

JOURNAL

ROTOR

THE WORLD OF HELICOPTERS BY EUROCOPTER - NO.89 - MARCH/APRIL/MAY 2011

THE EC145 T2 USHERS IN A NEW GENERATION

FEATURED ARTICLES
BOOM TIME IN BRAZIL

THE EUROCOPTER RANGE
NEW FOR 2011



Thinking without limits



The Eurocopter EC225. A helicopter built to redefine your comfort zone.

The latest Eurocopter EC225 is built for the ever-increasing exploitation challenges of today's oil industry. A low-vibration, five-blade spheriflex rotor for smooth flying. A full glass cockpit with advanced avionics and exclusive autopilot functions for better pilot interfaces and improved situational awareness. Supremely efficient de-icing systems for maximum availability. A machine from a family with proven reliability across 2 million flight hours in the industry, capable of flying 19 passengers to the furthest rigs. When you think comfort zone, think without limits.



AN EADS COMPANY



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BUILDING ON A STRONG HERITAGE

The latest Heli-Expo Air Show, which took place early March,

gave positive signs to helicopter manufacturers around the world that the industry is gaining steam, and suggested a global recovery in the coming months. Eurocopter was once again a major force at the show with its official launch of the next-generation EC145 T2 helicopter. This light twin-engine aircraft combines the time-tested advantages of its predecessors —the BK117 and EC145— with improved performance, flight safety and mission capabilities. In addition to the T2, the following new “e” generation helicopters were also launched: the AS350 B3e Ecureuil, EC135 P2e and T2e, and AS365 N3e Dauphin. These new products clearly demonstrate Eurocopter’s capacity for innovation. Our goal is to increase your mission

capabilities by continuously offering you cutting-edge aircraft with greater added value, combining optimized safety with competitive operating costs.

It is through decades of experience that we are able to offer such high-performance aircraft.

This strong heritage was built over time by men such as Jean Boulet, who passed away on February 15, 2011. The entire aeronautics world is in mourning. I would like to personally pay my respects to this exemplary test pilot, who set 17 world records during his career. The record he set in 1972 for reaching the highest altitude ever attained by a helicopter still stands today, and reminds us that the desire to go higher, farther and faster has always been our company’s rallying call.

Lutz Bertling, *President and CEO of Eurocopter*

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**The EC145 T2 Ushers
 In a New Generation**

© Charles Abarr/Eurocopter



The new-generation EC145 T2 performed its first flight on June 25, 2010. In March of 2011, it was unveiled to operators and the general public at the Heli-Expo air show in Orlando, Florida.

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William J. Amelio,
 President and CEO
 of CHC Helicopter
**New Opportunities
 For the Offshore
 Market**



© Anthony Pecchi

14 FEATURED ARTICLES
BOOM TIME IN BRAZIL

Eurocopter has been present in Brazil since 1978 through its subsidiary Helibras, and has been a major player in the current boom.

In December 2008, the Group signed a contract with the Brazilian armed forces for 50 EC725s, and Helibras is now gearing up its operations to handle manufacturing and maintenance work for the new helicopter inside the country. The civil version of the

EC725, the EC225, has also been a success on Brazil's oil and gas market, and Helibras is well positioned to reap the benefits. Helibras is also extremely active in other market segments as well.

The subsidiary sold 38 helicopters in 2010, (27 in the civil and 11 in the parapublic markets), including helicopters from the entire range of Eurocopter products.



© W. Ziegelmeier/Helibras

21 SPECIAL REPORT
Well Established in the Civil Market



© Advanced Flight

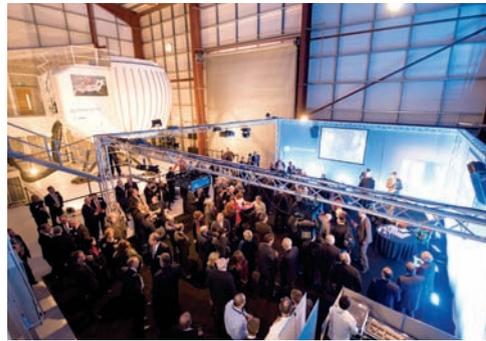
With New Zealand's diverse geography of towering cliffs, high mountain peaks and rocky coastlines, helicopters have become an efficient and essential tool for the many types of operations in the country, ranging from tourism and corporate transportation to Search and Rescue, law enforcement and aerial work.

24 IN OPERATION
**Delivery of the 600th Eurocopter
 Helicopter**

On December 9, 2010, Eurocopter Canada Limited (ECL) delivered the 600th Eurocopter helicopter on the Canadian market. A powerful single-engine AS350 B3 AStar/Ecureuil was handed over to Hélicopter Inc., a major operator in Quebec that is a member of Groupe Placement B. Allard.

28 SERVICES

- Eurocopter UK inaugurates a new service center
- The EC225 earns its stripes with the French Navy



© Ken Taylor

FOR MORE INFORMATION, CHECK OUT

JOURNAL **ROTOR** ONLINE



LIFE OF THE RANGE

New Improvements in 2011

30

Improving performance levels and reducing operating costs are major objectives for Eurocopter, which is why the Group will be enhancing several helicopters in its range

in 2011. In addition to the EC145 T2, four other families will benefit from this new policy: the Super Puma/Cougar, Dauphin/Panther, Ecureuil/Fennec and EC135/EC635.

- First flight of the French Tiger in HAD version
- Testing the Tiger in real-life conditions
- NH90 in TTH version

26 PLANET EUROCOPTER

The AAS-72X Offers the US Army an Excellent Solution

On December 7, 2010 at the American Eurocopter site in Grand Prairie, Texas, EADS North America conducted the first flight of the Armed Aerial Scout (AAS) 72X technology demonstrator.

- The latest news from Eurocopter subsidiaries around the world

25 TRIBUTE

Jean Boulet, a Record-Setting Pilot

The helicopter world is mourning the loss of Jean Boulet, who passed away on February 15 at the age of 90. *Rotor Journal* pays tribute to a man respected both for his courage and his modesty.



See more **PICTURES** of CHC Helicopter CEO William J. Amelio's visit to Marignane (page 12).



VIDEOS online:

- The EC145 T2 (page 11)
- The inauguration of the new service and support center located at Dyce airport in Aberdeen, Scotland (page 28)
- The first flight of the French Tiger in the HAD version (page 32)
- The first flight of the NH90 in the TTH version (page 33).

34 OFF THE BEATEN TRACK

The EC135 Tackles a New Mission

The utility company Southern California Edison (SCE), which provides electrical power throughout the Southwest United States, decided a few years back to only use twin-engine helicopters to perform maintenance work on its high-voltage power lines. SCE has placed its trust in the EC135 P2i, marking the first time that the helicopter will be carrying out this type of mission.



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Publication Director: Cécile Vion-Lanctuit, Editorial Director: Monique Colonges, Editor in Chief: Regina Lange, Iconography: Jérôme Deulin/Erin Callender, Translation: Burton, Van Iersel & Whitney, Munich, Proofreading of the English version: Erin Callender, Proofreading of the German version: Regina Lange, Proofreading of the Spanish version: Belén Morant, Proofreading of the French version: Monique Colonges, Published by: **becouse**, Printed by: SPI, ISSN No. 1169-9515 (Copyright Eurocopter 2011, all rights reserved).

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Magazine printed on Triple Star, paper originating from sustainable forests.

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FLYING OVER THE VOLCANO

Article
ERIN CALLENDER

Photo by
SIGURDUR ASGEIRSSON

EYJAFJALLAJÖKULL BY HELICOPTER



One year ago, on March 20, 2010, the volcano located on the Eyjafjallajökull ice cap in southern Iceland erupted for the first time, resulting in an ash cloud that left more than five million air passengers stranded all around Europe. But helicopter operators in the area were anything but grounded. One of Iceland's leading helicopter tourism operators, Nordurflug ehf Helicopters, provided visitors in the region the chance to get up close and personal with the eruption at the Fimmvorduhals site. In their AS365N Dauphin and AS350 B2 Ecureuil, the Nordurflug team flew up to 10 tours

per day for a period of six weeks. Each trip took about 35 minutes. "The helicopters performed excellently, and both the passengers and our pilots enjoy the wide open cockpit and cabin so everyone can see well," explained Jón Kjartan Björnsson, chief pilot at Nordurflug. "This kind of flight was tricky because we had to be sure to remain upwind of the eruption to avoid the wind and ash, but our aircraft did the job with no problem." Based in Reykjavik, Nordurflug ehf Helicopters specializes in helicopter charters, tours and aerial filming and photography.



2010: THE YEAR IN PICTURES



© Patrick Penna/Eurocopter

Contracts

May 20: The Royal Malaysian Air Force orders 12 EC725s.

September 20: The Mexican Ministry of Defense orders 6 EC725s.

