

MAGAZINE

ROTOR

THE WORLD OF HELICOPTERS BY EUROCOPTER - NO. 94 - MARCH/APRIL/MAY 2013

EC135T3/P3
BETTER PERFORMANCE
LEVELS

HELIBRAS
THE RECIPE FOR SUCCESS

THE EC175

RISES TO THE CHALLENGE

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(THINK BUSINESS)

When it comes to gaining a competitive edge in commerce, you simply need the best.
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Invest in an EC130 T2.



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PROVIDING YOU WITH THE BEST MISSION CAPABILITY

Eurocopter is focused on its goal of becoming the rotorcraft industry's No. 1 vertical-lift solutions provider – evolving from the leading helicopter manufacturer into a true mission solutions provider. This vision is driven by Eurocopter's innovation, which is applied to design, systems integration, engines, avionics and services.

This is reflected in the EC175, which brings new performance levels and capabilities to the medium-sized twin-engine helicopter market segment.

The benefits of Eurocopter innovation start in the EC175's cockpit, where the advanced Helionix avionics suite provides significantly improved flight envelope protection, pilot assistance and situational awareness. Eurocopter innovation also makes the EC175 a smooth, quiet aircraft for passengers, while the helicopter's higher speeds and long range ensure it will be a truly versatile means of transportation.

As importantly, Eurocopter has placed emphasis on ensuring a successful service entry for the EC175 – supported by innovative support and services, along with the creation of training resources in proximity to customers.

In March, we brought the first production EC175 to the United States, and we were pleased by the very positive reviews received during its three-week demonstration tour with operators in the oil and gas sector, as well as law enforcement and providers of emergency medical

services. Feedback included high marks for the helicopter's responsiveness and cabin comfort, while its flight deck was judged as being unmatched by any other helicopter.

The EC175 is the first rotorcraft to be truly designed with you, our customers, in mind, benefiting from extensive consultation with operators and end users. What we heard during the EC175's U.S. demonstration tour confirms that we're on the right track by devoting our resources to ensure your success with Eurocopter helicopters – no matter what mission you fly.

Eurocopter has developed enormously over the past several years. Based on the EC175 and Eurocopter's broad evolution of its rotorcraft products and services, we are well prepared to serve you. With our engaged and professional teams, the future is in very capable hands as I leave the company to take on new responsibilities outside of the aviation sector. My successor is Guillaume Faury, who rejoins Eurocopter and brings hands-on experience in helicopter research and development, engineering, flight test and executive management.

I value the relationships that have been created with customers, operators and the industry during my six and a half years at the controls of Eurocopter. I thank you for your continued trust, and I wish all of you the very best in your endeavors. It was a great pleasure working with you. Thanks!

Lutz Bertling, *President and CEO of Eurocopter*

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© Tom Donoghue

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Nothing Like the EC130 T2

Maverick Helicopters, which operates tours out of the Grand Canyon and Las Vegas, Nev., is the first company to have received the newly enhanced EC130 T2 aircraft. As the largest EC130 operator in the tourism industry, Maverick knows a thing or two when it comes to choosing the best helicopter for the job.

08 UP ABOVE
Afghanistan: The Tiger Is Ready to Pounce

The moment of truth has arrived: As of January 30 of this year, the Tiger helicopter in its ASGARD configuration is on call in Afghanistan, ready to provide fire support for ground troops engaged with the enemy.



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12 FEATURED ARTICLES
THE EC175 RISES TO THE CHALLENGE



© Anthony Pecchi/Eurocopter

Eurocopter's civil range is welcoming a new member: the EC175, a medium-lift twin-engine helicopter with outstanding performance levels. The first series EC175 performed its maiden flight on December 5, 2012. It was a major milestone for Eurocopter and its Chinese partner in the program, AVIC, as the flight confirmed that all their efforts had finally paid off. The safest and most competitive medium-lift helicopter on the market, offering unsurpassed performance and comfort levels, has now taken to

the skies. But new challenges are on the horizon. Production will be ramping up, and the certification process must be finalized so that the first units can be delivered to customers. In parallel, innovative new Support and Services functions will be accompanying the program as it moves to the operational phase. On display at the Eurocopter stand at HAI 2013, the EC175 just concluded a four-week tour of the United States, including stops in Louisiana, Texas and Las Vegas for demonstration flights.

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The Panther MBe Flexes Its Muscles



© Anthony Pecchi/Eurocopter

The upgrading of the AS565 Panther MB has given birth to a new high-octane version of the ship-borne helicopter that offers higher performance levels and expanded operational capabilities.

- **Better Performance Levels for the EC135 T3/P3**
- **First Flight of a Spanish-Built NH90**

22 IN OPERATION
NH90 Program Moves Into High Gear

The NH90 has now entered service for many of its customers. A new milestone was reached at the end of 2012 when the first Nato Frigate Helicopter naval versions in their final configuration (known as "Step B") and the first Tactical Transport Helicopter land versions were delivered to Belgium.

- **Helistar: "No Support Means no Success"**

26 AROUND THE WORLD



Helibras: The Recipe for Success

With the new Helibras plant up and running, the Eurocopter subsidiary will now be manufacturing and assembling the 50 EC725s ordered by the Brazilian Armed Forces in 2008. The plant is also ready to provide all the related maintenance services.

- Eurocopter de México: Inauguration of New Site in Querétaro
- Starlite: Launch Customer for the New AS332 C1e Super Puma

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Helisim: Still in High Demand

Fourteen years after its creation, Helisim continues to set the pace in the helicopter simulation industry. *Rotor* sat down with Helisim CEO Patrick Bourreau to talk about the trendsetting training company.

- Mission Safety: Getting Back to Basics



29 2012 IN NUMBERS

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34 OFF THE BEATEN TRACK



The Ecureuil/ASStars of the Brazilian Navy Provide Crucial Support for Hospital Ships on the Amazon

The roar of the engines may frighten the locals, and the rotor downwash often raises clouds of dust, but that hardly deters the children from running to greet the tremendous bird as it swoops down from the skies. Even the women set aside their chores for a few moments to look on from their doorsteps. All have been eagerly awaiting the military helicopter's arrival. This is no ordinary machine – it's a Toucan, the nickname of the AS350 Ecureuil flown by the Brazilian Navy's HU-3 Squadron.

FOR MORE INFORMATION CHECK OUT

MAGAZINE **ROTOR** ONLINE



Watch a **VIDEO** of the

- EC130 T2 during a demonstration tour in the Dolomites (see pages 10-11)
- EC175 on an Oil & Gas mission (see pages 14-15)
- First flight of the NH90 manufactured in Spain (see page 21)



See more **PICTURES**

of the inauguration ceremony at the Querétaro plant (page 27)

READERSHIP SURVEY RESULTS PERFORMANCE UP TO PAR

A total of 212 replies were received in response to the *Rotor* 2012 readership survey. Of the responses, 75.5 percent were received by mail, while 24.5 percent were submitted online at www.eurocopter.com. The overall score given to *Rotor Magazine* by readers was 8.28 out of 10. A big thanks to all who participated!

2012 IN PICTURES

January 1: Eurocopter celebrates its 20th anniversary.

January 16: Eurocopter recognizes the German Federal Police for reaching the 100,000 total flight hour mark with its EC135 fleet.

February 12:

- 2 • Eurocopter unveils its new EC130 T2 with optimized performance, comfort and mission diversity at Heli-Expo – 105 orders are signed with launch customers.
- Milestone Aviation Group signs for 16 EC225s.



© Jack W. Skyles

1 **June 20:** The Eurocopter X³ hybrid aircraft begins a seven-week tour in the United States to demonstrate this advanced high-speed technology's unique operational capabilities for both civil and military customers.



© Jay Miller



© Jay Miller



© Eurocopter

February 13: Belgium's Noordzee Helikopters Vlaanderen orders 10 Eurocopter EC175 helicopters. Inaer confirms its order of 10 EC145 T2s.

March 1: EADS North America delivers the 200th UH-72A Lakota Light Utility Helicopter (LUH) to the U.S. Army.

- 3 **April 2:** EADS North America unveils its Armed Aerial Scout 72X+ (AAS-72X+), an armed derivative of the U.S. Army's UH-72A Lakota LUH.

April 17: Inauguration ceremony is held at Eurocopter Japan's brand new facility at Kobe Airport.

May 3: Eurocopter's X³ Development Team wins Howard Hughes Award for Outstanding Improvement in Helicopter Technology.

- 4 **May 6:** Eurocopter's German site in Donauwörth breaks ground for the Systemhaus building.



© Frédéric Lert

- 5 **May 10:** Kazakhstan signs a letter of intent to acquire 20 Eurocopter EC725 helicopters.

