM) will initially be carried out by the RNZAF in partnership with NHI, in the same hangar at Ohakea but under a different command," explains McKenzie. "If all goes well, the RNZAF will take over full responsibility for DLM activities by late 2016, which will provide additional surge capacity to support all deployed rotations."

FACTS AND FIGURES

Royal New Zealand Air Force

- Nine NH90s ordered by the Royal New Zealand Air Force (including one helicopter used for spare parts)
- 110 flight hours per month at present. Future goal: 225 flight hours per month
- Multi-mission aircraft
- 10.6 tons maximum all up weight (MAUW) and 11.0 tons actual gross weight (AGW)

Dominique Blaise, whose job it is to assure the maintenance of ERDF's high-voltage grid in Alsace, prepares the mission with Urs Aecherli, Heli Rezia pilot, and his team.



© Amélie Laurin

The saw consists of ten circular blades capable of cutting branches 30 cm thick.



© Amélie Laurin

The Heli-Saw can be easily configured horizontally or vertically, enabling it to clear up to 600 meters of power lines in under an hour and a half.



© Heli Rezia

FRANCE

Trees near power lines can grow so big that their branches touch the cables or fall on them. When this happens, it is often difficult to localize and repair the damage. Line clearance tree-trimming to prevent power outages is one of the specialties of Heli Rezia, a Swiss operator that deploys its helicopters all over Europe to perform this type of utility work.

BRANCH-CUTTING – WITH PRECISION

Article: BELEN MORANT



The saw used by Heli Rezia on its Ecureuil B3 helicopters has been certified for aerial operations.



Dominique Blaise transmits instructions to the pilot with the help of a two-way handheld radio and a GPS.

The helicopter approaches and before long the air is filled with the pungent scent of pine needles and freshly cut timber. Heli Rezia pilot Urs Aecherli carefully maneuvers his Ecureuil B3 into position a few meters above the ground and sets to work trimming away the tangle of branches around the power cables with the precision of a Swiss watchmaker. One by one, the branches fall into a relatively tidy heap at the foot of the trees. Down below Dominique Blaise, who is responsible for assuring the maintenance of ERDF's high-voltage grid in Alsace, France, transmits instructions and GPS coordinates to the pilot on a two-way handheld radio. The job is done in next to no time, creating a clear corridor three meters wide on either side of the power lines. "We won't have to come back here for another three or four years," says Dominique Blaise, highly satisfied with the result.

LINES ARE DISCONNECTED DURING MAINTENANCE

Using a six-meter saw that can be oriented vertically or horizontally, the helicopters operated by Heli Rezia & Heli EnergyServices SA

are capable of clearing up to 600 meters of power lines on all sides in under an hour and a half. It would take five to eight times longer for a team of arborists equipped with handheld chainsaws to do the same work. "Each year, we clear nearly 700 kilometers of power lines in Alsace—a region that has pioneered the use of helicopters for the maintenance of the high-voltage grid in France. The helicopter enables us to do the work faster and to clear vegetation in places that are otherwise inaccessible," comments Mr. Blaise. "For obvious safety reasons, we disconnect the power lines ten minutes before the helicopter is due to arrive, and restore the power supply as soon as possible afterward." Reactions on the part of local residents, informed in advance by ERDF of Heli Rezia's planned work, have been extremely positive. Indeed, many people living nearby have been observed leaning out of their windows to take photos of the B3 in action with its huge saw.

This special saw was designed over fifteen years ago by Heli Rezia & Heli EnergyServices SA specifically for use with the Ecureuil B3. As of this year, it is being marketed through-

out the world by Simplex Aerospace. The Heli-Saw consists of ten blades that can be configured horizontally or vertically to clear branches from power lines or other structures. It can cut branches up to 30 cm thick at a speed of 2600 rpm and incorporates a fuel sling enabling the saw to operate for two hours without interruption. "The risks involved in this type of mission are negligible, but the task does demand a high degree of precision and concentration. It takes experienced professionals to perform this work," says Mr. Aecherli, who has clocked up nearly 5,000 hours of aerial tree-trimming operations. "I need to take a break at least every two hours, because my back begins to ache due to the effort of peering through the window to keep an eye on the exact position of the saw."

After three days of intense work, the mission is accomplished and all the power lines in the valley are free of overhanging branches. The people of Alsace will have to wait several years before seeing the flying woodcutters and their Swiss-quality saw again.

For more information visit:
www.helienergyservices.ch

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