1 September 28: The Russian operator UTair Aviation signs a contract for 20 Ecoreuils.

October 27: An MoU is signed with Kazakhstan for the installation of an assembly line in the country to manufacture 45 EC145s.

Innovation

September 6: First flight of the demonstrator for the X³, a high-speed hybrid helicopter.

Visitors



© Eurocopter Yostok



© Nicolas Gouhier



© Luis Vizcaino

March 4: French President Nicolas Sarkozy pays a visit to the Eurocopter plant in Marignane, where he gives the closing speech for the “États Généraux de l’Industrie”, a high-level industrial conference sponsored by the French government.

April 21: His Majesty Juan Carlos I, King of Spain, visits the Eurocopter plant in Albacete.



© Edmonton Police

Operations

- The worldwide fleet of EC120s reaches the 1 million flight hour mark.
- The Tiger surpasses 1,500 flight hours in Afghanistan.
- The UH-72A Lakotas have now flown 40,000 flight hours in operations.
- The worldwide Super Puma/ Cougar/EC225/EC725 fleet totals 4 million flight hours.



© Marcus Schlaf

1



© Thierry Rostang/Eurocopter

2



© Patrick Penna/Eurocopter

3

Programs

- 1 **February 10:** First flight of the CH-53GA (the upgraded CH-53G) for the German Army.
- 2 **May:** The “Mercedes-Benz Style” EC145 is unveiled at the EBACE air show in Geneva.
- 3 **December 17:** First flight of the second EC175 prototype.
- December 17:** First flight of the first pre-series Tiger HAD (support suppression helicopter) for France.
- December 17:** First flight of the first NH90s in the TTH version for France and Spain.



© EADS North America

1



© Eric Raz/Eurocopter

2

Deliveries

- 1 **March 4:** Delivery of the 100th UH-72A Lakota to the U.S. Army.
- 2 **April 22 and May 5:** Delivery the first NH90s in the NFH version to the Netherlands and France, respectively.
- June 10:** Delivery of the 900th EC135 to the Bavarian Police.
- October 8:** Delivery of the 36th and final EC120 to the operator Helidax.

International

March 10: Prototype no. 1 of the Surion performs its first flight and a GTV⁽¹⁾ is delivered to South Korea in early April.

(1) Ground Test Vehicle

- 1 **March 19:** The cornerstone is laid for the EC725 assembly line in Brazil, and the first three EC725s are delivered to the Brazilian Army on December 20.

September 21: A new extension is opened at the Training Academy in Kassel, Germany, during its 40th anniversary celebration.

- 2 **October 20:** Eurocopter India, the Group's new subsidiary in the country, is inaugurated.



© Helibras

1



© Eurocopter India

2

THE EC145 T2 USHERS IN A NEW GENERATION

Article
REGINA LANGE

Photos by
CHARLES ABARR/
EUROCOPTER

The new-generation EC145 T2 performed its first flight on June 25, 2010. In March of 2011, it was unveiled to operators and the general public at the Heli-Expo air show in Orlando, Florida.



The EC145 T2 - the ultimate emergency medical, multi-mission helicopter.

The EC145 T2 was developed based on a proven concept, allowing it to benefit from the many advantages offered by the EC145: an impressive payload, a long range, a spacious, multipurpose cabin with rear and side access, excellent flight characteristics and high reliability. The EC145 T2 also incorporates Eurocopter's latest innovations in terms of power, flight safety, sound level reduction and mission equipment.

"By using a family concept, we have been able to reduce technical risks and development costs," explained EC145 T2 Project Manager Dragos Grigorincu. "Our operators will clearly be reaping the benefits."

The designers of the EC145 T2 certainly had the police and homeland security sectors in mind when they developed the new helicopter, but above all they focused on primary and secondary EMS⁽¹⁾ missions (inter-hospital patient transport) and SAR missions. This new multi-mission helicopter will also provide valuable services in the business aviation, oil and gas and aerial lifting sectors. In this last area, the EC145 T2 is particularly well suited for servicing offshore wind farms. Its specifications were also dictated to a large extent

by the necessity to comply with European regulations for OEI⁽²⁾ performance - in particular for EMS operations.

"To make sure the new helicopter was perfectly in tune with customer needs, we took into account the suggestions of our operators starting in the pre-design and design phase," said Mr. Grigorincu. "Our goal was to design a lightweight twin-engine helicopter that responds to the current demand for modern aircraft offering excellent quality. The EC145 T2 offers very good flight performance, unequalled mission capabilities and excellent flight safety. Other advantages are competitive operating costs and simplified maintenance."

EXCELLENT PERFORMANCE AND RELIABILITY IN ALL FLIGHT SITUATIONS

The EC145 T2 is powered by two Turbomeca Arriel 2 engines with FADEC digital engine controls. The system guarantees top performance levels and high-precision piloting regardless of the maneuver, as well as optimized fuel consumption. The workload of the pilots is also considerably reduced, resulting in increased flight safety. These extremely powerful engines guarantee excellent flight performance,

and each separate engine also offers vital power reserves in case one of the two should fail.

Flight safety is also ensured by a standard 4-axes autopilot and modern avionics, which are based on a recent design that simplifies piloting work thanks to a high-performance, user-friendly human-machine interface. The dual AFCS⁽³⁾ significantly reduces the pilot's workload, particularly in difficult weather or mission conditions. The AFCS is coupled with a satellite navigation system (WAAS/EGNOS), allowing the helicopter to perform high-precision landings in complete safety in any location.

Another major innovation is clear to see: the tailboom featuring the Fenestron tail rotor. This new addition offers excellent in-flight efficiency and increased safety, in particular when loading the cabin from the rear and when flying in confined spaces. The Fenestron also significantly reduces noise emissions, and has a dual hydraulic system that guarantees better safety when handling a failure.

(1) Emergency Medical Services

(2) One Engine Inoperative

(3) Automatic Flight Control System



MILESTONES

June 25, 2010: First flight of the first prototype
End of 2010: The first prototype logged more than 40 hours of development flights
Autumn 2011: First flight of the second prototype, used for development and certification flights
2012: AESA certification
2013: FAA^[1] certification and first deliveries

[1] Federal Aviation Administration



**WATCH THE EC145 T2 VIDEO
ON ROTOR ONLINE**
WWW.EUROCOPTER.COM

“The first flight of the EC145 T2 lasted 70 minutes and was a complete success. Flight Engineer Carl Ockier and I were very pleased with how easy it was, and we are extremely confident that this new concept has a bright future. This could be the next chapter in the success story that began with the EC145, which has already proven its worth.”

Volker Bau,
EC145 T2 test pilot.

Interviewed by
ERIN CALLENDER

Photo by
ÉRIC RAZ/EUROCOPTER

CHC HELICOPTER

William J. Amelio took over the role of President and CEO at CHC Helicopter in August 2010. On the occasion of his first visit to Eurocopter's facilities in Marignane, he spoke with *Rotor Journal* about the helicopter industry and his plans for the future of CHC.

OFFSHORE OPPORTUNITIES

How do you envision the evolution of CHC's strategy worldwide?

William J. Amelio: As you know, helicopter transportation of personnel to offshore oil production platforms is our primary business. Most of the big finds are happening in deeper waters farther offshore, which plays extremely well to our strategy. Oil and gas operations offshore have been growing for the past 20 years at a compound annual rate of roughly 4%, and this rate is expected to increase to between 5-9%. We are also thinking about alternative energy – in particular wind farms, which tend to be far offshore and will require operators to use helicopters for maintenance. In addition, we see SAR⁽¹⁾ as a large component of our future growth. We currently have large-scale SAR/EMS⁽²⁾ operations in Ireland, the UK and Australia, which we will effectively leverage to grow this business.

How can Eurocopter help you to carry out your strategy?

W. J. A.: With some of the best-in-class helicopters in the world, Eurocopter is a great partner. It's critical to have high aircraft availability and reliability when servicing our demanding oil and gas customers. Of course, safety is always at the top of our agenda. Eurocopter and CHC must remain aligned with respect to safety enhancements both for current and future helicopter designs.

Which regions in the world are becoming increasingly important markets?

W. J. A.: Australia is one of our key growth markets, and we've recently restructured our business to enable this growth by moving our headquarters to Perth and by re-engineering our key processes in the country. This has led to CHC's recent tender win of Woodside Energy, the largest contract in Australian history, for which we're using Eurocopter EC225s. We are also seeing significant growth in Brazil and South Africa. Additionally, I wouldn't count out the North Sea. This may seem surprising because it's considered a mature market, but there is a lot of activity happening from Norway to Russia.

As the largest EC225 operator in the world, what do you believe are the main drivers for the success of this aircraft?

W. J. A.: The aircraft's payload, safety record and ability to comfortably transport large numbers of passengers are among the reasons for its success. The new ergonomically designed glass cockpits are truly superior and help the crew to remain as safe as humanly possible. The EC225 is the 2nd largest helicopter in our fleet and continues to be in large demand by our customers.

