

# ROTOR

JOURNAL



## FLEET SAFETY

On Ongoing Effort  
to Minimize Risks

## SUPER FRELON

A Virtuoso Takes  
its Final Bow



EC145 "MERCEDES-BENZ STYLE"

LUXURY AND UTILITY  
**COMBINED**

Thinking without limits



## NH90 NFH. Ready to meet the future challenges of Naval Warfare.

The naval variant of the best-selling NH90 family features a carbon fibre fuselage, full fly-by-wire controls for enhanced manoeuvrability. Large cabin, high level of safety and survivability against all threats, comprehensive Mission Equipment packages for an unequalled range of operations by day/night and adverse weather conditions. Think NH90 NFH without limits.



AN EADS COMPANY

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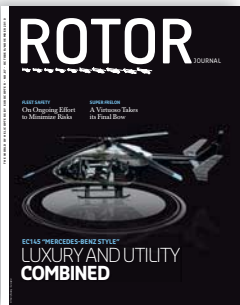
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## Innovation and training: two must-haves for improving fleet safety

Lutz Bertling, *President and CEO of Eurocopter*

At Eurocopter, fleet safety remains our top priority. I personally supported this cause last March when – along with the presidents of other major helicopter manufacturers – I signed a letter addressed to all rotary-wing aircraft operators, urging them to work towards the International Helicopter Safety Team’s (IHST) goal of reducing helicopter accidents worldwide by 80% by 2016. After studying the root causes, the IHST found that there are four principal areas of focus to reduce accident rates: safety management systems, training, equipment and scheduled maintenance that adheres to manufacturers’ standards. I am inviting all of you, our customers, to actively participate in this initiative of IHST and the helicopter industry.

With this in mind, we at Eurocopter are continuing to develop innovative concepts to improve the safety of your fleet. A perfect example of this is Eurocopter’s first-ever integration of data from the Wide Area Augmentation System (WAAS) air navigation network into an existing helicopter display system, which received European Aviation Safety Agency (EASA) approval this past July. With this incorporation of WAAS data, landing on hospital helipads, oil rigs or sites not equipped with ground navigation aids will be more secure, especially in poor weather conditions.

Not only is Eurocopter moving ahead on such initiatives, we also are working hard to continually improve the safety of our helicopters. In addition, Eurocopter is setting up training opportunities – with the focus on flight simulators dedicated to pilot training – as close as possible to our operators’ locations. A few have already been implemented, such as in France, Germany and the United States, and more are in the works, notably for the United Kingdom, Brazil and South East Asia. Finally, we are already collaborating with some of you on your own initiatives to improve fleet safety.

More than ever, we are on your side and committed to helping you complete your missions successfully and safely. This is Eurocopter’s number one priority.

A handwritten signature in black ink, appearing to read 'Lutz Bertling' in a cursive style.



**Angela Merkel Visits the EADS Display Area**  
On June 8, the German Chancellor paid a visit to the EADS display, where she was greeted by the CEO of EADS Louis Gallois, Eurocopter CEO Lutz Bertling and Thomas Enders, the CEO of Airbus.



**Delivery of an EC145 Stylence Helicopter**  
On June 10, an EC145 Stylence helicopter was handed over to Detlef Linke, general manager of Spedition & Helicopterservice Linke GmbH, a logistics company based in northern Germany. This is the third Eurocopter helicopter purchased by the company since 2002.

RETROSPECTIVE

# ILA 2010

The 2010 edition of the ILA Berlin Air Show was held from June 8 to 13, offering Eurocopter plenty of opportunities to demonstrate its know-how and impressive range of products. The Tiger and NH90 were also showstoppers during daily flight demonstrations.

**Delivery of the 900th EC135, the 8th for the Bavarian Police**  
On June 10, Bavarian Interior Minister Joachim Herrmann received an EC135 P2+, the last of eight ordered by the Bavarian police and the 900th EC135 delivered to date by Eurocopter (see article, page 27).



© Tim Marquardt



**The MEDEVAC Variant of the NH90**  
The new NH90 variant for medical evacuation missions (MEDEVAC), tailor-made to meet the future needs of the German Army, is equipped with two intensive care units and seats for the medical team.



© Tim Marquardt



**Two EC145s for Turkey**  
Eurocopter CEO Lutz Bertling and Orhan Birdal, general director and chairman of the board at DHMI<sup>(1)</sup>, signed a contract on June 9 for the purchase of two EC145s.

(1) The state airport authority in Turkey



© Tim Marquardt

## IN OTHER NEWS...

**Online Training Tools**

This new online training system, available since July 2010, can be accessed anywhere in the world 24 hours a day. It will enable trainees to prepare for EC135 and EC145 type ratings at a lower cost and can also be used for perfection courses.

**A New Cockpit for the EC120**

The new full-screen cockpit with a 2.5-axis automatic pilot and a Traffic Alert/Collision Avoidance System (TCAS) is slated for certification before the end of the year.



JUNE 14 TO 18, 2010

► **EUROSATORY 2010**

At the Eurosatory 2010 Defense Week held in Paris, Eurocopter presented for the first time the EC645, the military version of the EC145. Other helicopters in the range were also on display: a full-scale mockup of the NH90 in dual configuration (tactical transport and navy), a Tiger (in the French Army display area), an EC725, an AS550 Fennec, an AS565 Panther and an EC635. In addition, Eurocopter and the SIAé<sup>(1)</sup> signed a five-year cooperative agreement covering support services for France's military helicopters.

(1) Service Industriel de l'Aéronautique: the French joint armed services agency for aeronautics maintenance.

JUNE 22, 2010

► **FIRST OFFICIAL FLIGHT OF THE SURION**

The Korean Utility Helicopter (KUH)<sup>(1)</sup>, dubbed the Surion, performed its first official flight in Sacheon, South Korea. Eurocopter representatives attended the ceremony along with the French and German ambassadors to South Korea and General Argenson from the French Armament Procurement Agency (DGA). The successful flight came after a busy three months of flight tests that began following the first flight of the prototype on March 10. Eurocopter has been providing the necessary technical support for the program, which was launched in 2006, to ensure things go off without a hitch. A team of 30 Eurocopter engineers are on permanent assignment in South Korea, and Eurocopter is also manufacturing some of the helicopter's subassemblies, such as the automatic pilot, gearboxes, and rotor mast.

(1) Korean Utility Helicopter





JULY 19 TO 25, 2010

► **EUROCOPTER AT THE FARNBOROUGH AIRSHOW**

Eurocopter's participation in the Farnborough Airshow was highlighted by two noteworthy events. On July 19, an EC135 P2i was delivered to the West Midlands Police. On the following day, Shigeru Murayama, president of Kawasaki Heavy Industries Aerospace Company (KHI), and Eurocopter CEO Lutz Bertling signed a new cooperation agreement that extended the partnership between the two companies until 2025.

MAY 26 TO 27, 2010

► **HELIPACIFIC**

Australian Aerospace showcased the latest Eurocopter helicopters at the HeliPacific conference on the Gold Coast, Australia. Helicopters on display included the latest word in aircrew trainers, the EC135, which is being proposed as the new trainer for the Australian Defence Force (ADF) as well as a 1/5 scale model of the NH90 NFH version. Nine other aircraft, including the EC120 B, the Ecureuil AS350 B2/B3/SD2, the BK117 and the ARH Tiger were on static display in the external lineup. In addition, Australian Aerospace proudly announced the sale of a multi-role Dauphin AS365 N3 helicopter to the Western Australia Police, which is due to be delivered in September 2011.