May 23: Eurocopter delivers the first Airbus A350 XWB jetliner passenger door, highlighting its innovative capabilities in composite technology.

July 25: Eurocopter bolsters its presence in Peru and opens its first Certified Services Center.

August 15: CALSTAR orders eight EC135's to standardize its fleet.

September 13:

- Med-Trans Corporation orders 16 EC135s to support its expanding business model.
- Eurocopter hands over its first Puma Mk2 aircraft (after installation of Makila and new avionics) to the UK Ministry of Defence.



September 12:

- ADAC Air Rescue signs a framework acquisition agreement with Eurocopter for the purchase of 14 EC145 T2 and three EC135 P2e helicopters.
- 6 • Eurocopter hands over the first upgraded CH-53GA transport helicopter to Germany's armed forces.



- 7 • Eurocopter delivers four Tigers to the German Army for deployment to Afghanistan.
- Eurocopter signs a Letter of Intent with 13 leading aerospace industry partners to cooperate on the Clean Sky 2 program.



September 18:

Eurocopter and the Royal Thai Air Force sign a contract for the supply of four EC725 helicopters, configured for search and rescue missions.

- 8 **September 26:** Eurocopter showcases the newly upgraded EC130 T2 with a special emphasis on its capacity for aerial work in a two-week European demo tour.

- 9 **October 3:** Eurocopter's Helibras subsidiary inaugurates a major new Brazilian assembly facility for EC725/EC225 helicopters in Itajubá.

November 8: Starlite Aviation Group becomes the launch customer of the new Super Puma AS332 C1e.

December 3: Eurocopter delivers the first two Royal Malaysian Air Force EC725s from an order for 12 helicopters.

December 21: The NH90 program achieved a new milestone with the delivery of Belgium's first NH90 Tactical Transport Helicopter (TTH) and the DGA's⁽¹⁾ first NH90 Nato Frigate Helicopter (NFH) in its new Step B version.

(1) French General Directorate for Armament



- 10 **December 5:** The first EC175 serial production aircraft makes its maiden flight.

THE TIGER IS READY TO POUNCE

AFGHANISTAN

Article REGINA LANGE
Photo by BUNDESWEHR RC NORTH PAO



The moment of truth has arrived: As of January 30 of this year, the Tiger helicopter in its ASGARD⁽¹⁾ configuration is on call in Afghanistan, ready to provide fire support for ground troops engaged with the enemy. The Tiger can perform a wide range of missions – patrol flights, protection for convoys, and armed escorts for other aircraft – and will be providing precious support to the 4,500 German troops currently stationed in the Hindu Kush. The deployment is likely to continue, as the German Bundestag voted by a large majority to extend the mission of the German forces in Afghanistan until 2014, although with the number of troops reduced to 3,300. Four Tigers have been sent to the theater of operations. Two of the

helicopters are on permanent call, while the other two are on reserve in case of technical problems. This means that from now on, there will always be a Eurocopter employee available in Afghanistan, to help quickly resolve any technical issues that arise and ensure spare part procurement in order to guarantee maximum availability for the helicopters. A 24-hour emergency hotline has also been set up to answer urgent questions and place orders for spare parts. ■■■■■

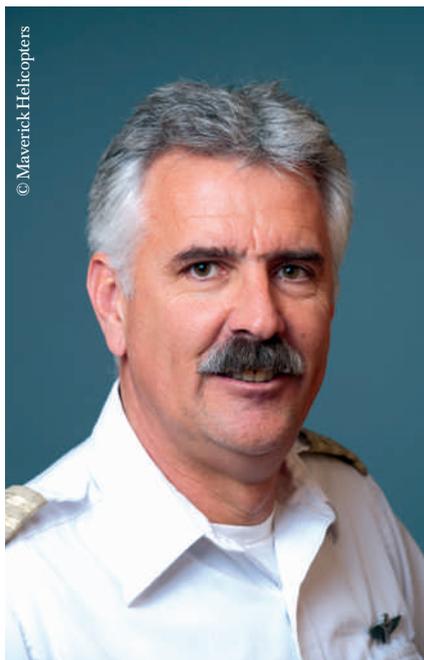
(1) Afghanistan Stabilization German Army Rapid Deployment: the ASGARD configuration for the Tiger includes sand filters, a mission data recorder, additional ballistic protection and a satellite radio system for encrypted communications with NATO partner countries.



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Article
ERIN CALLENDER

NOTHING LIKE THE EC130 T2



John Mandernach, Vice President of Maintenance for Maverick, talks about why the company continues to rely on Eurocopter products for their tourism operations.

Maverick Helicopters has the largest Eurocopter-only EC130 fleet. What is it about this helicopter that keeps you coming back?

John Mandernach: No one else in the industry can offer us an aircraft that meets

all of our needs at once. In the tourism industry, our main focus is on safety, performance and comfort. We need a VIP aircraft to offer our customers the best services, and the EC130 is the perfect solution. You cannot find another helicopter with as much cabin room, offering a comfortable and spacious ride, and visibility, thanks to the large and ideally placed windows. There's really nothing else like this helicopter. We currently operate 34 EC130s and have received the first EC130 T2 in the world, for which we have already logged close to 200 hours. We could not be happier with the new version of this aircraft and look forward to receiving the remaining nine on order.

As the very first customer to operate the EC130 T2, what are your impressions of this newly upgraded version of the proven EC130?

J.M.: We are confident in the reliability of the EC130 T2 as it is the next evolution of the EC130, which we already know so well. Our company is committed to excellence and safety, and we continue this commitment with the EC130 T2. The performance is great – it's faster, the anti-vibration system works very well, and I really love the environmental control system. I am convinced that the EC130 T2 is the best helicopter on the market. No one else can offer us what Eurocopter can.

What do you appreciate most about your long-standing relationship with Eurocopter?

J.M.: We participated early on with Eurocopter in the development of the new EC130 T2, building upon our years of operational experience with the EC130 B4. We are extremely pleased with how Eurocopter integrated the improvement we had requested into the aircraft to better fit our evolving needs. Eurocopter worked closely with us to develop a helicopter that exactly met our needs, and this is proof of the partnership that we have built together.

SPOTLIGHT ON...

Maverick Helicopters

Headquarters: Las Vegas, Nevada, USA

Fleet: 34 EC130s, 1 EC130 T2

Maverick Helicopters was founded in 1995 with one aircraft. It was one of the launch customers for the EC130 and took delivery of its first EC130 "EC0-Star" in 2003. Since then, the company has grown into the largest tour operator of EC130s in the tourism industry.

The EC130 T2 order is part of an upgrade and replacement program for Maverick's all-Eurocopter fleet.

Maverick Helicopters
currently operates
34 EC130s and
received the world's
first EC130 T2.



**WATCH A VIDEO OF THE EC130 T2
DURING THE DEMO TOUR IN THE
DOLOMITES ON ROTOR ONLINE**
www.eurocopter.com





THE EC175 RISES TO THE CHALLENGE

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**OPERATIONAL
PERFORMANCE: THE EC175
IS TOP OF ITS CLASS**

P. 16-17

**• HELIONIX TAKES FLIGHT IN THE EC175
• AIRCRAFT CERTIFICATION: A COMPLEX
BUT CRUCIAL PROCESS**



Article

REGINA LANGE

Photo by

ANTHONY PECCHI/EUROCOPTER

Eurocopter's civil range is welcoming a new member: the EC175, a medium-lift twin-engine helicopter with outstanding performance levels.

The first series EC175 performed its maiden flight on December 5, 2012. It was a major milestone for Eurocopter and its Chinese partner in the program, AVIC, as the flight confirmed that all their efforts had finally paid off. The safest and most competitive medium-lift helicopter on the market, offering unsurpassed performance and comfort levels, has now taken to the skies. But new challenges are on the horizon. Production will be ramping up, and the certification process must be finalized so that the first units can be delivered to customers (*see article, page 17*). In parallel, innovative new Support and Services functions will be accompanying the program as it moves to the operational phase (*see article, page 18*). On display at the Eurocopter stand at HAI 2013, the EC175 just concluded a four-week tour of the United States, including stops in Louisiana, Texas and Las Vegas for demonstration flights.

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**IMPORTANT
WORK BEHIND
THE SCENES**



© Anthony Pecchi/Eurocopter



WATCH A VIDEO OF THE EC175
ON AN OIL & GAS MISSION ON
ROTOR ONLINE
www.eurocopter.com

OPERATIONAL PERFORMANCE

THE EC175 IS TOP OF ITS CLASS

The EC175 test flights confirmed what Eurocopter engineers have been saying all along about its offshore mission capabilities: The medium-lift helicopter has a recommended cruise speed of 150 knots.