What are your impressions of the EC175, which you saw during your visit?

W. J. A.: The short answer is it's very impressive. The EC175 is modern, contemporary and clearly fills an important niche in Eurocopter's product line. We are watching it with keen interest, and I don't think it's a matter of "if" but more a matter of "when" we decide to purchase it.

(1) Search and Rescue
(2) Emergency Medical Services



SEE MORE PHOTOS FROM MR. AMELIO'S VISIT TO EUROCOPTER IN MARIGNANE ON ROTOR ONLINE
WWW.EUROCOPTER.COM

CHC HELICOPTER

Headquarters: Vancouver,
Canada

Fleet size: More than
250 aircrafts in 30 countries

Eurocopter fleet:

49 AS332s, 19 AS365s,
3 EC155s, 22 EC225s, 1 EC135,
2 EC145s

Missions: Offshore oil and
gas transportation, civilian SAR,
helicopter maintenance, repair
and overhaul

Check out their website:
www.chc.ca





BOOM TIME IN BRAZIL

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**EC725, A MAJOR
CHALLENGE FOR HELIBRAS**

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**OIL & GAS, THE EC225 CONQUERS
THE BRAZILIAN OFFSHORE MARKET**

EC725

A MAJOR CHALLENGE FOR HELIBRAS

On December 23, 2008, the Brazilian government signed a contract for 50 EC725s with a consortium formed by Eurocopter and Helibras. The new agreement was intended to develop engineering capabilities, transfer technology and skills, and foster cooperation with Brazilian industry through the establishment of a local assembly line.

Interviewed by **CHRISTIAN DA SILVA**

Interview with Richard Marelli, director of the EC725 program in Brazil.

Why is the contract so complex?

Richard Marelli: First and foremost, it's because the contract was signed with the Ministry of Defense on behalf of all three Brazilian armed forces – a first for Brazil. It will also require a complex industrial setup, since the Eurocopter/Helibras consortium will be transferring both production activities and major development work

for two sophisticated mission systems to be realized entirely in Brazil - one for the Army and Air Force and another for the Navy. Third, it represents an industrial challenge as it requires cooperation on several fronts: we'll have to build a whole new factory, double the size of Helibras, set up training and develop trainee programs in conjunction with Brazilian engineering schools, carry out on-the-job training at Marignane and provide knowledge transfer via a Eurocopter technical team working in Brazil. The contract also calls for a new design office with IT systems that remain compatible with those of the parent company while preserving the advantages in terms of flexibility synonymous with a subsidiary.

This contract is accompanied by a cooperation agreement with the Brazilian industry covering key areas of aerospace technology: composites, metalwork, machining, electrical harnesses, avionics, systems and engines. The consortium has already signed contracts with the first three suppliers: Inbra Aerospace (for the compos-





THE NEXT MAJOR STEPS

Early April 2011:

The first three EC725s will enter service at customer bases in Belém (air force), Taubaté (army) and São Pedro da Aldeia (navy)

December 2011:

Handover of the new building for the EC725

Early 2012: Arrival of three new EC725s in Brazil

© Bill Souza

ite parts of the EC725's intermediate structure and the composite tail boom fairings), Toyo Matic (the aeronautics machining specialist who will be in charge of the main rotor head sleeves) and Aernnova (for the manufacture of the tail boom).

What will be the role of the French teams sent to work at Helibras?

R. M.: The Eurocopter teams are naturally tasked with carrying out the vast majority of the knowledge transfer from Eurocopter to Helibras. Each team member is responsible for training a Helibras colleague so that by the time the teams leave, the Brazilians will be able to handle the system on their own. The teams will be mainly working on industrial cooperation, the systems design office, the design office in charge of defining the two mission systems, the supply chain, lean manufacturing, purchasing and flight testing. There is also a large team of Brazilians in France being trained in the various activities covered by the design office and the planning department. They will be joined this year by production and assembly technicians. In total, we will have up to 50 Brazilians in France and 40 Europeans in Brazil.

What are Helibras' plans for recruiting, training and developing staff?

R. M.: The company has entered into agreements with several important schools in Brazil, including the universities of São Paulo and Itajubá, to take interns at Helibras or at Eurocopter as a form of pre-recruitment. We will also be launching trainee programs for assembly technicians in cooperation with the federal state of Minas Gerais.

What effects will Helibras' move into high-level technology have on the makeup of local industry?

R. M.: One of Helibras' objectives is to position itself to develop mission systems that can also be installed on other aircraft (Fennec, Panther), for which retrofit contracts have already been signed. This requires not only an in-depth knowledge of systems and software architecture, but also a network of local subcontractors who have mastered the necessary tasks and who can be perfectly integrated as industrial cooperation partners.

“The new developments at Helibras are more than just a unique opportunity for the Group: They are also an exceptional technical and human adventure.”

In what ways might Helibras become a home base for the EC725/EC225 family in Latin America?

R. M.: Thanks to these new developments, Helibras and its partners will have all the necessary maintenance tools at their disposal in Brazil, including heavy equipment such as MGB and engine benches as well as avionics test equipment. Helibras will not only have the industrial and design capabilities it needs to perform the helicopter upgrades covered by the Brazilian contract, but also to meet the complex configuration requirements of military customers across Latin America. Not least, the company will boast a modern assembly line that is capable of supplying Latin America's civil market. What's more, all the technological know-how and industrial means developed by Helibras will be serving the other aircraft in the range, which will result in higher quality and better responsiveness to the civil and parapublic markets—in particular for Brazilian police forces, an important market for the country.



© Bill Souza

Richard Marelli, director of the EC725 program in Brazil.



On December 20, 2010, the Brazilian Armed Forces received the keys to their first three EC725s, opening a new chapter in the South American power's aviation history.

BRAZIL

DELIVERY OF THE FIRST EC725s

Article **BELÉN MORANT**

The handover ceremony in Brasilia had typical Brazilian flair: With former president Luís Ignácio Lula da Silva in attendance, accompanied by the Brazilian Minister of Defense Nelson Jobim, Helibras President Eduardo Marson officially delivered the first three EC725s to the Brazilian Navy, Army and Air Force.

These first three helicopters were manufactured in France as part of a contract signed in 2008 for a total of 50 EC725s. They were accepted by the customer in Marignane, finalized at Helibras's plant in Itajubá and then transferred in the hold of an Antonov cargo plane to their final destination. The customer took an active part in every



Luís Ignácio Lula da Silva, former president of Brazil, and Eduardo Marson, president of Helibras, at the ceremony on December 20, 2010.

aspect of the ferry flight process. The EC725s had remained in Itajubá through the end of March to enable pilots and technicians from the Brazilian Armed Forces to complete their training on the machines. Over the next two years, special equipment packages will be added to the helicopters' base configuration. The Army will be receiving a total of 16 EC725s in the standard configuration for logistical support missions. The Air Force and the Navy will each be receiving eight helicopters in the standard configuration. An additional eight EC725s in combat SAR configuration will also be delivered to the Air Force, and eight in the ASuW⁽¹⁾ configuration to the Navy.

EC725 Commercial Manager Marco Wagner talked about the flurry of activity since last May: "Helibras has completed training for one test pilot, six tech reps, four technicians and eight engineers for the Brazilian Armed Forces so that they can take over all the EC725 support work in Brazil. We'll also continue to provide professional training throughout the coming year. The feedback we've been getting from the Brazilian Armed Forces is extremely positive. Not only are they delighted to be receiving such modern helicopters, they are also proud to know that the manufacturing and support work for the EC725s will be carried out right here in Brazil."

(1) Anti-Surface Warfare

On December 10, 2010, the Governor of the state of Maranhão, Roseana Sarney, officially accepted the first EC145 in Brazil to be used for law enforcement work. With its full array of specialized equipment, the EC145 has already proven its worth in the field.

STATE OF MARANHÃO

BRAZIL RECEIVES FIRST EC145 IN POLICE CONFIGURATION

Article **BELÉN MORANT** Photo by **TECNOLOGIA & DEFESA**



FOCUS ON...

Helibras to Upgrade 36 Esquilos of the Brazilian Army

Helibras signed an agreement on December 30, 2010 to upgrade 33 Esquilos of the Brazilian Army and to rebuild three others. The 36 helicopters, which have been operated by the Brazilian Army Aviation Command for more than 20 years, will be modernized and equipped with new systems enabling them to remain in service for another 25 years.

The first EC145 in police configuration is already in service in Brazil, and initial results have shown that the helicopter has quickly adapted to the specific constraints of this market segment in the region. The GTA airborne tactical group in Maranhão already operates a number of Esquilos⁽¹⁾, but has now acquired the EC145 to perform more long-distance missions, improve response times and provide the police force with more multifunction capabilities. These are key factors in the agency's war on organized crime, as it must deal with heavily armed and highly trained criminal groups.