The contract, worth more than \$10 million, will provide a much-needed second helicopter for the state's police force.





← **EC120**  
**TAKING YOUR NEEDS INTO CONSIDERATION**

In order to remain current with the expectations of its customers, Eurocopter's Technical & Publication Services organized a client meeting bringing together four important operators of the EC120. In May, Eurocopter invited Singapore Technology Aerospace, the Spanish Air Force, Bundes Polizei and Helidax to its site in Marignane to discuss technical and operational aspects of the EC120 and their expectations for future improvements. These clients, whose helicopters are used mainly for training purposes, presented their company and missions and were then given presentations by Eurocopter engineers and pilots on the evolution of the helicopter and its environment. The exchanges made with Eurocopter staff as well as between the clients themselves were so successful that there is now talk of repeating the event every two years. ■

**BO105 MAINTENANCE AND REPAIR**  
**PROVIDING SUPPORT FOR THE BUNDESWEHR**

To meet the needs of the Bundeswehr, maintenance work on its BO105s is being performed by Eurocopter at the base of the 36th Combat Helicopter Regiment in Fritzlar as part of a short-term support contract. A team of 14 employees was quickly recruited in the spring of 2009 to get the unit up and running. To date, 14 inspections of the BO105 weapon system have been performed, with each one lasting between 4 and 14 weeks. All of the accompanying operations (documentation, finalization flights, etc.) have also been successfully completed, from the initial transfer of the helicopters up through their return to service. All the helicopters were delivered on time and in compliance with specifications, to the immense satisfaction of the customer. This success was made possible through the untiring commitment of the Eurocopter teams and the excellent cooperation of the Bundeswehr. ■



**AMERICAN EUROCOPTER**  
**DELIVERY OF THE 1ST EC145 FOR HEALTHNET AEROMEDICAL**

HealthNet Aeromedical, a consortium of three hospitals that provides medical transfers in six U.S. states, added its first EC145 in May to a fleet of eight other Eurocopter aircraft. The HealthNet fleet transports 3,500 patients a year and has performed more than 50,000 accident-free missions. Completed by Metro Aviation, this new EC145 is equipped with advanced safety technologies such as night vision goggles (NVG) and Dual-Pilot Instrument Flight Rules capability. Thanks to its available safety features and multi-mission capabilities, the EC145 has become the medium class, twin-engine helicopter of choice for a growing number of helicopter emergency medical services (HEMS) in the United States. ■

**PRECISIONS**

In our previous issue of *Rotor Journal* (n°86), we incorrectly stated on page 12 that the Tiger in Australia is fully operational and ready to be deployed outside of the country. Australian authorities have fully qualified the Tiger's weapon system. The qualification means that the Commonwealth of Australia can take the next steps to obtain initial operational capability. Further development of capability, including the progressive deliveries of additional Tiger ARHs to the Australian Army's operational squadrons will contribute to the achievement of "Operational Capable Helicopter". This major program milestone represents the substantial achievement for the Australian Army of full capability. ■



# 1,000

The total number of flight hours logged between August 2009 and June 2010 by the three HAP<sup>(1)</sup> Tigers operated in Afghanistan by the French Army's 5th Combat Helicopter Regiment. The Tigers are used to protect French troops on the ground, and also help ensure the success of ISAF<sup>(2)</sup> missions. The helicopters are flown in extremely harsh environments but still have provided an availability rate of more than 90%. A limited Eurocopter team of three technicians helps the mechanics of the French Army Air Corps maintain this impressive rate for the three machines.

- (1) Hélicoptère Appui Protection/Combat Support Helicopter  
(2) International Security Assistance Force

## AGENDA

**Over the next couple of months, Eurocopter and its subsidiaries will be participating in many different air shows and conventions all over the world.**

**OCTOBER 5-7, 2010**

- **HELITECH**,  
Estoril (Portugal)

**OCTOBER 25-29, 2010**

- **EURONAVAL**,  
Paris (France)

**NOVEMBER 2-4, 2010**

- **DUBAI HELISHOW**,  
Dubai (United Arab Emirates)

**NOVEMBER 10-13, 2010**

- **INDO DEFENCE**,  
Jakarta (Indonesia)

**NOVEMBER 16-21, 2010**

- **AIRSHOW CHINA**,  
Zhuhai (China)

**NOVEMBER 30-DECEMBER 3, 2010**

- **EXPONAVAL**,  
Valparaiso (Chile)

## SPAIN

# A VISIT FROM PATRULLA ASPA

On June 16, Eurocopter had the distinguished honor of welcoming the prestigious Patrulla Aspa acrobatic patrol to its site in Marignane. Based at the Armilla Air Force Training base

in Grenada, Spain, the famous aerial group performs air expositions with six Calibri EC120s and is also responsible for the initial stage of flight training for all Spanish Air Force pilots. ■



© Anthony Pecchi

## ROTOR JOURNAL READER SURVEY RESULTS



As in previous years, as part of their continuing improvement efforts, the editors of *Rotor Journal* conducted a survey in January 2010 to find out what readers thought about the magazine. The average score received by the magazine was 8.28/10, similar to the previous surveys, while the number of replies received skyrocketed. Nearly 900 of you answered the survey, representing a six-fold increase compared with 2007. According to the survey, 93% of readers receive *Rotor Journal* on a regular basis, 79% "always" read it, 85% feel that the information published in *Rotor Journal* is reliable, 91% like the format and 92% find it easy to read. A big thanks to all of our faithful readers! ■

EC145 "MERCEDES-BENZ STYLE"

# The Utility Helicopter That Flies in Style

More than just a classy interior, the new configuration for the EC145 "Mercedes-Benz Style" offers a unique "three-in-one" concept.

ARTICLE: RÉGIS NOYÉ

"The Corporate market was sorely lacking a transport helicopter that could also be adapted to more private uses, such as for leisure activities," explained Patrice Royer, who is in charge of this market segment at Eurocopter. "A key concern for many corporate customers is the helicopter's capability to carry sporting equipment for activities such as golf, polo, skiing or hunting. To borrow a term from the automobile industry, our customers were looking for an 'all-terrain' vehicle."

The twin-engine EC145 seemed tailor-made for such a role. It had already proven its worth through years of effective service in the utility market, as it offers not only large cabin space but also another incomparable advantage: two rear doors that make it extremely easy to load luggage.

The next step was obvious: The helicopter must become compatible with its potential market. A customized layout had to be designed that combined class and comfort with practical use—just the job for the Mercedes-Benz interior design studio in Como, Italy. "Drawing on its experience with its own legendary automobiles, the Mercedes-Benz studio, which is also a shareholder in EADS, developed a modular and flexible 3-in-1 design that can perform the three different missions of most interest to our customers: corporate transport, leisure activities, and sports," said Mr. Royer. This new concept was inspired by the interior design of the new Mercedes-Benz R-Class automobiles, with a layout based on a rail system that enables quick configuration changes. The seats can easily be moved, and a sliding wall has been introduced in the rear of the cabin so that the roomy luggage compartment can be adapted as needed. Three different layouts are possible with an 8, 6 or 4-seat configuration, and the two back seats can be removed to make room for fixtures offering all sorts of conveniences and comforts: an ice box, a table or a video system to name a few. The rear of the cabin also contains attachment points for all types of sporting goods. If the customer so chooses, a partition can also be installed in the front of the cabin.