Article **REGINA LANGE**

The EC175 will initially be certified in its oil & gas configuration.

16

The number of passengers the EC175 can carry over an operating range of 135 nautical miles (Nm).



© Anthony Pecchi/Eurocopter

The unique design of the EC175's 5-blade Spheriflex rotor head combined with the suspension mountings on its main gearbox keep vibration and sound levels to a minimum.

The EC175 can carry 16 passengers over an operating range of 135 nautical miles (Nm). With its newly certified Pratt & Whitney engines, the helicopter offers excellent performance levels. At its maximum weight, it can perform an (H)OGE⁽¹⁾ takeoff at ISA+20°C⁽²⁾ up to an altitude of 4500ft. It also has a high power margin in One Engine Inoperative (OEI) conditions. These margins constitute an important safety guarantee during hoist operations and enable the EC175 to maintain hover flight or a rate of climb better than 500ft/min in ISA+20°C conditions at sea level. With its outstanding OEI capabilities, the helicopter complies with Performance Class 1⁽³⁾ criteria at its maximum takeoff weight (MTW) from a 100ft platform in ISA+20°C conditions. With its excellent MTW/payload ratio, the EC175 is perfectly positioned to surpass its direct competitors on the market.

GUARANTEED COMFORT

The newest member of the Eurocopter family offers a more spacious cabin and more volume per passenger than any of its direct competitors. In its 18-seat configuration, there are never more than four passengers in the same row. The unique design of the EC175's 5-blade Spheriflex rotor head combined with the suspension mountings on its main gearbox keep vibration levels to a minimum, regardless of the speed (with no active anti-vibration system), and minimize sound levels for greater comfort.

The EC175 will initially be certified in its oil & gas configuration, but with so much to offer, it will also be an ideal choice for many other types of missions, such as Search and Rescue, air ambulance, public service, VIP and corporate transport.

CUTTING-EDGE TECHNOLOGY FOR INCREASED SAFETY

The new Héliconix avionics system on the EC175 includes an optimized human-machine interface (see article, page 16) coupled with an extremely powerful four-axes autopilot, making the helicopter the new benchmark in terms of safety—even surpassing the EC225, which has been the reference in the field. Its cutting-edge technology means better flight envelope protection, better pilot assistance, and better information displays for overall situation assessment. The EC175 also comes equipped with an integrated Vehicle Monitoring System (VMS), redundant critical systems and an innovative new warning system. Other new features of the machine include the FPA⁽⁴⁾ and TRK⁽⁵⁾ autopilot functions, which can be used to define the angle of descent and flight path while taking into account drift and wind speeds. With its new avionics, which are currently undergoing certification in compliance with the latest international standards, the EC175 will be only the second aircraft after the Airbus A380 to meet these strict requirements, meaning even better passenger safety.

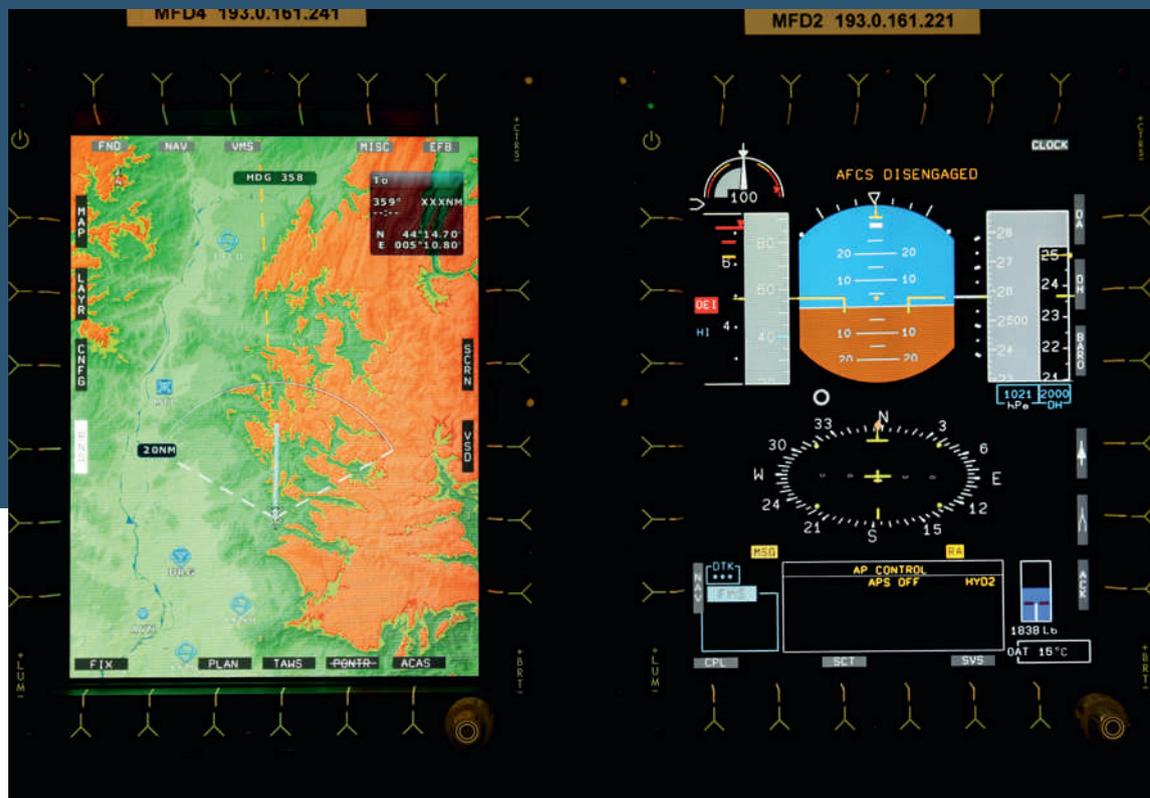


© Eurocopter

The EC175 offers a more spacious cabin and more volume per passenger than any of its direct competitors.

- (1) (H)OGE – (Hover) Out of Ground Effect – Near the ground, a helicopter in hover flight benefits from the “ground effect”— i.e., the downwash from its main rotor provides extra lift. This is why hover flight performance levels for a helicopter are indicated in IGE (In Ground Effect) or OGE (Out of Ground Effect), as more power is required for (H)OGE flights.
- (2) ISA – International Standard Atmosphere – The atmospheric standard that defines variations in pressure, temperature, etc. ISA conditions are taken into consideration when calculating the performance levels for an aircraft. At sea-level air pressure, the ISA temperature is 15°C, and at ISA+20°C the temperature is 35°C. At 4500ft, the ISA+20°C temperature is 26°C.
- (3) Performance Class 1 – At all times, the helicopter can handle a single-engine failure in satisfactory safety conditions, in particular during takeoff and landing.
- (4) FPA – Flight Path Angle – This function maintains a steady angle of descent with respect to the ground, regardless of velocity and wind variations.
- (5) TRK – Track Angle Hold – This function maintains the helicopter’s flight path, by correcting for any drift caused by winds.

Eventually as many as 5,000 helicopters may be equipped with Helionix by the time the program ends.



HELIONIX TAKES FLIGHT IN THE EC175

Helionix is the innovative avionics suite developed for Eurocopter's new range of commercial helicopters. The EC175 is the first to benefit.

Article **ALEXANDRE MARCHAND**

Starting in 2013, Helionix will be installed on all the helicopters in Eurocopter's new civil range, beginning with the EC175 and EC145 T2. Approximately 20 patents were filed for the innovative avionics system, which will offer increased safety and flexibility for mission performance. "Helionix brings together all the traditional avionics functions for helicopters, such as displays, flight management,

and an automatic pilot, but also has much more," explained Pierre Bonamour, who has been closely involved with the program. "It offers digital mapping, HTAWS⁽¹⁾, EFB⁽²⁾, and centralized maintenance functions. The human-machine interface has also been completely re-engineered based on the 'part-time display' concept: Data is only displayed when necessary, thereby reducing the pilot's workload and the number of displays on the instrument panel."

Marc Achache, the chief engineer behind Helionix, stressed its open-ended architecture, which will make it possible to adapt the avionics not only to each specific helicopter, but also to the specific needs of each operator: "It will be easy to add on a FLIR⁽³⁾ or a navigation computer, for example, and Helionix is configured with Ethernet so that new systems can be integrated further down the road."

Developed through the Cigalhe program launched in 2007, Helionix flew its "maiden flight" in 2009 on board an EC135. The system has now reached maturity, as evidenced by its integration on board the EC175 and EC145 T2 for their maiden flights in 2009 and 2011, respectively.