"The EC145 provides us with the multifunction capabilities, speed, operational effectiveness and endurance that we need in order to quickly intervene in the field," explained Aluísio Mendes, secretary of the State Security Department. "The helicopter is perfectly equipped for law enforcement missions, with a digital cockpit, sliding doors, a modular 9-seat cabin, a searchlight, a rescue hoist and an air ambulance kit. We are extremely pleased with the EC145."

It didn't take long for the first Brazilian police EC145 to earn its stripes. When landslides devastated mountainous regions in the state of Rio de Janeiro in mid-January, Governor Sarney didn't hesitate to lend the EC145 to the SENASP⁽²⁾ for disaster relief work. The helicopter flew over 3,000 km to Rio in just 24 hours to set about its mission. "It was an honor for us to take part in such a vital mission with our EC145," said Mr. Mendes, who had

high praise for the aircraft: "The helicopter's speed and payload capacity make it an excellent tool for rescue operations and medical transport missions. It was also extremely effective for carrying urgently needed supplies to disaster victims. The EC145 really shined in its first trial by fire and more than surpassed our expectations."

(1) The Ecureuil manufactured in Brazil

(2) Brazil's National Secretariat of Public Safety

"Helibras accounts for 82% of the parapublic helicopter market in Brazil. The 106 Eurocopter helicopters currently in service in the country are used for law enforcement missions (such as air patrols, the war on crime and surveillance work). AS350 Esquilos account for 75% of the aircraft, but light and medium-lift twin engine models are currently gaining in popularity."

Julien Négrel, Commercial and Marketing director at Helibras.



OIL & GAS

THE EC225 CONQUERS THE BRAZILIAN OFFSHORE MARKET

As operators vie for a share of one of the fastest-growing offshore markets in the world, one helicopter has emerged as a key player in the Brazilian oil rush: the EC225.

Article **BELÉN MORANT** Photo by **AERÓLEO**

FOCUS ON...

The First EC155s for Offshore Missions in Brazil

In 2010, OMNI Taxi Aéreo, which celebrated its tenth anniversary last December, became the first Brazilian operator to use the EC155 for offshore operations. The company is now flying four EC155s on missions for Petrobras. Two of the helicopters fly in the EMS configuration for medevac missions, while the other two transport passengers to offshore oil rigs.

To understand what's on the horizon for the Brazilian oil and gas sector, just take a look at the city of Macaé, the hub of the South American giant's oil activities. Pre-salt layers containing vast oil reserves were recently discovered off the coast just south of town, and the existing infrastructure for oil and gas production will have to be doubled if these reserves are to be exploited to the fullest.

As the pole for oil activities gravitates towards Rio, the offshore platforms will have to be built farther off the coast. Remote platforms at distances between 140 and 230 nautical miles from land will mean that oil companies such as Petrobras, which operates 95% of Brazil's offshore rigs, will require helicopters that have greater endurance and can carry more passengers during each rotation. Increased safety is also an important factor that Brazilian decision-makers place high on their list of specifications. This is all welcome news for the EC225, which has already positioned itself as the most adapted helicopter on the market.

Petrobras has been operating 10 EC225s since 2010, and Eurocopter's share of the heavy-lift helicopter market in the offshore sector is already almost 60%—even though the EC225 has only just arrived on the scene. Aeróleo, a partner of ERA, uses three EC225s, while Brazilian Helicopter Services (BHS), a subsidiary of CHC, operates seven. Many other local operators have also begun taking a closer look at the EC225.

It will hardly be a surprise if the EC225 continues to grow in popularity in Brazil, since helicopters for the country are expected to be 100% "made in Brazil" just a few years down the road. Helibras will begin production work on the EC725 in Itajubá in 2012. Soon after, planned expansion at the Eurocopter subsidiary will put it in a position to manufacture the EC225 for the local offshore market and also provide support. The new helicopter will also benefit from the Buy Brazilian Act signed in November 2010, which calls for state-owned companies (including Petrobras) to give priority to domestic products when issuing calls for tenders.

EUROCOPTER DOWN UNDER WELL ESTABLISHED IN THE CIVIL MARKET

NEW ZEALAND

Article
ERIN CALLENDER

With New Zealand's diverse geography of towering cliffs, high mountain peaks and rocky coastlines, helicopters have become an efficient and essential tool for the many types of operations in the country, ranging from tourism and corporate transportation to Search and Rescue, law enforcement and aerial work.

The largest concentration of Eurocopter aircraft is found in the lower South Island, as this area provides some of the most scenic landscapes and tourism flights abound. As a part of Australian Aerospace, Eurocopter International Pacific (EIPNZ) and its team of 12 based in Auckland provides sales, customization and technical and spare parts

support for the entire New Zealand fleet of 180 Eurocopter aircraft, which accumulated 37,000 flight hours in 2010.

Between 1990 and 2000, EIPNZ sold 6 new aircraft, but this number jumped to more than 75 in the 10 years that followed. "All our helicopters were delivered on time or ahead of schedule," explains Murray

Benns, manager of Sales and After Sales Support at EIPNZ. "This was no easy feat, but one that satisfied our clients and one we are very proud of."

Rotor Journal spoke with some of Eurocopter's customers to take a closer look at helicopter operations in New Zealand.

Mitre Peak, Milford Sound and its airport – Fiordland National Park.



Ultimate Hikes

A Eurocopter customer since 2004, Ultimate Hikes is the only company to provide guided walks and fully catered accommodation on the Routeburn, Milford and Greenstone Tracks, located in the remote Fiordland and Mount Aspiring National Parks – an area reachable only by helicopter. The team delivers large loads of supplies – up to 1,000 kg each – by long line to lodges on the trails and also provides transportation services for hikers to the region, a UNESCO World Heritage Site. The Ultimate Hikes team relies on the safety, reliability, and payload capacity of their AS350 B3. “The beauty of this aircraft is that it can lift and carry the loads and still move quickly, making our operations quite efficient,” explains Noel Saxon, general manager of Ultimate Hikes. Johnny Haora, the company’s primary pilot, enjoys the diversity of his helicopter missions. “Every day is different,” he recalls. “One day I might haul building materials and the next I may deliver new boots to distressed hikers on the trail (true story).”



Skywork Helicopters

A Eurocopter customer for 14 years headquartered in the Auckland/Northland region, Skywork Helicopters specializes in a wide mix of helicopter operations. “A typical day could start out with a construction precision lifting mission, followed by the delivery of servicemen to a remote site for electrical line servicing and finally a late afternoon call for fire attack support,” explains Miriam Stephenson, CEO and company accountant at Skywork. “Consequently, our job requires a lot of organization and flexibility. Our hel-

icopters must be reliable, highly capable, robust, and easy to operate. We have found that Eurocopter products, especially our fleet of three AS350 B3s and two AS350 BAs, deliver on all these points.” Skywork also specializes in professional services for specialized forestry and agricultural operations as well as heli-fishing.



Bruce Henley, private owner

Based in Lake Wanaka, private owner Bruce Henley chose the EC120 to explore the South Island's vast wilderness. A mountainous region with an abundance of lakes, fiords, glaciers and rivers, the area around Lake Wanaka offers a challenging environment with breathtaking scenery. "Helicopters provide the ultimate means of access to the mountains, but it is unforgiving country and

should be treated with respect," explained Mr. Henley. "Preparation and advanced mountain training are paramount for both safety and enjoyment." The open-cabin format and large cargo hold of the EC120 were key selling points for Mr. Henley. "The EC120 is the perfect helicopter for private operators – it's modern, spacious, quiet, comfortable, economic and fast."



© Colin Hunter



© Advanced Flight

New Zealand is the country with the highest ratio of helicopters to people, with **750** aircraft for its **4.1** million inhabitants.

Advanced Flight Ltd.

"We are in the people business," explains Keith Stephens, managing director of Advanced Flight, which has been a Eurocopter customer for the past 10 years. "Passenger transport is our no. 1 mission." Headquartered in Auckland, Advanced Flight provides passenger transportation in the region, known for its scenic coastlines. Advanced Flight was the first operator of the EC130 in Australia and New Zealand, and today has a total fleet of six EC130s, one AS355 NP and one EC145, which are showcased in their award winning purpose built Auckland Heliport. The EC130 is the ideal single-engine transportation helicopter. "Our passengers enjoy the spacious cabin, and our pilots enjoy the power!" remarks Mr. Stephens.



CHECK OUT THEIR WEBSITE
WWW.ADVANCEDFLIGHT.CO.NZ



CANADA

Article **RÉGIS NOYÉ** Photo by **VITEK ZAWADA**

On December 9, 2010, Eurocopter Canada Limited (ECL) delivered the 600th Eurocopter helicopter in the Canadian market. The powerful single-engine AS350 B3 AStar/Ecureuil was handed over to Héli-Inter Inc., a major operator in Quebec that is a member of Groupe Placement B. Allard.

DELIVERY OF THE 600TH EUROCOPTER HELICOPTER

The delivery was particularly important not only for ECL but also for Groupe Allard, whose fleet of 86 helicopters is the second largest in Canada.