These various options also come with a choice from a wide variety of materials and colors for the walls, floors, ceiling and seats. Three different external colors are available, including the automobile manufacturer's signature "Formula 1 silver".

## Turning Heads at EBACE

A model of the EC145 "Mercedes-Benz Style" was unveiled in May at the EBACE business aviation convention in Geneva. "It certainly turned a lot of heads," added Mr. Royer. "It was the talk of the show. We received great feedback from the press and customers, and several who expressed interest can definitely be considered likely prospects." The first two machines can be ready for delivery by the second half of 2011, followed by five to seven more in 2012. As the owner of the new design, Eurocopter will be performing the



customization within the Group, with the majority of the work being handled by the Donauwörth plant in Germany.

## A Market on the Move

The first EC145s entered service in mid-2002, and the program now boasts 320 deliveries, including approximately one hundred operated in the United States in the EC645-LUH military version. A total of 85 customers are currently operating EC145s in 32 countries, and the new "Mercedes-Benz Style" version will enable the EC145



Three cabin layouts are offered, with seats for 8, 6 or 4 passengers. In each case, customers have a wide choice of materials and colors for walls, floors, ceilings and seats, as well as three basic external paint colors.

to gain a firm foothold in the corporate and private segment of the helicopter market. This important segment accounted for 22% of worldwide civil and parapublic helicopter sales between 2005 and 2009, with 880 helicopters delivered to customers, or 16% of sales in terms of value. With deliveries of 440 aircraft, Eurocopter's share of this market over the same period totaled 50%, or 40% in terms of value.

Despite a drop in sales due to the weaker economy, the corporate and private segment still accounted for 20% of new civil and parapublic orders booked by Eurocopter in the first half of 2010.

According to Mr. Royer, four key factors define the corporate and private aviation market:

- A helicopter is not perceived as a means of making a profit, but more as a vehicle to be used for work or play.
- The customers have small fleets, often only one helicopter.
- On average, between 200 and 250 flight hours are performed each year.
- The operators rightly expect only the best, whether it be in terms of



lead times, technical assistance or the quality of service in general. Eurocopter currently offers 12 helicopters meeting the needs of these customers, including four single-engine models much appreciated by private operators around the world. With this comprehensive product range, Eurocopter is well placed to respond to all requirements and consolidate its position as the world's leading helicopter manufacturer in this market segment. ■



© Avinco  
François Gautier, CEO of Avinco.

# AVINCO, THE BEST DEAL AROUND

Avinco has become the leader on the pre-owned helicopter market, in part thanks to the close ties it enjoys with Eurocopter.

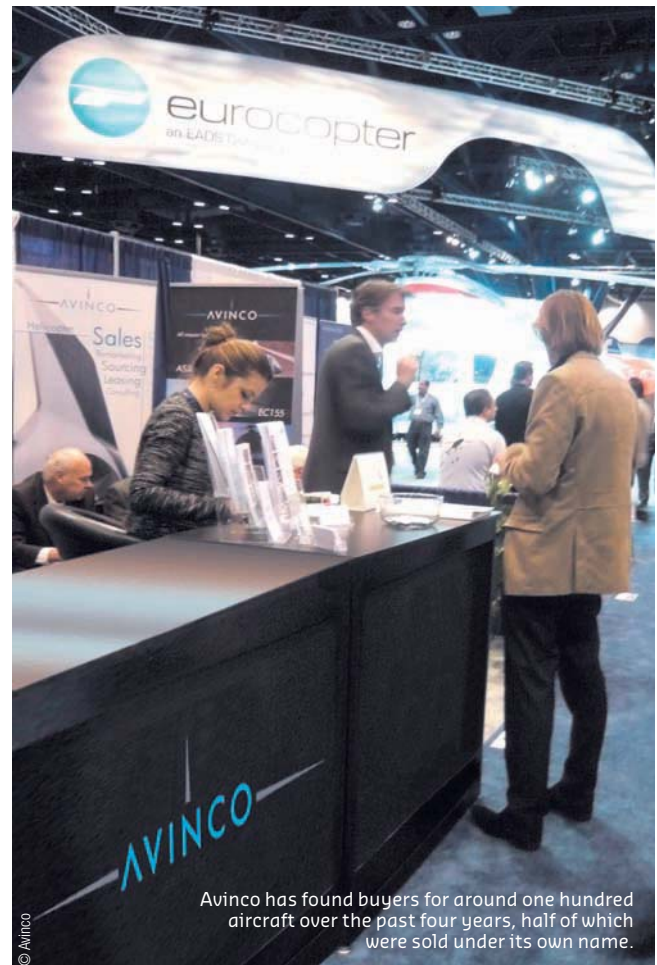
ARTICLE: ALEXANDRE MARCHAND

Avinco, a company specializing in pre-owned helicopter sales, was founded in 2003 by its current CEO François Gautier, who had previously worked for some time at Airbus. “My first trade was airplanes,” he explains, “and it was only later that I expanded my activities to include helicopters.” Avinco acts as a go-between for owners and buyers of previously owned aircraft, but the company based in Monaco and Dublin also buys and sells helicopters on its own. Through these complementary activities, approximately one hundred helicopters have changed hands over the past four years, with about half being sold directly by Avinco.

“We are now the leader in the worldwide market for pre-owned helicopters,” said Mr. Gautier. “We work mainly with developing countries and rapidly expanding, emerging economies. We offer more affordable solutions, and our previously owned helicopters can be acquired more quickly than new ones.” Avinco deals mainly in Eurocopter helicopters from both the current and former range, from the EC120 to the Super Puma, working exclusively in the civil market. Thanks to the company’s close ties with Eurocopter, which brings to the table an extensive product know-how and market intelligence, Avinco is also able to offer technical services that set it apart from the competition. “We can take well-calculated investment risks, such as modifying the configuration of an aircraft or upgrading its equipment,” said Mr. Gautier. Avinco doesn’t hesitate to take commercial risks as well. The company has jumped at opportunities to snap up entire fleets of former-range helicopters. “We acquired a stock of 17 BO105s and 8 Pumas—not many of our competitors would have done the same,” he added. Another advantage is the company’s capability to work worldwide, in particular through cooperative efforts with Eurocopter’s network of subsidiaries.

“It’s a win-win relationship for both Eurocopter and Avinco,” points out Mr. Gautier, “because previously-owned helicopter sales are a great way to attract new customers. We are also

looking to expand our leasing activities to offer a wider range of services.” ■



Avinco has found buyers for around one hundred aircraft over the past four years, half of which were sold under its own name.

## FLEET SAFETY

# Continually Reducing the Risk

Eurocopter's no.1 priority is safety, which is why *Rotor Journal* has chosen to highlight the company's efforts to increase and ensure continued safety. Read on for an interview with David Huntzinger, vice president of Fleet Safety.

INTERVIEWED BY: ERIN CALLENDER



David Huntzinger, an Arizona native, has 30 years of experience in Aviation Safety – including in the US Coast Guard, the airline industry and corporate aviations worldwide.