"We've now reached the final development phase, which involves approximately 200 people in France and Germany," added Pierre Bonamour. "A dozen test benches are currently operating in both countries with Helionix. We've also made good progress with the certification documentation and software development." Eight helicopters, including five prototypes, are currently flying with Helionix. The first certifications for the EC175 and EC145 T2 are expected this year.

(1) Helicopter Terrain Awareness System

(2) Electronic Flight Bag

(3) Forward Looking Infrared Lights

AIRCRAFT CERTIFICATION: A COMPLEX BUT CRUCIAL PROCESS

Like all new aircraft, the EC175 is subject to a certification process to ensure it respects technical airworthiness requirements and also complies with environmental regulations.

Article **ALEXANDRE MARCHAND**

Photos by **ANTHONY PECCHI/EUROCOPTER**

For the EC175, the certification process had a couple extra twists. Not only was this the first time since its creation in 2003 that the European Aviation Safety Agency (EASA) was asked to certify a new helicopter type, but the EASA also had to work closely with its Chinese counterpart, the Civil Aviation Administration of China (CAAC), due to the fact that the EC175 was developed through a joint venture with China. In fact, some of the certification tests were conducted only in China. Aviation authorities in the United States and Canada were also closely involved in the process to speed up the EC175's certification in both countries.

Since the certification process first began for the EC175 in 2007, 300 tests have been conducted and over a thousand specific



Since the certification process first began for the EC175 in 2007, 300 tests have been conducted and over a thousand specific documents have been produced.



documents have been produced. This colossal workload reflects the stringent traceability requirement imposed by authorities, and also the innovative features introduced for the helicopter — in particular the new Helionix avionics system. Eurocopter has even gone a step further, and is making every possible effort to anticipate any changes in the regulations further down the road. The task has hardly been easy, but customers will reap the benefits in the end because the helicopter will be more mature from the moment it enters service. The oil & gas version of the helicopter is slated for certification with all its optional packages in mid-2013.



IMPORTANT WORK BEHIND THE SCENES

Eurocopter teams are pulling out all the stops to develop innovative technical support services to accompany the upcoming entry into service of the EC175. *Rotor* takes a closer look at this quiet revolution that will be changing the way operators service their machines.

Article
ALEXANDRE MARCHAND

Photo by
**ÉRIC RAZ/
EUROCOPTER**

“Work on defining the new support policy for the EC175, with its own specific tools, began right at the start of the helicopter’s development phase,” explained Véronique Cardin, program support officer for the new helicopter. “The EC175 program has pushed us to innovate and develop our support and services approach.”

THE WORK IS BASED ON TWO NEW METHODS

The first is the Living Maintenance Review Board (Living MRB) method, which covers all aspects of scheduled maintenance. The schedule will now be optimized on a permanent basis – which is highly recommended by the European and American certification authorities (the EASA⁽¹⁾ and FAA⁽²⁾, respectively). To oversee the schedule, the events recorded in the customer’s maintenance management software will be automatically collected on a daily basis. “Another innovative new concept is our plan to optimize the helicopters’ performance levels from the moment they enter service,”

Eurocopter is making every possible effort to prepare its customers for the new support concept that will be introduced along with the new machine.

added Ms. Cardin. “We’ve benefitted a great deal from past experience, and in order to reduce downtime on the machines we will be introducing a new ground station to help customers properly manage unscheduled maintenance events.”

The ground station will in fact be software installed on a PC, which the operator can use to analyze all flight events – almost in real time. The analysis will cover three essential functions. The first is a new tool to manage “wear” factors, i.e. any unintended incidents during which the operational limits are exceeded. The tool will make it possible to analyze the magnitude of the incident, its impact on dynamic components, and the resulting maintenance requirements. Second, the “health” function will keep track of vibration levels. Already mandatory for the oil & gas market, the function will be standard equipment on all EC175s, regardless of the operators or their activity sector. “The third function that will be part of the ground station is a failure detection and troubleshooting tool,” said Ms. Cardin. “The tool will draw on a database that will constantly be updated with new operational feedback.”

The development aircraft have also been an invaluable source of input to ensure that support means and tools have reached maturity well before the aircraft enters service.

“We’ve already begun to test the work cards, tools, technician training modules and, more generally, all the resources required for these new services,” explained Ms. Cardin. “We have also benefitted a great deal from the intense flight testing that the prototypes are being put through, as this has helped us fine tune our troubleshooting procedures.” This is the very first time a flight simulator has been developed in parallel with the actual helicopter, and the training equipment will already be available by next spring – just a short time after the EC175 enters service. A final but crucial point is logistics. Eurocopter is already making plans to deploy on-site specialists to accompany the first helicopters’ entry into service. In addition, the Group will be setting up “excess inventory” stores at its own expense to guarantee the new aircraft’s availability. The message is clear: Everything will be taken care of to ensure that this promising new program can “take flight” in the best possible conditions.

(1) European Aviation Safety Agency

(2) U.S. Federal Aviation Administration

The Panther MB has built a reputation of its own based on its ability to perform the most demanding ship-based military missions off navy vessels of every shape and size.



THE PANTHER MBe FLEXES ITS MUSCLES

The upgrading of the AS565 Panther MB has given birth to a new high-octane version of the ship-borne helicopter that offers higher performance levels and expanded operational capabilities.

Article
ALEXANDRE MARCHAND

Photo by
**ANTHONY PECCHI/
EUROCOPTER**

Between 20 and 30 helicopters from the Dauphin family are still sold each year (the AS365 N3+, AS565 MB and EC155). While the three models may be in the same family, each has its own distinctive calling card. The EC155 has been widely hailed for its large cabin and specially designed rotors, which keep vibration levels to a minimum and offer unparalleled comfort. The Dauphin AS365 N3+ remains the reference in terms of versatility, while its military version, the Panther MB, has built a reputation of its own based on its ability to perform the most demanding ship-based military missions off navy vessels of every shape and size. Anti-surface warfare, maritime surveillance, sea rescues and maritime counter-terrorism are just a few of the many missions the Panther performs on a regular basis.

"The Panther MB is such a robust platform that it deserved new investments to improve its high-altitude performance and overall capabilities," said Richard Dubreuil, who heads

the Dauphin program. "We wanted a Panther fully equipped to meet future mission needs, and this has been the main focus of our work as we develop the MBe version."

MANY NEW FEATURES

That little "e" actually represents quite a lot. First of all, the helicopter has a new powerplant: Arriel 2N engines manufactured by Turbomeca provide approximately 15 percent more power. To handle its new muscle, the helicopter's airframe is being reinforced, and its upgraded MGB will offer a longer TBO⁽¹⁾. The Starflex is likewise being reinforced, and the 4-axes autopilot that has been introduced on all of Eurocopter's new-generation models is already available on the MB. The avionics will be upgraded as well, with the introduction of a touch-sensitive screen to interface with mission systems such as the DMAP⁽²⁾, the search radar, the AIS⁽³⁾ and the HTAWS⁽⁴⁾. What's more, the instrument panel will also include a VEMD⁽⁵⁾ and an IESI⁽⁶⁾.

"The power transmission system is being revamped to provide substantially better performance levels at different engine ratings – especially for OEI⁽⁷⁾ flight," added Mr. Dubreuil. "This is a key feature for operators who have to fly hover flights – especially sea rescues. The payload will also be increased for military applications." The only existing prototype for this "beefed up" version performed its first flight last October 16, and test campaigns in extremely hot and cold weather conditions are scheduled for later this year. The first production models may be ready for delivery by early 2015. As soon as it rolls off the line, the new Panther will be ready to receive the full array of optional equipment already certified for the MB.

- (1) Time Between Overhaul
- (2) Digital Map
- (3) Automatic Identification System
- (4) Helicopter Terrain Awareness and Warning System
- (5) Vehicle Engine Monitoring Display
- (6) Integrated Electronic Standby Instrument
- (7) One Engine Inactive

BETTER PERFORMANCE LEVELS FOR THE EC135 T3/P3

Article
REGINA LANGE

Photo by
JAY MILLER

After entering service in 1996, the first model in the Eurocopter range quickly became the market leader in the light twin-engine segment. Now in its T3/P3 version, the EC135 offers even better performance levels.

In mid-2012, Eurocopter delivered the 1,000th EC135 to the German Automobile Club (ADAC). Now operated by 289 customers in 58 countries, the light twin-engine owes its enormous success not only to its high availability rate, low sound levels and reasonable maintenance and operating costs, but also to the increased safety offered by its Fenestron® shrouded tail rotor.

MULTIPLE USES

The EC135's design makes it the perfect multi-mission helicopter: lateral sliding doors, a flat cabin floor with passenger seats on runners, and a Plug and Play Design⁽¹⁾ concept for its mission equipment. The different types of use are almost limitless, whether it be training, private and corporate transport, servicing for wind farms and offshore platforms, or maintaining public order.