A 51% MARKET SHARE IN QUEBEC

"This delivery proves once again that ECL is fully capable of satisfying the Canadian market, which is particularly demanding due to the wide expanses of territory and the extreme weather conditions," stressed Guy Joannes, president and CEO of ECL, during the ceremony. Thanks to the efforts of ECL, which celebrated its 25th anniversary in 2009, Eurocopter now holds 51% of the turbine helicopter market in Quebec.

Groupe B. Allard has five subsidiaries in Canada and now operates 49 AS350 AStar/

Ecureuils, which the company says "are the very basis of our safe and reliable operations". The new AS350 B3 AStar/Ecureuil, which Héli-Inter will use mainly for mine prospecting missions, "is a logical step in the continuing development of the Group's helicopter business, as the helicopter's added power will increase the range and flexibility of Héli-Inter's services".

Héli-Inter, specialist in a wide range of aerial lifting missions, already operates a fleet of 44 helicopters, including 23 AStar/Ecureuils and two twin-engine AS355 TwinStar/Ecureuils, out of two bases in Quebec.

THE BEST IN ITS CLASS

The AS350 B3 AStar/Ecureuil is a leader among high-performance single-engine

helicopters, offering impressive power and unrivalled reliability. It can reach speeds of up to 140 kts and can carry a pilot and five passengers or sling loads of up to 1,400 kg (3,086 lbs). Its powerful Turbomeca Arriel 2B1 engine with 850 hp has dual Full Authority Digital Engine Controls (FADEC) and dual hydraulic lines for power control.

The new helicopter delivered to Héli-Inter is also equipped with a plethora of special options designed by Eurocopter Canada for demanding utility missions: a large window in the cabin floor, a rear cargo door that opens laterally to facilitate loading operations and modular containers on each side of the cargo hold that increase its capacity by 80% compared to the standard AS350. ■

JEAN BOULET, A RECORD-SETTING PILOT

Article **DANIEL LIRON**

Photo by **JÉRÔME DEULIN/EUROCOPTER**

The helicopter world is mourning the loss of Jean Boulet, who passed away on February 15 at the age of 90. *Rotor Journal* pays tribute to a man respected both for his courage and his modesty.

After graduating with an engineering degree from France's prestigious École Polytechnique and Sup'Aéro schools, Jean Boulet went on to become one of the world's greatest helicopter test pilots. Although he was far too modest to admit it himself, Mr. Boulet made one of the most important contributions to the development of the helicopter industry—both in France and throughout the world. He signed on at the SNCASE in 1947 and was placed in charge of the future testing for the helicopters that were then in the development stage: the SE 3101, which he presented at an air show in 1948, and the SE 3000. He was then tasked with performing acceptance flights on Vampire and Mistral jet-engine fighters that were built in Marignane under license. When an S-55 Sikorsky had an accident during a public presentation, the president of SNCASE Georges Hérel asked his pilots, who up until then had been flying both helicopters and airplanes, to specialize in one of the two machines in order to reduce risks.

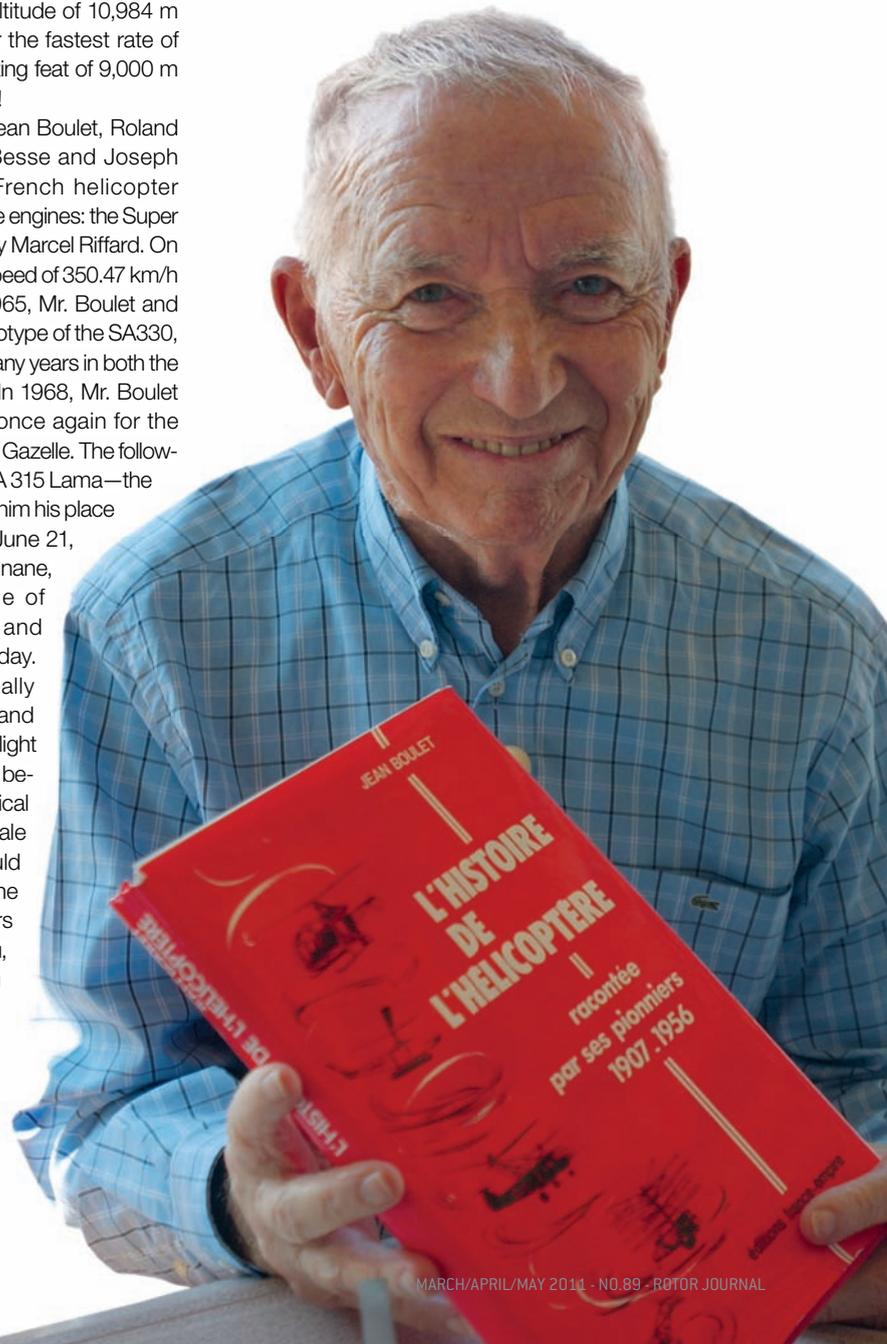
A CAREER DEDICATED TO FRENCH HELICOPTERS

Jean Boulet alone opted for the helicopter, and would remain faithful to rotorcraft throughout his entire career. In 1953, he was appointed the director of the SNCASE helicopter test center. That same year, he flew the prototype for the first Alouette, the SE 3120, 12 times around a closed loop in just over 13 hours, covering 1,252 km at an average speed of 103 km/h and smashing the record previously set by the Americans with a Sikorsky R-5. On March 12, 1955, Mr. Boulet took to the skies in an Alouette II powered by an Artouste turbine engine and reached an altitude of 8,209 m. As their machines continued to set new records, senior management at SNCASE began exploring the commercial possibilities of their aircraft. The SE 3131 Gouverneur, which performed its

maiden flight on May 16, 1957, was presented at the 20th Paris Air Show in Le Bourget. An over-powered Alouette II, the precursor of the Lama, rolled off the production line on June 13, 1958. It reached an altitude of 10,984 m and set three records for the fastest rate of climb—including an amazing feat of 9,000 m in 17 minutes 43 seconds!

On December 7, 1962, Jean Boulet, Roland Coffignot, Jean-Marie Besse and Joseph Turchini flew the first French helicopter equipped with three turbine engines: the Super Frelon, which was faired by Marcel Riffard. On July 23, 1963, it flew at a speed of 350.47 km/h to set a new record. In 1965, Mr. Boulet and Mr. Coffignot flew the prototype of the SA330, which would also serve many years in both the civil and military sectors. In 1968, Mr. Boulet returned to the cockpit once again for the maiden flight of the SA 341 Gazelle. The following year, he flew the first SA 315 Lama—the helicopter that would earn him his place in helicopter history: On June 21, 1972, in Istres, near Marignane, he reached an altitude of 12,440 m in the Lama, and this record still stands today. In 1975, Jean Boulet finally hung up his flight jacket and retired as test pilot at the flight test center. He would leave behind him a wealth of technical know-how that Aerospatiale and later Eurocopter would benefit from to develop the widest range of helicopters in the world. Hats off to you, *Monsieur Boulet!*

Taken from the article "Jean Boulet, 27 years beneath the rotors" (in French) by Daniel Liron, aeronautics journalist at *HELICO-REVUE*.