## Could you please describe Fleet Safety at Eurocopter?

**David Huntzinger** ▶ The Fleet Safety directorate is responsible for making safety enhancement proposals and for managing their implementation. It is divided into two sections: a technical safety team and an operational team. The technical and maintenance section works reactively, based on results from an accident or incident, in partnership with the Design office and/or Support and Services to assure that, when necessary, safety is improved by modifying the design, supporting documentation, training, etc. The operational team, however, works proactively with other relevant directorates to prevent possible problems from occurring. The Fleet Safety directorate works internally on our helicopter designs to continually enforce high safety standards. In addition, we hold information-sharing presentations to report on our progress and continually improve safety awareness within Eurocopter. We also give



## AWARDED FOR SAFETY

On May 12, the IHST received the 2010 AgustaWestland International Helicopter Fellowship Award. Mr. Jean-Pierre Dedieu, former vice president of Fleet Safety at Eurocopter and current member of the IHST Executive Committee, chose to share this honor with Eurocopter for the company's continued dedication to safety improvements.

Safety Management Systems (SMS) presentations and work with customers on their SMS programs. Lastly, we are also involved in several industry initiatives including the award winning International Helicopter Safety Team (IHST) and the European Helicopter Safety Team (EHST).

## What are the major causes of helicopter accidents and what can Eurocopter do to minimize these risks?

**D.H.** ▶ Our largest concern is the operational event, meaning the pilot's actions, inactions or wrong decisions. Our main objective is to reduce the accident rate among our operators, which is hard to do because they are outside of our organization. By increasing training and influencing

them with information and other operational guidance, we are working to reduce the likelihood of this type of accident.

We also try to minimize the contribution of the airframe and the engine to an accident by continually improving the design and optimizing the systems, but to really reduce the operational risk, the trick is to get out to the customers and operators and give them specific guidelines on how to make those improvements. ■

“WE CAN ALWAYS IMPROVE, AND THAT IS OUR GOAL- TO CONTINUALLY IMPROVE FLEET SAFETY.”





NH90 PROGRAM

# Back on Track

Interview with Dominique Maudet,  
executive vice president of Governmental  
Programs and key account manager France  
for Eurocopter Group.

INTERVIEWED BY: MONIQUE COLONGES/FRANCK DESSENSIS

Dominique Maudet, executive vice president of Governmental Programs and key account manager France for Eurocopter Group.



**An important milestone was reached when the first two NH90s were delivered in the NFH<sup>(1)</sup> Step A version to the Netherlands and France respectively. How would you assess the past two years of the NH90 program?**

**Dominique Maudet** ► The delivery of the first NH90 NFHs to the Netherlands and France is a major event, and very symbolic for the entire program. A new delivery is the best possible illustration of the benefits we gained when the program was reorganized in 2008. We still may have some wrinkles to iron out, but the new setup with the two

manufacturers Eurocopter and AgustaWestland behind the controls of NHIndustries has been fundamental. This latest success was also the result of excellent teamwork between the industrial partners on the one hand, as we were able to honor the commitments we made in 2008 to the customer countries, and also between the government agencies, which had a major role to play in the SAR configuration, from its definition to these recent deliveries. Although the NH90 program remains a complex one from a technical, industrial and contractual point of view, it has gotten back on track thanks to the extraordinary work of the various teams, and I would like to take this opportunity to praise their efforts.

Many other milestones have also been reached over the past two years, or soon will be, and a number of them actually contributed to the success of the NFH version: the reorganization of NHIndustries, the qualification of the TTH<sup>(2)</sup> version to the IOC+ standard in 2008, the delivery of the TTH IOC+ versions, qualification of the NFH Step A version, contractual renegotiations with Oman and Sweden in 2009, renegotiation with Greece, on-time delivery to Oman and the preparation of the final FOC standard for the TTH version (in 2010).

The road is long, but our teams can be proud of how far we've come: 52 machines delivered as of July 15, 2010 (49 TTH and 3 NFH versions) to eight customers from five different assembly lines, more than 6,850 flight hours logged by our customers, and a better-organized program.

As of July 15, 2010, eight customers have taken delivery of 52 NH90s produced on 5 different



© Alexandre Dubath





## ► FIRST DELIVERY TO OMAN

In line with contract amendment no. 8 signed in December 2009 with the Royal Air Force of Oman, the first two NH90s were delivered right on schedule to the Sultanate of Oman on June 23, 2010. The delivery, which took place at the Al Musanah Air Base, followed two busy months of flight tests conducted in Oman by the customer in extremely difficult operating conditions. Oman has already begun the acceptance process on two more machines, with delivery scheduled within the next few weeks.

In addition to future helicopter deliveries, Eurocopter will also be providing full support services for the NH90s to ensure they obtain the expected availability levels. To this end, a detachment of qualified Eurocopter personnel is already up and running in Oman. The Sultanate of Oman is the 8th customer to operate the NH90, and the entry into service of the machines will be closely watched by neighboring countries in the region, which is highly strategic for Eurocopter's development.

© Eric Paz / Eurocopter

assembly lines, and the in-service fleet has clocked up more than 6,850 flight hours.

### What are your priorities for the new program phase and for the remainder of the road to travel?

**D.M. ►** As I said, the program has gotten back on track, but everyone must remain focused on the road ahead so we can build on our recent successes. The next two years will be decisive for the program, as the final standards for the TTH (FOC) and NFH (Step B) versions must be qualified and delivered to our customers. Respecting our qualification and delivery commitments is crucial for us and our customers, as they are the foundations on which the future program will be built.

But as we've learned from the Tiger program, the final qualification is certainly an important goal, but yet just one stage in the helicopter's service life. As you said, we are entering a new phase. We have to ramp up our output, as deliveries are scheduled to double in 2010. After revamping our management setup in 2008, we now need to tackle our "industrial transformation" (which is how I would qualify the new industrialization phase for the NH90) to obtain the necessary output from our five assembly lines (with a sixth one on the horizon in Spain). At the same time, we must also improve quality and flexibility, and above all drastically reduce costs. This final point is an absolute priority for Eurocopter and is why the RECOVER project has been introduced as part of the SHAPE program. Better project management must result in better cost controls: Everyone must be aware of this crucial point and make it a priority.

And finally, as more and more customers around the world begin operating the NH90, new deliveries will continue to swell the fleet's ranks, making customer support another key factor to the success of the program. Our teams have many upcoming challenges to face: reaching 10,000 flight hours by the end of the year, increasing the availability of

our customers' fleets, simplifying processes and reducing the maintenance workload are but a few. We have to keep our sights on the future to always be ready for new deployments of the NH90 as well as to offer assistance to any customers who express the need for it.

### With 529 helicopters ordered by 14 customer countries, the NH90 program has been an unequalled commercial success. What's in store for the future?

**D.M. ►** The NH90 alone represents 40% of the Eurocopter order book, and unquestionably it has been a commercial success. Day in and day out, the challenge for us is to make it an industrial success as well—both for Eurocopter, so that we can recoup acceptable profitability levels and for our customers, who will reap the benefits for their operations. This, in no uncertain terms, is our absolute priority.

It's also important to keep in mind that the program still has enormous commercial potential and new contracts to win. For example, Germany may be interested in NFH and TTH versions in the CSAR configuration, and Australia in the NFH version. In addition to its excellent performance levels, the NH90 also offers both countries the opportunity to build on the synergy already existing with their current fleets. Prospects with other potential customer countries are also being explored.