"The maximum takeoff weight for the EC135 T3/P3 has been increased by an additional 30 kg to 2.98 metric tons," said Stefan Bestle, marketing product manager. "The increased payload really becomes significant above 1,000 meters (+70 kg), and is now 240 kg beginning at an altitude of 2,134 meters in ISA+20 conditions, and 270 kg at altitudes above 914 meters in ISA+35 conditions." The EC135 T3/P3 also offers improved performance levels with one engine inoperative, which even at sea level can make a big difference. These upgrades will be especially beneficial for operators who already comply with the latest safety standards.

WHAT'S NEW ?

The T3/P3 version has many important new features, such as a revamped rotor



design, optimized blades that are now 10 cm longer, an upgraded FADEC⁽²⁾ software suite, and lateral air inlets that are compatible with Inlet Barrier Filter (IBF) systems. A full array of optional equipment will be available for the T3/P3 (see box), which is scheduled to enter the market in the second quarter of 2014. A Stylence® configuration has also been developed to add yet another member to this unique range of Eurocopter products. "This new version offers another major advantage as well," added Mr. Bestle "It will be possible to upgrade the entire existing fleet of EC135s, beginning with the 'i' series, into the EC135 T3/P3 version."

(1) Plug and Play Design: concept that makes it possible to quickly transform the entire helicopter configuration without requiring any special tools.

(2) Full Authority Digital Engine Controls

For the EC135 T3/P3, the increased payload really becomes significant above 1,000 meters, and is 240 kg beginning at an altitude of 2,134 meters.

SPOTLIGHT ON...

New Optional Equipment

- Two Garmin GTN 750 avionics units
- Stand for tablet PCs
- USB power supply for pilots and copilots
- Light Aircraft Recording System for audio and video cockpit recordings for training purposes and increased safety
- Externally mounted, self-inflating life rafts
- External hoist with increased payload (up to 272 kg) and Class D certification

ALBACETE

On January 23 of this year, Eurocopter España celebrated the maiden flight of the first production NH90 completely assembled at the Albacete plant.

FIRST FLIGHT OF A SPANISH-BUILT NH90



The Spanish Army will be receiving 37 NH90s by 2019, with 35 being manufactured in Spain.



WATCH A VIDEO OF THE FIRST FLIGHT OF THE NH90 MANUFACTURED IN SPAIN ON ROTOR ONLINE

www.eurocopter.com

tion NH90 bodes well for staff at Albacete, who are convinced they can handle the planned production rate of six units per year. What's more, the plant's assembly line has been specially designed for a ramp-up in production if demand for the NH90 should increase. The Spanish engineering teams have also played a big part in making the NH90 a truly Spanish helicopter, as they were responsible for designing the radio, mission, and countermeasure systems, and also oversaw the test flights.

(1) Spanish Army Airmobile Force

All eyes were turned towards the NH90. After taking shelter from the tremendous gusts of wind, more than 500 people in attendance at the Albacete plant, including employees, special guests and journalists, all held their breath as the Spanish-built NH90 took to the skies. It was the culmination of a project launched five years earlier by Eurocopter España.

"This is the first military helicopter to be manufactured in Spain," said Francisco Vergé, CEO of Eurocopter España. "Today's flight further illustrates the industrial capabilities and aviation skills our compa-

ny possesses. What a fitting reward for all the people who worked so tirelessly to make the Spanish NH90 project a success!"

The helicopter, dubbed the GSPA03, will be the first production NH90 to be received by the Spanish customer, the FAMET[®], with delivery scheduled for the end of the year. The Spanish Army will receive 37 NH90s by 2019, with 35 being manufactured in Spain. The first two units, which were built in France, are currently undergoing qualification and certification tests.

The success of the first Spanish produc-

SPOTLIGHT ON...

First Flight: An Important Step

The first flight of a helicopter is a crucial moment for every program. This is when checks are performed to make sure that the systems are properly powered and functioning, that the controls respond correctly, and that each engine can provide the required performance levels at different ratings.

NH90 PROGRAM MOVES INTO HIGH GEAR

The NH90 has now entered service for many of its customers. A new milestone was reached at the end of 2012 when the first NFH⁽¹⁾ naval versions in their final configuration (known as “Step B”) and the first TTH⁽²⁾ land versions were delivered to Belgium.

Article
**ALEXANDRE
MARCHAND AND
REGINA LANGE**



© Anthony Pecchi/Eurocopter

The Royal Netherlands Navy has already received 8 NH90 NFHs.



© Charles Abaty/Eurocopter

A total of 12 NH90s in the MedEvac version have been equipped for combat medical evacuation missions.

At the end of 2012, 136 units had been delivered to 12 customer countries (out of a total of 14), and when these lines go to press, the fleet in service will have completed well over 30,000 flight hours.

FIRST OPERATIONAL DEPLOYMENT: THE NH90 IN AFGHANISTAN

Since the end of summer in 2012, five Italian Army NH90s have been based at Herat in northern Afghanistan. The helicopters, which are in the IOC+⁽³⁾ configuration, have been fitted with equipment packages that are essential for their theater of operations: encrypted radios, addition-

al ballistic protection, weapon systems and electronic countermeasures. After performing a first series of flights to familiarize the crews with the zone, the Italians began using the helicopters for logistics transport and medical evacuation missions. Over 300 hours have already been logged, with satisfactory availability rates and extremely positive initial feedback. Technical support for these NH90s has been given top priority. An NHIndustries work team has been in Afghanistan since last July to help ensure the success of this first operational deployment for the European helicopter.

SPOTLIGHT ON...

The NH90 Takes to the Sea

At the end of January 2013, the Dutch Navy gave the green light for the operational deployment of an NH90 NFH on one of its frigates in the Gulf of Aden off the coast of Somalia as part of the ongoing counter-piracy mission in the region. Before its initial operational deployment could be approved, the NH90 NFH underwent deck landing tests, in particular with the Samahe deck handling system, in the third quarter of 2012. Landing tests were also conducted with the navy version last October on the French frigate Aquitaine, using a harpoon in various sea states. Operations with the NFH version are quickly gaining steam, and in 2013 the helicopter will have its initial operational capabilities extended to include all ship-based missions. Another notable event occurred at the end of 2012, when the first deck landing campaign for an NH90 TTH operated by the French Army Air Corps (ALAT) was completed on the BPC Dixmude projection and command ship.

BAPTISM OF FIRE FOR THE NH90 MEDEVAC VERSION

The first operational deployment for the German Bundeswehr NH90s is rapidly approaching. A total of 12 NH90s in the MedEvac⁽⁴⁾ version have been equipped for combat medical evacuation missions. In the second quarter of 2013, four of these helicopters will be deployed in Afghanistan, while the remaining eight will be used to train flight crews in Germany. Following in the footsteps of the Italian NH90s, the German NH90 fleet will be the second to test its mettle in the Afghan theater. Another important step was reached in the



Five Italian army NH90s are currently based in Afghanistan.

program in mid-January, when the 12th NH90 MedEvac was delivered on schedule to the Bundeswehr. These helicopters were fitted with the equipment they will need to perform their missions at the German military base in Holzendorf. Working in close cooperation with the customer, Eurocopter teams at the base equipped the NH90 MedEvacs with an avionics system and an upgraded self-protection package.

“The project was quickly completed, right in step with the work schedule that we initially defined,” said Andreas Goern, who is responsible for the German variant of the NH90. “This is just one more example of the close ties we enjoy with the German customer.”

To prepare for the operations in Afghanistan, three Bundeswehr NH90s were sent to the United States during the summer of 2012, where they were tested in extreme

conditions in the deserts of New Mexico as part of the FALCOR 2012 exercises being conducted by the German Army Air Corps. The primary goal of the exercises was to assess how well the helicopters respond in the hot, dusty conditions they’ll be encountering in their future theater of operations. The training program included a series of dust landings with the associated “brown-out”⁽⁵⁾ phenomena, a firing campaign for the door guns, and exercises to perfect evacuation procedures. After 140 flight hours and more than 400 landings, the helicopters were given the thumbs up all down the line, and the German NH90 was declared ready for deployment.

- (1) Nato Frigate Helicopter
- (2) Tactical Transport Helicopter
- (3) Enhanced Initial Operational Capability
- (4) MEDical EVACuation
- (5) Loss of visual references near the ground

SPOTLIGHT ON...