THE AAS-72X A STRONG SOLUTION FOR THE U.S. ARMY

Articles
ERIN CALLENDER
REGINA LANGE

EADS North America conducted the first flight of the Armed Aerial Scout (AAS) 72X Technical Demonstration Aircraft (TDA) at American Eurocopter's facility in Grand Prairie, Texas on December 7, 2010.

The 40-minute flight of this first TDA demonstrated the integrated targeting sensor, manned/unmanned teaming (MUM-T) and communications and navigation capabilities of the AAS-72X. A total of three TDAs are currently being developed and tested

to provide a strong solution for the U.S. Army's Armed Aerial Scout mission requirements.

The AAS-72X, a twin-engine, multi-role helicopter offering a large cabin and impressive high and hot performances, is a highly capable helicopter solution for the U.S. Army. This aircraft offers a low-risk evolution, as it is derived from the same family of helicopters as the UH-72A Lakota LUH⁽¹⁾ - the most recent and highly successful program for the U.S. Army. "This is a significant milestone for our industry team as we further demonstrate

the capabilities of our aircraft to meet the Army's requirement," said Sean O'Keefe, CEO of EADS North America. "We're pleased with our progress and remain fully committed to developing a solution for the AAS mission."

A HIGHLY QUALIFIED INDUSTRY TEAM

To meet the challenge at hand, EADS North America has teamed up with both American Eurocopter and Lockheed Martin. The team will develop the three aircraft in order to demonstrate the total capability of the AAS-72X with a full Mission Equipment Package (MEP).

Lockheed Martin, which has a 25-year legacy of expertise in Army aviation mission equipment components and subsystems

integration, will be integrating the MEP for the aircraft, and has developed the MEP Systems Integration Laboratory at its Orlando, Florida facility.

Production of the AAS-72Xs will take place at American Eurocopter's Columbus, Mississippi site, where UH-72As are currently assembled for the U.S. Army. American Eurocopter has delivered some 146 UH-72As on time and within budget to date.

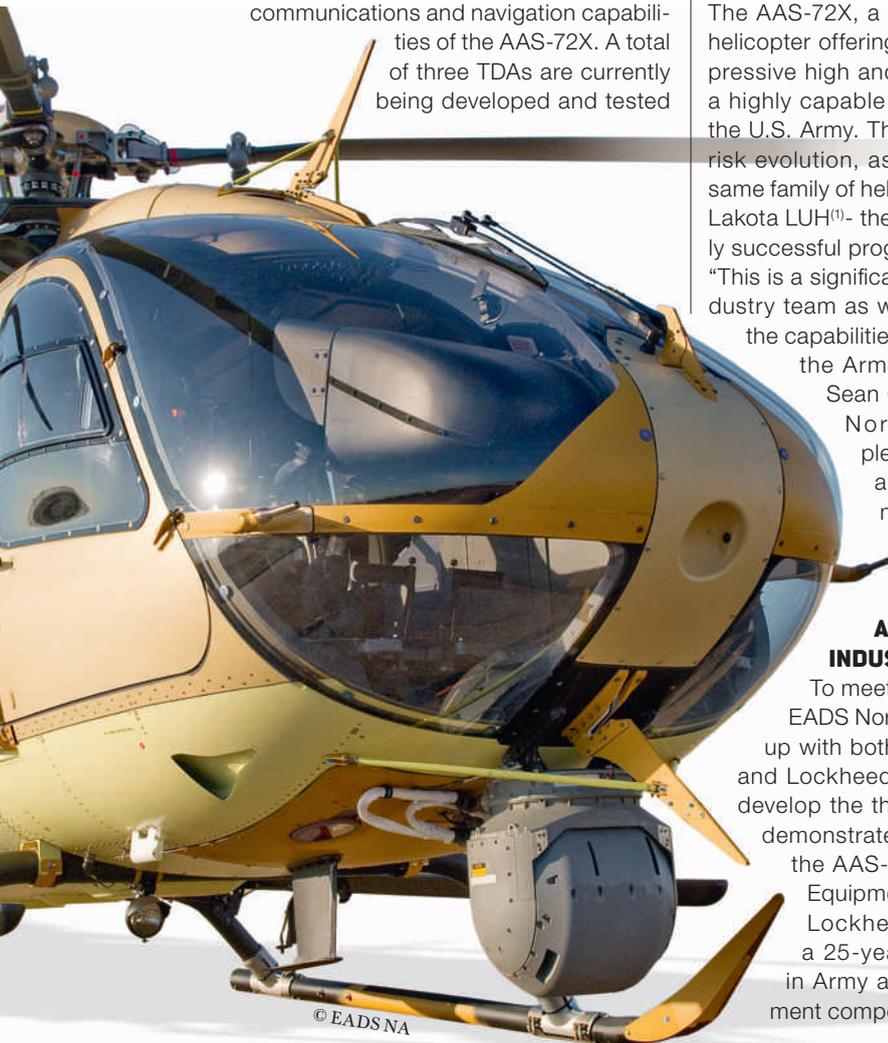
ABOUT THE MISSION

After the former Armed Reconnaissance Helicopter program to replace the OH-58D Kiowa Warrior was cancelled in October 2008, the U.S. Army issued a sources sought query to solicit possible solutions for a replacement aircraft meeting the AAS requirements.

Exploring both manned and unmanned aircraft, the Army's requirements include a platform with an endurance greater than 2 hours, the ability to fly at 6,000 km in 95 °F (35 °C) and the ability to carry a mission equipment package (MEP) of 2,300 pounds (1,043 kg), according to EADS North America's Chief Operating Officer David Oliver. Results of the query are expected for release in April of this year.

Subsequent test flights of the AAS-72X TDAs are expected to continue in 2011 in order to demonstrate additional capabilities required by the U.S. Army.

(1) Light Utility Helicopter



© EADS NA

TWO STRATEGIC AGREEMENTS SIGNED

KAZAKHSTAN

A shareholders agreement was signed on January 27, 2011 between Eurocopter and Kazakhstan Engineering. This agreement comes after the signature on October 27, 2010, for the creation of a joint venture between the two companies. Kazakhstan Engineering will assemble, customize and maintain the EC145s in Kazakhstan, as well as provide training for pilots and technicians in Russian. A second agreement was signed that same day by Eurocopter, EADS and Kazakhstan's ministry of defense for the purchase of 45 EC145s. These aircraft are to be assembled in Kazakhstan and will carry out government missions across the country. In addition to its cockpit, avionics and rotor design, the EC145 was also selected for its ability to adapt to the harshest environments, such as the extreme cold encountered in Kazakhstan.

In the heart of Central Asia, Kazakhstan is the second largest of the former Soviet republics after Russia. The country's vast energy and mineral reserves have been stoking the fast-growing national economy, which is now attracting substantial foreign investment. In both strategic and commercial terms, Kazakhstan is an important new partner for Eurocopter in the Central Asia region.



FINAL EC135s DELIVERED

POLAND

The Polish Ministry of Health received their final two EC135s in December of last year. The complete fleet of 23 EC135s is fully operational for Lotnicze Pogotowie Ratunkowe (LPR), Poland's public air medical rescue operator. Working out of LPR's 17 bases nationwide, these aircraft will replace the aging Mi-2s and represent a major step in the modernization of the country's emergency medical services (EMS) network. Poland is one of the world's largest users of this helicopter in its new-generation EMS configuration, and the Polish aerial medical evacuation system is now fully compliant with European regulations. The technical support for LPR's EC135s is provided by Heli Invest, a Eurocopter distributor and certified maintenance center based in Warsaw.

FIRST FLIGHT OF THE SURION PT4

KOREA

The Korean Helicopter Program recently celebrated the maiden flight of the 4th development prototype of the KUH⁽¹⁾ "Surion", which took place in Sacheon, Korea on October 28, 2010. The four prototypes will remain busy in the year ahead, continuing with flight tests in order to finalize development and correct any points from the initial operational evaluation (IOA) performed in September 2010. The flight domain will also be extended, and qualification procedures should begin for all major functions, including Eurocopter's autopilot system. A second operational evaluation phase is set for mid-2012, with the completion of development and qualifications expected to follow – right on schedule.

(1) Korean Utility Helicopter



STATE-OF-THE-ART NORTH SEA SERVICE CENTER IN ABERDEEN

Article
REGINA LANGE

Photo by
KEN TAYLOR

EUROCOPTER UK

On February 1, Eurocopter UK inaugurated the new service and support center facility located at Dyce Airport in Aberdeen, Scotland. Aberdeen is the heart of the North Sea oil and gas industry and home to major offshore helicopter operators as well as the emerging wind farm sector.