The future of the NH90 is essential for Eurocopter, and we are counting on the teams at NHIndustries and all of Eurocopter's departments to help us ensure its success. ■

(1) Nato Frigate Helicopter / Navy version

(2) Tactical Transport Helicopter / Army version

RETROSPECTIVE

# 1990-2010

The story of the NH90 first began back in the 1980s when the French Navy expressed an interest in renewing its fleet of helicopters. Today the program has come full circle, as the navy recently received its first NH90 in the NFH<sup>(1)</sup> version. *Rotor Journal* takes a look back at some of the milestones in this exceptional program.

ARTICLE: MONIQUE COLONGES

**1988**

Signature of first specifications for the NH90 (NATO staff requirements).

**1990**

Signature by the four founding countries (France, Germany, Italy and the Netherlands) of an MOU<sup>(2)</sup> for the development program.



**1991**

Preparation of design phase and development contract.

**1992**

Creation of NAHEMA and NHIndustries, and signature of development contract.



**1995**

Flight of first prototype.

**1997**

Flight of second prototype.

**1998**

Flight of third prototype.



**1999**

First flights of fourth and fifth prototypes.

**2000**

Signature of industrialization and production contract for an initial batch of 298 helicopters.



**2001**

Portugal joins the program; Finland, Sweden and Norway sign contracts for 20, 18 and 14 helicopters respectively.

**2002**

Assembly of first production helicopter.

**2003**

Greece signs contract for 20 helicopters.

**2004**

The Sultanate of Oman signs contract for 20 helicopters.

**2005**

First flight of high cabin version.

**2006**

Qualification in IOC configuration of TTH<sup>(3)</sup> version; New Zealand signs contract for 9 helicopters; first delivery to German Army.

**2007**

Germany signs contract for 42 additional helicopters; Belgium signs contract for four NH90s in TTH version and 4 in NFH version; France signs contract for 12 additional NH90s; delivery of first helicopters to Sweden, Australia and Italy.

**2008**

New qualification level (IOC+) obtained for TTH versions and e-Basic for Sweden, delivery of first helicopter to Finland; delivery of first MRH90 assembled in Australia; France orders 22 additional helicopters; qualification of export variants for the Sultanate of Oman and Australia.

**2009**

Delivery of first helicopters in IOC+ configuration to Italy, Germany and Finland; the fleet in service totals 5,000 flight hours.

**2010**

Qualification of NFH Step A version and delivery of first two NH90s in NFH version to the Netherlands and France, delivery of the first two helicopters to Oman (8th client).

(1) Nato Frigate Helicopter / Navy version

(2) Memorandum Of Understanding

(3) Tactical Transport Helicopter / Army version

## ▶ THE ROAD AHEAD

The NH90 program has reached a turning point in its history. A major milestone was recently reached when the first NH90s in the NFH version were delivered right on schedule, in accordance with the commitments made by NHIndustries during the 2008 ILA Berlin Air Show. But major challenges of equal importance remain for the qualification, delivery and entry into service of the helicopter.

The full operational capability (FOC) configuration of the Tactical Transport Helicopter (TTH) version is scheduled for qualification before the end of the year. Following the Sultanate of Oman in 2010, other customer countries (New Zealand, Greece and France) will be receiving their first NH90 TTHs over the next few months. The German Army expects to take delivery of its first TTH in the new configuration in 2011, after it has received military type certification.

As for the NFH version, the next step will be the delivery of the NH90s with Step-A mission

capability to Italy and Norway. The Step-B configuration is slated for final qualification before the end of 2011, with the first deliveries to follow in 2012.

In addition to the qualification goals and the increased delivery rates, another crucial element of the NH90 program for Eurocopter is the RECOVER cost-savings and industrial transformation plan (*see article, page 21*). Retrofits must also be prepared for the helicopters that have already been delivered in order to bring them up to the full operational standard.

Last but not least, support services are vital as the fleet continues to grow (52 helicopters have been delivered to eight different customers as of July 15, 2010). The target is to reach 10,000 flight hours before the end of the current year. To make this possible, top priority will be given to updating current processes and resolving any technical problems encountered by customers.

# NH90 SUPPORT MOVES INTO OPERATIONAL PHASE

Now that the first aircraft have been delivered, the NH90 support teams are focusing on operational aspects, helping customers to prepare for the aircraft's operational deployment.

ARTICLE: CHRISTIAN DA SILVA

With 52 aircraft currently in operation, the NH90 fleet has achieved nearly 7,000 flight hours to date, a total that is expected to hit the 10,000 mark by the end of 2010. The Support teams have a clearly defined role: "We are in the process of introducing a highly sophisticated new aircraft to our customers. Our main objective is therefore to accumulate a maximum of flying experience so as to bring the product to maturity as soon as possible," says Pascal Gaudry, Service Chief Engineer NH90. Working in close liaison with the Design Office, the Support teams are pursuing a twin-track approach. Their first aim is to reduce the volume of maintenance work. Until now, maintenance requirements have been estimated on the basis of feedback from the qualification process. From now on, as more experience is gathered in the field, these initial estimates will be revised to take account of real operating conditions. The teams' second task is to solve the technical problems associated with this young aircraft revealed during flight exercises with the customer. "To obtain results within the shortest delay, I am encouraging customers to fly their aircraft as much as possible. The more flight hours they accumulate, the easier it will be for Eurocopter to provide a rapid response to any technical or maintenance problems that might arise," explains Mr. Gaudry. One of their upfront measures has been to set up a "control room" at NHIndustries, manned by experts representing all three program partners. This centralized facility will enable them to identify, collate and display in real time the causes of any instances of aircraft unavailability in the worldwide fleet, which will be classified according to one of three major reasons: scheduled maintenance, technical fault or unavailability of spare parts. The system will allow the experts to quickly deduce what short-term action is needed in order to return any given aircraft to the skies as quickly as possible, as well as any long-term measures to be undertaken by the engineering departments of the three program partners in order to refine the aircraft's design. This instrument will enable the Support teams to provide an instant

response to any problem, while at the same time gathering useful feedback that will help them to draw up a list of improvements capable of permanently increasing fleet availability.

"The product definition phase by no means ends when the aircraft is delivered. There are always improvements that can be made right up to the time it enters operational service with the customer. In this new phase of the program, our primary focus is on operational support, which means doing everything we can to assure the best possible flight performance," concludes Mr. Gaudry. ■

The next challenge is to set up the necessary



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© Marcus Schiaff

### THE RECOVER PROJECT

# GEARING UP FOR NH90 SERIES PRODUCTION

The Recover project was launched in February 2010 to introduce the industrial transformation of the NH90, as the program must now change gears. Up until now, smaller series of helicopters have been produced in intermediate configurations, but much larger series will now have to be manufactured in their contractual configurations. This is no small task, as 470 NH90s must still roll off the lines.

ARTICLE: CHRISTIAN DA SILVA

support services and to perform an industrial transformation to meet the targeted delivery schedule.

The industrial transformation program is based on four new policies that will usher in significant, long-term improvements in the manufacturing/delivery cycles and the operational reliability of NH90s already in service.