Technical Support Tailored to Needs

As NH90s continue to enter service in all the different versions, the partner companies at NHIndustries are implementing a dynamic technical support policy. Everything possible is being done to ensure maximum availability of the helicopters, while support services are also being adapted to the specific operational needs of each customer country. The majority of the customers call on the services of technicians provided by the industrial partners. These teams advise them on maintenance tasks and help resolve any technical problems they may have, using a tool known as the Technical Support Point Of Contact. Logistic field reps are also on hand to manage spare parts stores on site, and a customer support manager is assigned to each fleet in order to coordinate and monitor the logistics and technical support contracts.

All of these different services will remain in place over the next three to four years at customer sites, giving them the time they need to fully master the ins and outs of NH90 maintenance, while helping to ensure that their helicopters can enter into service without a hitch.

Article
BELEN MORANT

Photos by
HELISTAR

HELISTAR

“NO SUPPORT MEANS NO SUCCESS”

Captain Orlando Cabeza, CEO of Helistar, talked about the future of the oil & gas segment in Colombia, and highlighted the many strengths of Helistar to remain a leader in the sector in their country.

“Oil & gas companies are constantly innovating in a wide range of areas – whether it be engineering, exploration, or operating techniques – as their explorations keep leading them to deposits that are deeper beneath the earth, further off the coast or more difficult to reach. From virgin forests to the earth below the ocean floor, oil & gas companies travel to the farthest reaches of Colombian territory. An exploration project currently underway in the Atlantic Ocean, for example, will require a wide-scale logistics setup and major air transport means. In order to perform missions over the open sea, Helibras has to acquire aircraft that have a high seating capacity and can carry heavy payloads. A large operating range is also a must.

In Colombia, Ecopetrol (the former Empresa Colombiana de Petróleos) is quickly developing its petroleum activities, resulting in a boom in the helicopter market throughout the country. The safety levels for personnel and facilities varies from one operation to another, depending on whether we're dealing with government programs, national security, or maintaining law and order. In certain cases, the use of helicopters is an absolute must to ensure safety. In the current context, having a fleet of helicopters



Captain Orlando Cabeza,
CEO of Helistar.

available will be essential to the development of the petroleum industry in Colombia.

SAFETY AND CUSTOMER SERVICE

Our policies to ensure excellent customer service and top levels of safety are a key part of our future projects. We always want to be able to meet our customers' needs in terms of availability. At the same time, we

Petroleum activities are increasing in Colombia, resulting in an expanding helicopter market throughout the country.



must be prepared for whatever the future holds in store, which is why we offer tailored solutions by operating new aircraft that comply with the requirements of the International Organization of Oil and Gas Producers (OGP).

Our goal is to do whatever it takes to ensure that our personnel and our fleet meet the highest standards in the oil & gas sector.



10 QUESTIONS FOR...

**CAPTAIN
MARCO CORDÓN,
HELICOPTER PILOT
AT HELISTAR**

1. If you weren't a helicopter pilot, what job would you have liked to have?

I would have worked for the Colombian police force.

2. What helicopter do you dream of flying?

The Black Hawk or the EC155.

3. What is the greatest mission that a helicopter pilot can perform?

Evacuating someone who is sick or in danger from a hard-to-reach location.

4. What passengers have you always dreamed of carrying on board your helicopter?

The girls in the ads for the Colombian beer Águila (laughs).

5. On leisure trips, do you prefer a helicopter or an airplane?

An airplane! That way, I can relax and forget about all the bumpy rides, and just enjoy the view. The airplane is for when I want to relax. The helicopter is for when I want a little bit of excitement!

6. If the EC145 were an animal, which would it be?

A fox, because of its sleek shape, the way it moves, its discreteness and maneuverability.

7. What do you think helicopters will be like 20 years from now?

I imagine a helicopter with no blades or tail rotors, that uses nothing but air outlets to move around. As for the fuel, I think it would be interesting to have just a tiny piece of metal.

8. What risks do you refuse to take when you're behind the controls of a helicopter?

I would never fly into a storm if I knew it meant trouble.

9. What places would you like to fly over?

Places I've never been before. Like up north of Vancouver, Canada, for example.

10. What innate quality must all good helicopter pilots have?

A little bit of charisma... and they have to be good conversationalists!

PREPARING FOR THE FUTURE

But our future plans are not focused on growth to the exclusion of all else. We also want to ensure we always maintain cutting-edge equipment, experienced staff, and the ability to provide highly effective support to our customers, whether it be logistics, administrative or maintenance needs. We plan to expand our fleet by acquiring aircraft that are perfectly suited to the new needs generated by the rapid expansion of petroleum activities, including exploration work.

To face these needs, we must be able to count on having excellent technical sup-

port and the availability of spare parts whenever we need them. We depend on Eurocopter's experience and technical support, and we expect its staff to quickly find solutions to any problems we might have. If we can't count on efficient technical support, then there's no point in having a large fleet of helicopters. In a nutshell: No support means no success. It is absolutely crucial for us to be able to count on true customer support services – people who can help us with our maintenance needs and technical problems, so that we can keep to a minimum the amount of time our aircraft spend on the ground.”



Article
BELÉN MORANT

HELIBRAS

THE RECIPE FOR SUCCESS

With the new Helibras plant up and running, the Eurocopter subsidiary will now be manufacturing and assembling the 50 EC725s ordered by the Brazilian Armed Forces in 2008. The plant is also ready to provide all the related maintenance services.



Itajubá will be manufacturing the EC725 for the Brazilian Armed Forces and the EC225 for the region's offshore market.

Officially inaugurated last October, the new Helibras plant in Itajubá will be manufacturing both the EC725 and its civil version, the EC225, for the region's offshore market. Helibras, the only helicopter manufacturer in all of Latin America, will be developing the required technological capabilities over the next decade for designing, developing and manufacturing helicopters that are "100 percent made in Brazil". Close cooperation between France and Brazil has been a key to this success story. By

the end of the program, more than 100 Helibras employees will have undergone training in France, and 40 employees from Eurocopter France will have worked in Brazil to ensure a smooth technology transfer between the two countries.

The assembly line should be operating at full speed by the end of 2013, and 14 helicopters per year are scheduled to roll off the line. The first EC725 manufactured in Brazil is slated for delivery by the end of 2013. Brazil's Armed Forces have al-

ready received seven units manufactured in France: three in December 2010 and four in 2012.

A NEW FACE FOR THE ITAJUBÁ PLANT

To accommodate the new assembly line, the Itajubá site had to be reorganized into two distinct activity centers. The first covers production activities, including the AS350 Esquilo and EC725 assembly lines, and is housed in a new hangar. The second center is for maintenance, inspection



© Helibras/Renato Olivias

SPOTLIGHT ON...

Panther Upgrades for the Brazilian Army

Helibras is currently upgrading the fleet of 34 Panthers operated by the Brazilian Army. The program represents a major technological leap for the subsidiary, which will be acquiring considerable technical know-how for the Panther family. The first retrofitted helicopter is slated for delivery to the army in the upcoming months. The modernized Panther will offer many improved features, such as a four-axes autopilot, the Arriel 2C2CG engine with 40 percent more power, a completely revamped main gearbox, and a VEMD screen in the new glass cockpit. The upgrade program, which will extend the service life of the Panthers by an additional 25 years, is scheduled for completion by 2021.



© Helibras/Renato Oliveira



VIEW MORE PHOTOS OF THE
INAUGURATION CEREMONY
ON ROTOR ONLINE
www.eurocopter.com



© Eurocopter

In attendance at the inauguration ceremony was Mr. Enrique Peña Nieto, President of Mexico.

EUROCOPTER DE MÉXICO

Article
BELÉN MORANT

INAUGURATION OF NEW SITE IN QUERÉTARO

Last February 13, Eurocopter de México inaugurated its new industrial facilities in Querétaro, with numerous political figures, customers and employees in attendance. Querétaro is now a reality. After nearly twelve months of work, the new production site officially opened its doors on February 13 with a celebration attended by more than 500 people. The hundred million dollar investment demonstrates Eurocopter's confidence in the country's industrial capacities. Initially, the Group plans to produce doors for Airbus at the Querétaro site; next year, production is scheduled to begin on tail booms for the AS350 Ecureuil/AStar family. Key customers for Querétaro may include Eurocopter sites with assembly lines for the legendary AS350 in France, the U.S. and Brazil. The 13,000 m² of floor space at the new site offer Querétaro a perfect platform to quickly develop its capabilities and become a center of excellence for the production of metal sub-assemblies.

Eurocopter de México now has a staff of approximately 30 in Querétaro, with an additional 30 currently undergoing training in Germany on new industrial operations for Airbus doors. "Over the medium term, we hope to have approximately 200 highly qualified employees on board," said Serge Durand, CEO of Eurocopter de México. "Knowledge transfer has been proceeding right on schedule in Germany, and we are putting a great deal of effort into pursuing our strategy to produce metal airframe components."