The strategic location of this new service center allows Eurocopter to be present at the largest heliport in Europe and in closest proximity to its customers' operations. With a total of 450 helicopters in operation by 150 customers, Eurocopter has the largest fleet in the United Kingdom. Eurocopter aircraft make up some 80% of the nation's offshore fleet, 70% of the country's emergency medical service fleet and 75% of the police and law enforcement fleet.

The North Sea Service Center is a multi-functional facility containing a 450 square meter simulator building, a 900m² industrial surface for logistics and component MRO as well as 450 m² for customer facilities, offices and training rooms. It offers around-the-clock logistics and technical support, training and maintenance, repair and overhaul.

"The new facility underlines Eurocopter's commitment to offer services and simulator training as close as possible to the operators, making their operations safer, more efficient and more eco-friendly," explained Markus Steinke, managing director of Eurocopter UK.

NEW EC225 FULL FLIGHT SIMULATOR (FFS)

The EC225 simulator features a full-motion system with six degrees of freedom, an instructor station, simulation of all systems and optional equipment solutions, an avionics system and contains a full replica of the EC225 cockpit. Additional features include realistic sound and vibration, a visual system field of view of 210° horizontal and 80° vertical - which exceeds the highest FFS Level D require-



ments. A 50° vertical field of view located below the horizon gives a real "look down" capability for SAR and night helideck landing training. The visual database features the exact replica of airports, helipads, oil platforms and ships as experienced in the North Sea, and is compatible with FLIR⁽¹⁾ and night vision goggles (NVG) operations.

"Our customers have been telling us they need easier access to training, notably to simulators," said Eurocopter CEO Lutz Bertling. "We have listened, and we are responding to those needs."

(1) Forward looking infrared



© Watras

The EC225s operated by the French Navy have been in the spotlight recently, as this marks the first time the navy has used helicopters from Eurocopter's civil range.

THE EC225 EARNS ITS STRIPES WITH THE FRENCH NAVY

Article
ALEXANDRE MARCHAND

Since the spring of 2010, Fleet 32F of the French Naval Aviation has been operating two EC225s out of its base in Lanvéoc-Poulmic (Brittany) for search and rescue missions. To fulfill this vital role, the helicopters must be available around the clock, 365 days a year for both day and night missions.

Patrick Paul, Support and Services quality manager at Eurocopter in Marignane, talked about the unique relationship between Eurocopter and the French Navy: "The MCO⁽¹⁾ contract signed between Eurocopter and the French Navy includes a very unique maintenance and service plan, based on a dedicated CAMO⁽²⁾ platform. It includes guarantees from Eurocopter concerning the airworthiness management and maintenance for the EC225s, and also a guaranteed availability rate for the helicopters. To put it simply, we will be monitoring the airworthiness status of the helicopters in real time and carrying out any necessary in-service maintenance."

This new monitoring plan is based on a

maintenance program that has been developed in close collaboration between Eurocopter and its customer, in compliance with civil regulations in Europe (EASA PART. M)⁽³⁾. As part of the program, any events that occur which may affect helicopter operations will be closely monitored. Such events may include detected failures, or any new modifications or directives that must be applied to the helicopters.

"In addition to airworthiness management, we also perform maintenance work on the helicopters in compliance with the PART.145 standard defined in the EASA civil regulations," added Mr. Paul. "Eurocopter technicians are on permanent assignment in Lanvéoc-Poulmic to act as the interface with the Eurocopter maintenance platform. They provide the latest maintenance data required for airworthiness management and also work closely with the Navy's qualified EC225 technical support teams to perform operational (line) and scheduled (base) maintenance on the helicopters."



© Jérôme Bonnin

By outsourcing its support services, the Navy can fully concentrate on its operational missions. "This is a great example of the new services being offered by Eurocopter," concluded Mr. Paul, "and an excellent opportunity for us to work even closer with our customers".

(1) Maintaining in operational conditions
(2) Continuing Airworthiness Management Organization
(3) European Aviation Safety Agency

NEW FOR 2011

Article
**ALEXANDRE
MARCHAND**

THE EUROCOPTER RANGE

Improving performance levels and reducing operating costs are major objectives for Eurocopter, which is why the Group will be enhancing several helicopters in its range in 2011. In addition to the EC145 T2, four other families will benefit from this new policy: the Super Puma/Cougar, Dauphin/Panther, Ecureuil/Fennec and EC135/EC635.



© Patrick Penna/Eurocopter

The Ecureuil/Fennec Family

The Ecureuil family will receive new engines, as the Turbomeca Arriel 2C1 will be replaced by the Arriel 2D to create the AS350 B3e⁽¹⁾ Ecureuil and the AS550 C3e Fennec (military version). "The new engine will enable us to reduce operating costs while maintaining performance levels—even when the helicopter is operating with sand filters," explained Ecureuil Marketing Product Manager Eric Tresamini. "A new option on the AS350 B3e Ecureuil and AS550 C3e Fennec will also make it possible for the pilot to use maximum takeoff power for thirty minutes, compared with just five minutes today." Considering that the TBO⁽²⁾ for the engine has also been increased, the maintenance costs will be considerably reduced. Modifications made to the tail rotor will also offer many advantages: less required maintenance work, increased reliability as well as a simplified pre-flight test procedure and the management in the case of a hydraulic failure. Benefiting from the vast amount of experience gained on the Ecureuil, Eurocopter will be lengthening the intervals for scheduled maintenance on the "evolution" versions: 150 hours instead of 100 and 600 hours instead of 500 for periodical inspections. Deliveries of the new AS350 B3 Ecureuil version will get underway in 2011.

(1) "e" for evolution

(2) Time Between Overhaul

The EC135 Family

The EC135 family will also see the "e" suffix added to its name, as the performance levels for the helicopter will be significantly increased. "For some types of missions, 40 to 60 kg of payload were not used on the EC135," said Jérôme Combe. "Using the experience we've gained with the twin-engine, we were able to increase the maximum takeoff weight by 40 kg to 2.95 metric tons. The additional 40 kg will enable the EC135 P2e and T2e to carry an additional passenger." The modification will be certified in 2011, and will then be either standard for all new EC135s or available as a retrofit for helicopters already in service.

"For all these helicopters, Eurocopter will be proposing major evolutions that will result in an entirely new standard. This is not a question of offering new optional equipment for the helicopters, but rather of modernizing the standard equipment so that we can offer better performance levels at a lower cost."

Jérôme Combe, in charge of marketing development for new product policies at Eurocopter.



© Anthony Pecchi

The Dauphin/Panther Family

The Dauphin has certainly proven its worth, with more than 1,000 helicopters delivered. The new-generation AS365 N3e⁽¹⁾ Dauphin and AS565 MBe Panther will make the family even more competitive. Marketing Product Manager Véronique Jaffé talked about the changes: “The new versions, which will be available in 2013, will help operators perform even more demanding missions (“higher and hotter” conditions), while also offering increased safety. In addition to a maximum take off weight increase of 4,500 kg, the AS365 N3e Dauphin will be equipped with new Turbomeca Arriel engines with a dual-channel FADEC system, offering redundancy and more safety. The main gearbox and the rotor mast will also be upgraded and reinforced to handle the increased power and weight.” The performance levels will thus be vastly improved, with a payload that may include up to three additional passengers for a CAT A helipad in SL/ISA+20 conditions (or an additional 280 kg at 5,000 feet, ISA+20). “The financial gains will also be noticeable,” Ms. Jaffé also pointed out. “We foresee a 10% reduction in direct maintenance costs.” Last but not least, the AS365 N3e Dauphin and AS565 MBe Panther will be equipped with the automatic pilot of the EC225, and the standard cockpit configuration will now include a VEMD, an ISIS⁽²⁾ and a 10.4-inch screen for displaying digital maps that used to be offered as optional equipment. The screen will also be used to display weather radar, H-TAWS and TCAS⁽³⁾ functions.

- (1) “e” for evolution
- (2) Vehicle Engine Management Display and Integrated Standby Instrument System
- (3) H-TAWS: Helicopter Terrain Awareness and Warning System/
TCAS: Traffic Collision Avoidance System

The Super Puma/Cougar Family

In 2008, the French Army Air Corps (ALAT) and the French Air Force decided to modernize their Cougar fleets⁽¹⁾ for two main reasons. First, to reduce risks of obsolescence, and second, to provide the helicopters with all-weather capabilities that made them completely compatible with new generation avionics and optronics. As a result of the work, the AS532 AL+ Cougar was born. It is now equipped with avionics and an automatic pilot very similar to those of the EC725. The Super Puma is also being fitted with the modernized equipment, and following certification will be re-baptized the AS332 L1e⁽²⁾ or AS332 C1e (for the shorter cabin version). “With the AS332 L1e/C1e Super Puma and the AS532 AL+ Cougar, civil and military operators will now have access to the best automatic pilot on the market, which has proven its worth in Afghanistan on the EC725,” said Jérôme Combe. “The system offers takeoff and landing capabilities coupled with the automatic pilot for extremely low visibility (brown/white-out) conditions, automatic engine failure management and protection for the flight envelope— giving operators greater mission capabilities and improved flight safety.” The new version will be certified in mid-2011 and is now offered for sale as the helicopter’s base configuration.