First, a better adapted industrial organization is being implemented to boost production rates and respect the delivery lead times of the quickly maturing program. This is a big challenge for a helicopter such as the NH90 due to its technological and industrial complexity. Second, far-reaching actions will be taken to help suppliers continuously improve the quality, reliability and robustness of the NH90 equipment. The goal is a simple but vital one: help Eurocopter quickly resolve any detected technical problems before presenting the helicopters to customers for acceptance.

Third, as per contractual requirements, Eurocopter must retrofit the helicopters that were not delivered in the initially defined contractual configuration (in particular so that they could be used for pilot and technician training). The goal is to bring the helicopters up to the final

standard as established in the contract. A new setup with adapted processes is being studied together with the customers to define the terms for the installation and delivery of aircraft that must be retrofitted.

Fourth, dedicated teams will be set up to develop a structured process that will reduce the volume of test flights required. The teams will be working with the various Eurocopter departments and directly with the customers to determine what is strictly necessary for testing the NH90s now that the configurations are consolidated and the NH90 is entering the series production phase. In the end, an optimized acceptance phase will be defined in cooperation with the customers.

“The new project will also improve customer satisfaction over the short term, as we will be providing better quality and respecting lead times, as they have the right to expect,” summed up Pierre Rossignol, who heads the Recover project at Eurocopter Governmental Programs. ■



© Jérôme Daulin / Eurocopter

Two of the major innovations of the NH90 are the unique rotor-blade folding system and the

# THE NH90, A SHOWCASE FOR NEW TECHNOLOGIES

The cutting-edge technology developed for the NH90 has made quite a reputation for the helicopter, now considered to be one of the most ambitious programs in the world to be launched over the past 20 years.

ARTICLE: CHRISTIAN DA SILVA

The NH90 integrates a full gamut of innovative equipment, making it the most modern helicopter of its generation. In addition to its advanced avionics suite, electronic systems are now used in a wide range of applications.

- The introduction of fly-by-wire controls. The NH90 was the first helicopter in the world to obtain ADS-33C qualification for its handling qualities. The helicopter has demonstrated that it is possible to achieve level-1 flying quality, the highest level obtainable, with fly-

by-wire controls. This level was required by the contract and is synonymous with high pilot ratings for handling.

A key feature of the fly-by-wire technology is that it reduces the pilot's workload so that he can remain fully concentrated on his mission, but it offers many other advantages as well. Its full-authority capabilities offer significantly improved flying quality (better flight control decoupling, improved handling and stability), and has made it possible to reduce the helicopter weight: The flight

control shielding to protect against ballistic vulnerability has been reduced thanks to the system's redundant, segregated setup. This redundant architecture is required for flight safety, but it also offers the helicopter higher availability levels and ensures greater mission reliability.

- A deicing system for the carbon rotor blades, which offer an increased service life and reduced maintenance.

- A fire detection system. This new technology, based on an optical detection



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## VERSIONS, VARIANTS AND QUALIFICATION STAGES

## GLOSSARY

Here are a few keys to understanding the NH90 program, which at times may seem a bit complex.

### ► Two basic versions

#### • TTH – Tactical Transport Helicopter:

The TTH version can perform tactical transport missions for troops (20 soldiers plus their equipment), a light vehicle or 2,500 kg of cargo.

#### • NFH – Nato Frigate Helicopter:

The NFH version was developed for three types of naval missions: anti-ship warfare, anti-submarine warfare and SAR (search and rescue).

Based on these two basic versions, a total of six versions were developed to better meet customer needs.

Version	Cabin		Engines		Landing Gear		Blade Folding	
	Standard	High	RRTM	GE/Alfa	Absorption	Swivel	Manual	Automatic
T	✓		✓		✓		✓	
G	✓			✓	✓		✓	
N	✓		✓			✓		✓
H	✓			✓		✓		✓
B		✓	✓		✓		✓	
M	✓			✓		✓		✓

### ► More than 20 variants

The name of each variant is made up of four letters:

- The first letter indicates the version.
- The next two letters are an English abbreviation for the customer country.
- The last letter indicates which branch of the armed forces<sup>(1)</sup> will be using the helicopter.

Example: The TGEA version indicates the following:

- T means a TTH version with a standard cabin, RRTM engines, manual blade folding and absorption landing gear.
- GE means the helicopter is for Germany.
- A means it will be operated by the German Army.

### ► Qualification stages for the NAHEMA customer

#### For the TTH version:

- **IOC:** initial operational capability, for flight crew training.
- **IOC+:** enhanced initial operational capability, configuration enabling nearly all intended missions to be performed.
- **FOC:** final operational capability, configuration enabling all required missions to be performed.

#### For the NFH version:

- **Step A:** intermediate configuration for flight crew training and SAR missions (Search and Rescue).
- **Step B:** final configuration, capable of performing all the required missions.

(1) A / Army; F / Air Force; E / Version with optional Air Force equipment; N / Navy, anti-ship warfare; S / Sea-based support for the Navy; T / Land-based support for the Navy

aircraft's fly-by-wire control system.

system with confirmation via a thermographic sensor, has made false alarms a thing of the past, as NH90 crews can now avoid the risk of non-justified emergency landings.

- An extremely innovative blade folding system in which electrical controls have completely replaced hydraulics.

- Protection in the event of hard or forced landings. Kinetic energy absorption dampers have been integrated, together with a revolutionary new system that slows the rotation of the nose landing gear and places it in a flattened position if a problem should occur when the landing gear is down. All the personnel on board (both the flight crew and troops) also have effective energy-absorbing seats.

- Comprehensive immunity to electromagnetic interference (EMI) in the harshest environments, including nuclear-induced electromagnetic pulse (NEMP), high-powered microwaves, or the radar transmissions of aircraft carriers and other naval vessels.

- Because the NH90 may at times be operated in civil air space, it has been equipped with compatible civil/military systems as part of its COM/NAV avionics package. The multifunction system manages a comprehensive set of parameters and flight data, much like a Flight Management System (flight path guidance, preparation of flight plans, approach procedures). ■

## LOGISTICS TRANSPORT

# THE GOGREEN CONCEPT

Eurocopter Deutschland (ECD) and DHL have signed a contract for a new merchandise and spare part shipment process that will leave no CO<sub>2</sub> footprint.

ARTICLE: STEPHANIE POTRATZ



“CUSTOMERS WITH DDU/CIP<sup>(3)</sup> CONTRACTS SIGNED WITH ANY ENTITY OF THE GROUP WILL BE ABLE TO PROFIT FROM THIS INNOVATIVE NEW SERVICE FREE OF CHARGE.”

On May 27, ECD and DHL signed a contract at DHL's innovation center in Bonn for a unique service offered by the logistics specialist<sup>(1)</sup>: the GoGreen concept. The deliveries performed by DHL for ECD now have no negative impact on worldwide CO<sub>2</sub> emissions. The new contract is another important step in Eurocopter's efforts to comply with the REACH<sup>(2)</sup> requirements. “At Donauwörth, we had already set up the first DHL unit that included all three divisions: DHL Express, Global Forwarding and Freight,” explained Holger Skov, who is head of the Logistics service center. “It only seemed natural to take the next step: implement a solution that would help protect the environment. Through a Eurocopter initiative, the GoGreen concept, which was originally developed for DHL Express, has been deployed in other divisions. This is a first in the aeronautics industry.”