© Helibras/Fabiano Silva

The inauguration ceremony at Itajubá with (from left to right) Fernando Pimentel, Brazilian Minister of Development, Industry, and Foreign Trade; Eduardo Marson, CEO of Helibras; Antonio Anastasia, Governor of the state of Minas Gerais; Celso Amorim, Brazil's Minister of Defense; and Lutz Bertling, CEO of Eurocopter.

and repair work, and capacity has now doubled over the past few years for these types of operations.

With the new hangar, floor space at the plant has now been doubled, from 15,300 m² to 30,800 m². Plenty of room remains, as the site covers 120,000 m². The workforce at Helibras has followed the same trend, jumping from 300 employees in 2009 to more than 750 today. New hiring will continue, and staff numbers are expected to exceed 1,000 by 2015.

In related news, the new airport in Itajubá, located next to the plant, is scheduled for completion in 2015. Its strategic location will make it much easier for Helibras to penetrate the Brazilian market.

1,000

The size of the staff
Helibras plans on
employing by 2015.



With the AS332 C1e Super Puma, Eurocopter has developed the perfect response to the increased demand for utility services in difficult operating environments. The C1e is the ideal choice for operators looking for excellent performance levels – particularly at high altitudes – without necessarily requiring the superior capabilities of the EC225. Starlite Aviation, the launch customer for this “heavy duty” version, ordered two AS332 C1es in 2012, with two more on option.

Autor
RÉGIS NOYÉ

Photo by
**PATRICK PENNA/
EUROCOPTER**

STARLITE: LAUNCH CUSTOMER FOR THE NEW AS332 C1e SUPER PUMA



The C1e is being acquired as part of a fleet renewal and expansion plan covering Starlite's 10 SA 330-J Pumas, which have won over the operator after providing excellent services for over a decade now.

Based in Ireland and South Africa, Starlite Aviation offers a wide range of services to its customers, who include government agencies, NGOs providing humanitarian aid (such as the World Food Program), and large logistics groups. The operator is also called on to perform different types of specialized jobs, such as air ambulance and patrol missions,

all around the globe. Mission types may vary, but all have a few things in common: Rapid response times are a must, and the operating environments can be particularly harsh. The C1e is being acquired as part of a fleet renewal and expansion plan covering Starlite's 10 SA 330-J Pumas, which have won over the operator after providing excel-

lent services for over a decade now. The first C1e is slated for delivery before the end of the year, once the aircraft has been issued its European (EASA⁽¹⁾) and U.S. (FAA⁽²⁾) type certificates.

“The C1e is the only modern, medium-lift utility helicopter currently available on the market that can meet our particularly demanding needs, which include intense flight cycles and severe operating conditions,” said Slade Thomas, CEO of the Starlite Aviation Group. “The excellent capabilities of the C1e will enable us to fully meet our customers’ needs.” The C1e version of the Super Puma is the result of lean and innovative new business and industrial models introduced by Eurocopter to reduce development cycles and costs for its new products. Through these streamlined processes, the Group can offer multi-mission helicopters based on a simple, open-ended design at lower prices. The C1e offers a payload of 3.8 metric tons (4.5t for sling loads), and comes equipped with two Makila 1A1 engines, modern avionics and the 4-axes autopilot found on the most recent version of the EC225. With its reduced operating costs, excellent reliability and top-notch performance levels in hot-and-high conditions, the C1e is sure to be a success. Flight safety is also guaranteed, thanks to a high-performance automatic flight control system.

(1) European Aviation Safety Agency

(2) U.S. Federal Aviation Administration

82,093,000



total flight hours logged by the global Eurocopter fleet.



6.3

billions of Euros of turnover.

49% of turnover comes from helicopter deliveries, 42% from Services.



475

deliveries.

44% of the helicopters delivered on the civil and parapublic market come from Eurocopter.



net bookings representing a value of 5.4 billion euros.

249 bookings for the Ecureuil/Fennec/EC130 Family.

1,700 recruitments.



11,827

Eurocopter helicopters in service worldwide.

2,967

customers in 148 countries.



SPOTLIGHT ON...

Three Platforms and Six Cabins

Helisim has Level-D Full Flight Simulators (FFS) for the Super Puma L1 and L2, the EC225, the Dauphin N2, the EC155 and the NH90. The company will also be collaborating in the development of the FFS for the EC175, and is already studying the simulator's role for Eurocopter's future range of civil helicopters. The removable cabins are mounted on platforms that can recreate three-dimensional movement. By being able to quickly replace one cabin with another, Helisim can continuously maintain and modernize its simulators without having to interrupt its services.

Fourteen years after its creation, Helisim continues to set the pace in the helicopter simulation industry. *Rotor* sat down with Helisim CEO Patrick Bourreau to talk about the trendsetting training company.

Article
ALEXANDRE MARCHAND

HELISIM: STILL IN HIGH DEMAND

Helisim was considered to be a ground-breaker when it first opened its doors back in 1999 – which may seem like an eternity ago in the flight simulation business. Fourteen years later, the company has often been imitated but never equaled. Each year, 2,500 pilots pass through its doors to receive more than 14,000 hours of flight simulator training. Military customers currently account for 44 percent of its activity, followed by the offshore sector at 30 percent, and civil and parapublic operators, which make up the remaining 25 percent. Now more than ever, the company is an unbeatable calling card for Eurocopter, which owns 45 percent of Helisim, the same share as Thales⁽¹⁾.

“We often provide pilots with their first ‘hands-on’ experience with Eurocopter products.”

“As a training facility, we often provide pilots with their first ‘hands-on’ experience with Eurocopter products,” said Patrick Bourreau, who took the reins at Helisim last July. “Our work leaves a lasting impression on our customers, who come to us for training from a hundred countries all around the globe.”

Trainees appreciate the protected environment offered by Helisim. Far away from their

operational bases and daily duties, they can fully devote themselves to their training. They also have the opportunity to work with highly qualified instructors, who are clearly a source of pride for Mr. Bourreau: “Our instructors are limited to 550 flight hours on simulators per year. Beyond that limit, we might start to encounter problems with fatigue and the quality of our training would suffer. We prefer our instructors to combine their teaching duties with their careers as pilots. We want them to stay in touch with what is actually going on inside our operators’ cockpits, so that we can be sure our training is always effective and up to date.” Helisim’s enormous success has made it hard to keep up with demand. Its Level-D

Full Flight Simulators (see box) operate 20 hours a day, 350 days a year. The simulators are shut down only to comply with the maintenance schedule, which is just as strict as those followed for actual helicopters. But such work is rare thanks to the high quality of the products built by Thales. Helisim remains very attentive to its customers' needs, and often uses their feedback to develop new missions as part of the training, including new animations and in-

teractions on the simulator screens. A great deal of time and money must be invested to provide such comprehensive training, but it's the price to pay to maintain the academy's outstanding customer satisfaction levels: over 95 percent, according to the most recent survey.

(1) Défense Conseil International is the third shareholder in Helisim, with a 10-percent stake made up of investment certificates.



The NH90 FFS was inaugurated on September 23, 2009.

© Eric Raz/Eurocopter

PROFESSIONAL BACKGROUND



© Patrick Penna/Eurocopter

Patrick Bourreau, President and CEO of Helisim.

After graduating from the prestigious Saint-Cyr Military Academy, Patrick Bourreau originally planned on pursuing a career in the armed forces. After an injury forced him to leave the Army, he earned his MBA at the HEC business school in Paris and embarked on a career in the corporate world. He initially joined Aerospatiale, where he developed the company's activities on the export market for tactical propulsion systems, and was later appointed managing director of Aerospatiale and then EADS in Russia.

After five years in Moscow, he joined Eurocopter's Strategy directorate, where he headed the Business Development sector and helped strengthen the Group's network of subsidiaries: EC Romania, EC Vostok and EC China are but three of the entities that were created under his leadership.

In 2005, Fabrice Brégier, the former CEO of Eurocopter, entrusted him with the company's bold new project in South Korea, the KHP⁽¹⁾ program. The great success of this project was quite a feat, considering that the country had until then been considered the private turf of the U.S. defense industry. Upon his return, he was appointed deputy director of KRM Asia. The fact that Eurocopter significantly increased its market share during his four years at KRM was thanks in large part to his work.

In 2010, he became the director of sales for the Africa region, and last summer was appointed President and CEO of Helisim.