- (1) Currently 23 and 3 helicopters, respectively
- (2) “e” for evolution



© Anthony Pecchi

FIRST FLIGHT OF THE TIGER HAD FOR FRANCE

Articles
CHRISTIAN DA SILVA
ERIN CALLENDER

The first French Tiger in the HAD⁽¹⁾ version performed its first pre-delivery flight on December 16, 2010, in Marignane. Representatives of various French and Spanish authorities were on hand for the occasion: the OCCAR⁽²⁾, the Tiger program directorate from the DGA⁽³⁾, the Oficina de Programa de Helicóptero and the INTA⁽⁴⁾, Spain's certifying authority. Following the technical evaluation performed during the one hour and 35 minute flight, the members of the Eurocopter crew (pilot Fabrice Bonne and flight engineer Laurent Palcy) said they were very satisfied with the helicopter's steady flight behavior and performance levels. This helicopter is the third platform being used to step up the certification and qual-

ification process for the HAD version. Two other platforms have already performed flights: the HAD E01 in Albacete, Spain, and the PS1 that is performing test flights in Marignane with the new MTR 390-E engines. The main features that distinguish the French HAD from the Spanish version are its countermeasures system and its Hellfire air-to-ground missile system.

DELIVERIES ON THE HORIZON

Over the next few months, this initial French Tiger in the HAD version will be following an extremely busy test program leading up to the Block 1 certification/qualification (intermediate capabilities). Key steps in the program include the HIRF⁽⁵⁾ and HERO⁽⁶⁾ testing at the CEAT

test center in Toulouse. Next, the MMI (Man Machine Interface) will be evaluated, and the Hellfire missile system will then undergo a qualification firing campaign in Sweden in 2011.

Eurocopter will be ready to deliver the first aircraft in the Block 1 configuration in 2012, and Block 2, which represents the final qualification phase after all testing has been completed, is slated for 2013. ■

- (1) Hélicoptère Appui Destruction/Support and suppression helicopter
- (2) European Organization for Joint Armament Cooperation
- (3) The French defense procurement agency
- (4) Instituto Nacional de Técnica Aeroespacial
- (5) High Intensity Radiation Field (EMI/EMC testing)
- (6) Hazards of Electromagnetic Radiation to Ordnance



“This is an important milestone for the HAD version of the Tiger, as it will enable us to really pick up the pace for the qualification process. We were able to perform the flight right on schedule thanks to excellent cooperation with all the teams, including the design offices in France, Germany and Spain.”

Gérard Cuadrado, Eurocopter chief engineer for the Tiger program.

FOCUS ON...

French Government: The First Tiger Upgrades Underway

The first 15 Tigers that France received between 2005 and 2008 were delivered in intermediate configurations that did not fully comply with contractual specifications. To meet its commitments, Eurocopter has begun upgrading the helicopters to the final qualification established at the end of 2008, known as Standard 1.

Eurocopter began the upgrade program for the French Tigers last year. The first two helicopters were transferred to Marignane from the Franco-German piloting school in Le Luc en Provence on October 22 and November 16, 2010. Work got underway on the first Tiger in mid-November when the equipment to be upgraded was removed and examined. It will take approximately one year to finish the upgrades on each aircraft, with the first Tiger slated for return to the customer in January 2012. The upgrade program for the 15 Tigers should be completed by early 2016.

WATCH THE VIDEO OF THE FIRST FLIGHT OF THE TIGER HAD VERSION ON ROTOR ONLINE
WWW.EUROCOPTER.COM

© Anthony Pecchi



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SHOWCASING THE TIGER ARH

AUSTRALIA

The ARH Tigers of the Australian Army showcased their capabilities in a complex war environment during Exercise Hamel, which took place from October 2 to November 5, 2010 in Queensland, Australia. Designed to allow allied forces to train together in an integrated battlefield and prepare for the future of warfare, Exercise Hamel brought together more than 6,000 members of the Australian Defence Force and troops from the United

States and New Zealand. The culmination of the month-long event was marked with a live-fire demonstration of the Australian Army, showcasing the firepower of the ARH Tigers. The machines flew more than 350 hours throughout the exercise, according to Mal Benfer, ARH Program director at Australian Aerospace. "Exercise Hamel highlighted the Tiger's immense capabilities, particularly as part of a coordinated military effort," he concluded.

THE NH90 TTH

On December 17, 2010, the TTH⁽¹⁾ version of the NH90 developed for the French armed forces performed its first flight in Marignane. During the 50-minute flight, the crew performed checks on the dynamic assemblies, evaluated the helicopter's maneuverability, and also conducted the initial testing on the avionics systems. The helicopter then travelled to the flight test center in Istres, southern France, to continue the flight test campaign. France has ordered a total of 34 NH90s in the TTH version. The ALAT⁽²⁾ is scheduled

to receive the first NH90 in this configuration by the end of 2011. Another first flight took place on that same day. The prototype of the NH90 in the TTH version for Spain took to the skies, equipped with GE CT7-8F5 engines. The helicopter will be transferred in the second quarter of 2011 to the Eurocopter plant in Albacete, Spain, to continue its development flight testing. Upon completion of the tests, the Spanish Ministry of Defense will be issuing a full qualification for the helicopter. Deliveries of the first NH90s in the TTH

version to Spain's armed forces are slated for the end of 2012. The first two Spanish NH90s were manufactured in Marignane, while production of the country's 43 other NH90s has already begun on the assembly lines in Albacete.

(1) Tactical Transport Helicopter
(2) The French Army Air Corps



WATCH THE VIDEO OF THE FIRST FLIGHT OF THE NH90 TTH VERSION ON ROTOR ONLINE
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THE EC135 TACKLES A NEW MISSION

The utility company Southern California Edison (SCE), which provides electrical power in the Southwestern United States, decided a few years back to only use twin-engine helicopters to perform maintenance work on its high-voltage power lines. SCE has placed its trust in the EC135 P2i, marking the first time that the twin-engine will be carrying out this type of mission.

Article **RÉGIS NOYÉ** Photos by **SOUTHERN CALIFORNIA EDISON**



“It was back in the late 1990s that we first began studying the feasibility of our technicians performing maintenance on power lines and transmission towers in helicopter slings,” explained Arthur Bradbury, manager of Aircraft Services at SCE. “Right from the outset, we decided to take the maximum amount of precautions to reduce risks, which is why we opted for twin-engine Category A helicopters.”

The FAA does in fact allow these types of flights with single-engine Category B helicopters, based on an interpretation of the FAR 133 Regulations. “It’s obviously less expensive to use a single-engine helicopter, which is an important element to consider,” continued Mr. Bradbury. “But we still thought it was a wiser choice to adhere to much stricter regulations. We couldn’t take the risk of having an engine failure with a single-engine helicopter.”

In 2005, SCE evaluated several light twin-engine helicopters offering One Engine Inoperative (OEI) performance levels that met or surpassed the Category A requirements. A short list of five

helicopters was established (which included three Eurocopter aircraft). The final nod went to the EC135 P2i, which won out for many reasons. It offers excellent OEI performances and high safety levels, can easily simulate a single-engine failure during training flights, and also has a roomy cabin which can be adapted to a wide range of missions. In addition, it is equipped with a dual cargo hook system that was designed and certified for work with personnel suspended from a sling. At the time, SCE had four AS350 B3 Ecureuil/AStars that already were the workhorses of its fleet. They are used for a variety of technical and transport missions, such as power line monitoring. After certifying the Transmission Craft and SCE pilots, SCE began flying the EC135 for transmission missions at the end of 2010⁽¹⁾. These will help SCE’s Transmission Business achieve increased efficiencies and overall improved effectiveness associated with much of its operation. Maintenance and inspections can be enhanced. Initially, SCE will utilize this method to transport and land transmission craft employees

on top of its steel towers. Additional transmission work methods are being developed as well.

The two EC135s currently being operated by SCE have also expanded the company’s range of helicopter missions to include instrument flying. The AS350 Ecureuil/AStar remains the favored choice of the flight crews for high altitude missions, external load and surveillance missions thanks to the great visibility it offers. Photographers on the other hand have been won over by the EC135, as its two rear side doors can easily be opened for photo shoots.

As this new acquisition for power line maintenance clearly demonstrates, the scope of the EC135 has once again expanded to include a market that has traditionally been reserved for single-engine helicopters, as it offers even better safety for utility companies. ■

(1) Transmission refers to high voltage lines, usually from 66,000 to as high as 1,200,000 volts. These lines transfer extra high voltage long distances between substations. Distribution lines transfer electric from substations to businesses and homes. Transmission craft refers to the personnel trained to work on transmission lines and structures.

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