How does GoGreen work? It is based on a system of offsets: The quantity of CO<sub>2</sub> emitted during the shipment is precisely calculated and balanced against equivalent savings generated by ecological projects elsewhere in the world. “In sum, this means that our CO<sub>2</sub> footprint is zero in global terms,” said Mr. Skov. “This gives Eurocopter an edge over the competition in international calls for tenders, where ecological criteria are becoming increasingly important.”

## Implementation throughout the Group

The GoGreen spares logistics program is making key contributions not only to the REACH and Bluecopter<sup>®</sup> projects but also to the Donauwörth plant and beyond. Mr. Skov discussed possible future developments: “As the project is part of an EADS framework agreement, it could quite possibly be deployed throughout the Group, and any customer who has signed DDU/CIP<sup>(3)</sup> contracts will be able to benefit from this innovative service free of charge.”

## Giving Customers a Competitive Edge

The strategic importance of a sustainable procurement chain is important not only for Eurocopter: “Initial feedback shows that shipments with a net zero carbon footprint are also important for our customers, as the program can help them meet their own objectives for reducing CO<sub>2</sub> emissions,” summed up Mr. Skov. “Even though they save peoples' lives every day, many helicopter operators are still criticized for generating noise and greenhouse gases. Opting for shipments from Eurocopter under the carbon offset scheme enables them to enhance their own green credentials.” ■

(1) DHL employees are on permanent assignment at the Donauwörth plant to process Eurocopter shipments.

(2) Registration Evaluation, Authorisation and Restriction of Chemical Substances

(3) Delivery Duty Paid / Carriage Insurance Paid



## MAINTENANCE CENTERS

# A Global Network

To guarantee the highest levels of quality and safety worldwide, Eurocopter continues to expand its network of accredited maintenance centers. Two new centers were recently inaugurated in Kazakhstan and in Tunisia, and a third project is in the works for another center in Malaysia.

ARTICLE: ERIN CALLENDER



## SKYTECH

The first helicopter maintenance center to be approved by Eurocopter in Kazakhstan and Central Asia, SKYTECH joined the family of Eurocopter Maintenance Centers on April 2. In order to showcase its new center as well as its upcoming projects, SKYTECH organized a ribbon-cutting ceremony on July 16 at its headquarters in Boraldai, in the presence of the Kazakh aviation authorities, the Ministry of

Transport and Communications and current and future customers. During the ceremony, SKYTECH officially received the maintenance certificate from Eurocopter. With this new accreditation, SKYTECH aims to improve its facilities and equipment and extend its presence on the international scale, while upholding its ongoing commitment to safety, reliability and excellence. ■

## TUNISAVIA

On April 8, Eurocopter signed a cooperation agreement with the Tunisian air transport and services company Tunisavia. Under the agreement, the Tunisavia maintenance center at the Sfax Tina International Airport was accredited as a Eurocopter Maintenance Center. Showcasing Tunisia's ability to provide professional maintenance while meeting the quality and flight safety requirements for customers, this new maintenance center will help Tunisavia reach its goal of becoming a distinguished center in the Maghreb region. ■



## SABAH AIR

Eurocopter Malaysia and Sabah Air Aviation signed a Memorandum of Understanding (MOU) on May 7 at the 1st Borneo International Oil and Gas Conference & Exhibition for the creation of a Eurocopter Maintenance Facility approved by the Malaysian Department of Civil Aviation (DCA). This center will provide quality support and services (O and I level activities) for two new Eurocopter helicopters, an AS355 NP and an EC145, which will be delivered to Sabah Air in the second half of 2010. In order to reach the ultimate goal of creating a Eurocopter accredited maintenance center in the region, Sabah Air has sent its top engineers to undergo training for Eurocopter helicopters in

France and Germany. Sabah Air is committed to upholding the highest level of international standards, and with Eurocopter's partnership, the company is on the right track for development in this field. ■

DISPLAY SYSTEM FOR THE EC135, EC145 AND EC155

# Successful WAAS Integration

On July 16, 2010, an innovative display system developed by Eurocopter was certified by the European Aviation Safety Agency (EASA). Details below.

ARTICLE: STEPHANIE POTRATZ

For the first time, the WAAS<sup>(1)</sup> function (see inset) has been integrated with an existing helicopter display system based on the “ILS look-alike<sup>(2)</sup>” concept. The end goal of this adaptation work is to obtain certifications for new approach technology (LPV, LNAV/VNAV<sup>(3)</sup>). It has already undergone intensive test campaigns (four in 2009 and one in 2010) at the American Eurocopter plant in Grand Prairie: To date, more than 230 WAAS approaches totaling more than 61 flight hours have been performed. As part of an ongoing certification process, the FAA participated in a flight campaign last December. The new system makes it possible to land at sites not equipped with ground

stations, which are expensive to operate and maintain. It can also be used for landings at hospital helipads and on oil rigs—even in harsh weather conditions. Mario Kolbe, an R&D engineer at Eurocopter, talked about another major advantage offered by the system: “The pilot’s workload remains well within the acceptable range even for steep approaches up to 6°.”

This upgraded system was originally intended for all the helicopters equipped with “Avionique Nouvelle” (the EC135, EC145 and EC155), but the results may be adapted for integration in the display systems of other helicopters, such as the EC175 and EC225. “Helicopters equipped

with this technology will soon be available in the United States,” said Wolfgang Leprich and Michael Baumgart, R&D engineers at Eurocopter. “The technical work required to fit helicopters with the new system is relatively minor. Eurocopter is now perfectly poised to introduce this new technology on the European market.” ■

(1) Wide Area Augmentation System

(2) During the approach phase, the GPS/SBAS-compatible receiver uses an interface very similar to that of the ILS receiver. The GPS sensor sends the position offset signals to the electronic display system via the existing ILS input. The display system then sends the information to the autopilot. A major advantage of the system is that the coupling with the autopilot is maintained.

(3) Localizer Performance with Vertical Guidance / Lateral Navigation / Vertical Navigation: new GPS approach procedures

## SBAS

SBAS<sup>(1)</sup> is the general term used to describe technologies such as WAAS and EGNOS<sup>(2)</sup>. These complementary systems significantly improve both the accuracy and reliability (through improved data integrity) of the GPS system. WAAS has been fully operational in the United States since 2003. Meanwhile, more WAAS approaches are performed there than traditional ILS<sup>(3)</sup> landings.

(1) Satellite Based Augmentation Systems

(2) European Geostationary Navigation Overlay Service (slated for certification in November 2010)

(3) Instrument Landing System: traditional system requiring a ground support infrastructure





In 2009, the Bavarian Police helicopter squadron flew 3,345 missions and totaled 4,000 flight hours.



EC135/EC635

# 900th Delivery

On June 10, the 900th helicopter in the EC135/EC635 family was handed over to Bavarian Interior Minister Joachim Herrmann during the 2010 ILA Berlin Air Show. This aircraft will be joining the fleet of seven other EC135 P2+ helicopters already operated by the Bavarian Police. *Rotor Journal* took the occasion to look at some of the reasons behind the twin-engine's immense success.