[1] Korean Helicopter Program

FNPT AS350 FLIGHT SIMULATOR

Article
CHRISTIAN DA SILVA
 Photo by
THIERRY ROSTANG/EUROCOPTER

MISSION SAFETY: GETTING BACK TO BASICS

The new Flight Navigation Procedures Trainer (FNPT) at Eurocopter Training Services (ETS) in Marignane enables trainees to focus on the “human factor” in helicopter flying. The FNPT helps pilots improve their decision-making and thereby improve flight safety.

An IHST⁽¹⁾ study found that 78 percent of helicopter accidents that occurred between 2000 and 2005 were due to human error. A recurring factor in many of the accidents was an unexpected entry into IMC⁽²⁾ conditions by VFR⁽³⁾ pilots who were not qualified for instrument flights. The pilots often decided to change course too late. When weather takes a turn for the worse, single-engine helicopter pilots must maintain adequate VFR flying conditions. Pilots can now simulate this type of scenario on the FNPT, which enables them to assess their capabilities to handle difficult situations, whether it be severe weather conditions or mechanical problems. The training helps pilots make the right decisions in the cockpit. On November 23, 2012, the first FNPT training certificate was issued by Hervé Berriet,

CEO of the ETS subsidiary in Marignane, to the pilots of the Oya Vendée Helicopter Group in Brittany, which operates a fleet of five Ecureuils. The company's vice president, Antoine Gresillon-Bertrand, talked about some of the lessons his pilots learned: “Working on the FNPT helped us gain a better understanding of potential dangers and how to identify them. You have to keep a cool head and develop the right habits. We went over the proper procedures to follow in situations that we deal with frequently, especially during flights over the Atlantic. The key is to properly assess the situation and not remain overly focused on flying. Taking into account all the different parameters of the machine is still complicated for us. We get too locked in on the piloting, instead of staying attuned

OPINION

ANTOINE GRESILLON-BERTRAND,
 VICE PRESIDENT OF THE
 GROUP OYA VENDÉE
 HÉLIPTÈRES/BRETAGNE
 HÉLIPTÈRES.

“The FNPT is a powerful tool that enables pilots to get back to the basics. It helps them understand what they need to do when visibility is low, and better manage complex situations.”



On November 23, 2012, the first FNPT training certificate was issued by Hervé Berriet, CEO of the ETS subsidiary in Marignane, to the pilots of the Oya Vendée Helicopter Group in Brittany, which operates a fleet of five Ecureuils.

to our real goal: properly handling difficult flight conditions.”

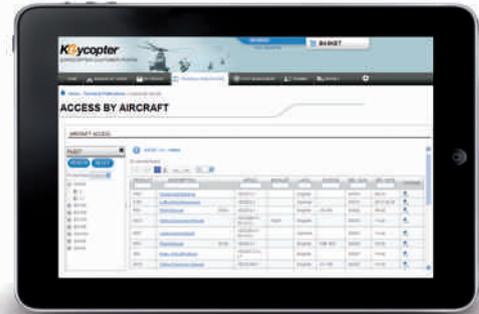
Gaël Moncanis, who pilots one of the company's AS350 Ecureuils, was very pleased with the simulator: “The visual display on the FNPT offers a field of view of 40° x 160°, and the simulated flight conditions are extremely realistic. They faithfully reproduce real-life conditions, and I was fully immersed in the mission.” Mr. Berriet talked about the overriding goals of the FNPT: “This new simulation tool was developed to improve the safety of our light helicopter customers' missions. Safety is a top priority at Eurocopter, and this new training initiative will help reduce the accident rates for these types of helicopters.”

(1) International Helicopter Safety Team
 (2) Instrument Meteorological Conditions
 (3) Visual Flight Rules

E-TECHPUB GOES ONLINE

Technical documentation for Eurocopter's current range is now available online in PDF format via the e-TechPub application. By the end of the year, the former range (including Puma, Gazelle, BO105 and the others) will also be covered by the service, which is accessible via the Keycopter web portal. Based on their subscription plan, e-TechPub users can access technical documents and read them online or down-

load them to their computers. The new service will gradually be rolled out to different geographic regions around the world, beginning with Europe and followed by North America. By mid-2013, e-TechPub will be available worldwide. Interactive online use of technical documentation will begin in the first quarter of 2013, and over time will replace the current system of DVDs.



NHINDUSTRIES: A NEW WEB PORTAL

Article
ALEXANDRE MARCHAND

NHIndustries has set up a new web portal to speed up the repair process and forge closer ties between end users and manufacturers. The "ePortal" has many functions: to simplify procedures, reduce paperwork for orders, offer direct online access to data, and provide real-time tracking capabilities for the repair process. NHIndustries was able to use the existing experience of

each partner company (such as KeyCopter at Eurocopter) to quickly get the system up and running. The ePortal was first launched in early May 2011, and an initial pilot phase was conducted with Finland's Armed Forces and Australian Aerospace in the first semester of 2012. In the coming months, all NH90 users will progressively be connected to the service.

HUMS⁽¹⁾

Article
ALEXANDRE MARCHAND

WEBHUMS PICKS UP STEAM

WebHums, a support application for the HUMS activity, has now integrated the latest web and portal upgrades. The HUMS application automatically retrieves information about the helicopter along with important maintenance data, and then creates an extremely user-friendly interface for overall fleet management. Customers who subscribe to

the service receive highly precise data about the vibration levels of their fleet, for example, and about all the maintenance work performed on their helicopters. The system also offers many advantages for Eurocopter, as the fleet and maintenance data is correlated to create in-depth feedback. This information is in turn used to improve detection algo-



rithms and preventive maintenance models. WebHums, which is accessible worldwide via Keycopter, is a powerful tool for improving Eurocopter customer service.

(1) Health and Usage Monitoring System



THE ECUREUIL/ASTARS OF THE BRAZILIAN NAVY

WHEN THE TOUCAN PAYS A VISIT

The roar of engines may frighten the locals, and the rotor downwash often raises clouds of dust, but that hardly deters the children from running to greet the tremendous bird as it swoops down from the skies. Even the women set aside their chores for a few moments to look on from their doorsteps. All have been eagerly awaiting the military helicopter's arrival. This is no ordinary machine – it's a Toucan, the nickname of the AS350 Ecureuil flown by the Brazilian Navy's HU-3 Squadron.

Article **MAURICIO DA COSTA JOIA DIAS**

Photos by **ESQUADRÃO HU**



Under the command of the 9th Aviation Group based in Manaus (capital of the State of Amazonas), the Brazilian Navy currently provides support for 17 healthcare clinics in the region. Navy teams visit each clinic about twice a year on missions lasting 15 to 45 days, and rely heavily on the helicopter to keep to their timetable. It not only facilitates travel, but is also the primary means of performing medical evacuation missions, especially when serious cases arise that require transport to a hospital. For each helicopter mission to a ship hospital, the HU-3 mobilizes four mechanics to assist the flight crew. These technicians are qualified to perform all types of maintenance, including engine replacements. In a standard “ASSHOP” (hospital assistance) mission, predetermined meeting places with physicians and dentists are set up for each community. Members of the local population come down to the riverbank or the mouth of a river channel to meet the arriving healthcare personnel, who then travel back up the waterways by

boat or take a helicopter to reach villages inaccessible to the hospital ship. The Navy has drawn up a map showing the location of each community—an important tool for establishing the schedule of medical visits to each center. To make sure the ASSHOP missions run smoothly, the Navy deploys an advance medical team via helicopter to prepare the ship’s arrival. As part of their missions, which are not dissimilar to deploying a field hospital, the teams carry out vaccinations, perform emergency care and routine checkups, monitor long-term treatments, pull teeth, and also provide training in areas such as general health and disease prevention. They may also sit down with the locals, either in public spaces or at home, to talk about sexual education. The professionalism and selflessness of the Toucan squadron have been a big part of the missions’ success. In the event that patients require more specialized care, they are taken back to the hospital ship by boat or helicopter. In addition to providing medical and dental

assistance, the ASSHOP missions performed by the Brazilian Navy affirm the foothold of the Brazilian government in an isolated and neglected region. This strategy has been well assimilated by the country’s armed forces, as it is essential to strengthen national sovereignty by instilling a sense of civic responsibility in the local population, and confidence in the Brazilian state. The work of the Toucan helicopter squadron in the Amazon rainforest has added a new dimension to the Brazilian Navy and its Air Corps. In itself, the success of these missions justifies the creation of the DAE-FlotAM (HU-3), an operational unit that has now reached full maturity and become the reference in the Amazon for humanitarian aid. After 33 years and 40,000 flight hours, the HU-3 is as ready as ever to take on new challenges, which may include a new aircraft. Until then, the Toucans will continue to “spread their wings” throughout the Amazon River basin, where a warm welcome is always waiting.

(THINK OIL & GAS)

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