ARTICLE: MONIQUE COLONGES

The EC135 is the ideal helicopter for law enforcement missions thanks to its exceptional maneuverability and wide range of optional equipment, such as the FLIR, rescue winch and fire-fighting kit. Already well-known for its low operating costs, reliability and high safety levels, it can be rapidly configured for all types of missions (search for missing persons and criminals, road traffic surveillance, emergency rescues). The EC135 is IFR-certified and has a glass cockpit that is compatible with night vision goggles.

In 2009, the Bavarian Police Squadron logged 4,000 flight hours during 3,345 missions, including 35% for locating missing persons, 15% for criminal investigations and 10% for training. The Bavarian Police signed a ten-year PbH<sup>(1)</sup> contract associated with the purchase of their eight EC135s.

At the end of 2009, 822 EC135/EC635s were in service throughout the world, and the fleet had totaled 1,600,000 flight hours.

More than 300,000 hours were chalked up in 2009 alone. The two stumping grounds of the light twin-engine remain the EMS segment, with 80% of the worldwide market for twin engines, and law enforcement, with 60% of the worldwide market. But the helicopter has also been successful in the oil & gas segment and on the military market,

where the EC635 version is used to train pilots.

The EC135 is also the quietest helicopter in its class (based on official data), which is a major selling point for customers flying missions over cities and populated areas. ■

(1) Part by Hour

## ► TESTIMONY

"For the tactical operations of the Bavarian Police, two key advantages of its modernized fleet of EC135s are the new FLIR<sup>(1)</sup> system coupled with a perfectly adapted operator station, which can perform air-to-ground image transmissions and digital video recording. Three super sensitive sensors (for daylight, infrared and low luminosity) and a high-definition image make it much easier to identify objects, and with our new high-power telephoto lenses, the helicopter can perform its missions at higher altitudes and from greater distances where it can't be seen or heard. This means increased safety and better tailing capabilities.

The FLIR controls are assisted by the EuroNav global navigation system, enabling the guidance system to be locked onto extremely precise coordinates. Through the use of a database, we can narrow down the positioning to a single street, or even an individual house."

*Peter Wolf, Bavarian Police Commissioner.*

(1) Forward Looking Infra Red

## SUPER FRELON

## A VIRTUOSO TAKES ITS FINAL BOW

On May 5, 2010, the last remaining helicopter in the French Navy's Super Frelon fleet flew in to Marignane on a brief farewell visit to the place where it first took flight almost 50 years ago. The following day, it made its final journey to the helicopter museum in Dax. We pay tribute to this virtuoso of the skies.

INTERVIEWED BY: CHRISTIAN DA SILVA



Lieutenant Christophe Noyer, an experienced operational pilot (with 4,000 flight hours to his credit, including 2,200 aboard the Super Frelon) and second-in-command of Flotilla 32F.

### What was it like to fly the Super Frelon?

**Christophe Noyer** ▶ It was an outstanding aircraft for its time, robustly built and capable of performing under the most demanding conditions, with an exceptional payload capacity that resulted in its being deployed on every type of mission carried out by the French Navy. It was used to transport commando troops, perform

maritime search and rescue missions and as a supply helicopter for naval vessels at sea. In short, it was the workhorse of the French Naval Aviation. And like every other aircraft of its generation, it required a certain amount of physical effort to fly. You could always feel the vibrations and smell the hydraulic oil!

### What is the most difficult aspect of rescue operations?

**C.N.** ▶ We were on permanent standby, 24 hours a day, 365 days a year, with only four crews and the same number of Super Frelons. The missions we flew when tankers like the Amoco Cadiz or the levoli Sun went down received a great deal of media attention. But in fact our most dangerous missions often involve rescuing the crews of sixty-foot

yachts and small fishing vessels, in heavy seas and high winds in the dark of night. There are not many of us in this profession, and we have to work under enormous pressure. We train hard to perfect our know-how and our ability to handle the aircraft under all circumstances. In the heat of the action, when every second counts, the coordination of the helicopter crew is essential. The pilot and the winch operator have to remain in full control of the operating environment. We keep up our motivation by thinking about the people who need to be evacuated: If we don't succeed, it will be a long time before anyone else can come to their rescue. We demand a lot of ourselves, but also of our aircraft, because the success of our missions ultimately depends on our confidence in its performance.



Throughout its many years in service with the French Navy, the Super Frelon consistently demonstrated its capacity to provide almost 100% availability and a seldom-equalled level of performance.

### What do you think about the arrival of the NH90 in your unit?

**C.N.** ▶ I am sure that the NH90 will improve our mission capabilities. Its performance, advanced modes and modern features will facilitate the transition, and it will reduce the pilot's workload by automating certain control functions. We nevertheless have a lot of work to do because the new aircraft represents a huge technological leap forward. We will have to revise our mission strategy to take account of the new capabilities offered by the NH90 and get used to new procedures and equipment. In the end, we hope to be able to permanently widen the scope of our activities.

During the transition period, we will be using the EC225/725 to maintain maritime rescue services. The modern technology integrated in these aircraft will help us to prepare for the introduction of the NH90 in the navy's helicopter fleet. ■

► ID CARD

**Name:** Super Frelon

**First flight:** December 1962

**Length:** 23 m

**Width:** 5 m

**Height:** 6.7 m

**Rotor diameter:** 18.9 m

**Engines:** three Turbomeca turbines

**Maximum weight:** 13 metric tons

**Maximum speed:** 275 km/h

**Cargo bay volume:** 22 m<sup>3</sup>

**Sling load capacity:** 5 metric tons

**Range:** 855 km (1,230 km with two 500-litre auxiliary tanks)

**Number of units sold:**

approximately 100, purchased by France (27), Australia (1), Norway (1), the Netherlands (3), South Africa (17), the Democratic Republic of Congo (1), Israel (12), Libya (9), Iraq (14) and China, where 13 were manufactured under license under the designation Z-8.



The EC635 has enabled the Swiss Air Force to widen the scope of its missions.

© Alexandre Dubath

SWISS AIR FORCE

# The EC635 Enters Service

On May 28, a ceremony was held in Alpnach, Switzerland to mark the day the 20 EC635s operated by the Swiss Air Force officially obtained full operational capability status. The program's success was the result of a cooperative effort between RUAG Aviation and Eurocopter. Lieutenant Colonel Werner Tarnutzer talked with *Rotor Journal* about his experience with the new fleet.

INTERVIEWED BY: STEPHANIE POTRATZ



**How would you assess the EC635's introduction into the Swiss Air Force—from initial training through to the current operational phase?**

**Werner Tarnutzer** ▶

Looking back, I would say that things went very smoothly, and the 5,000 flight hours obtained by our Air Force with no major incident are proof of it. In the fall of 2007, we participated in an exchange program on the EC135 with pilots from the German Army Air Corps in Bückeburg. This helped us to prepare for the arrival of first four EC635s in 2008, which our pilots and technicians had already flown during their training at the Eurocopter facilities in Donauwörth.

When they returned to Switzerland, they in turn instructed their colleagues by "training the trainers". We then went through an assessment phase in which we established operating procedures for the new helicopters, including missions at night and in mountainous terrain, transporting loads and the use of hoisting equipment. In early 2009, two new EC635s replaced the Dauphins that until then had been used for Swiss government flights (STAC). Since mid-2010, the EC635s have been successfully performing a variety of different missions.

**For what types of missions do you use the EC635?**

**W.T.** ▶ It replaced the Alouette III for pilot training and light transport missions. We also use it for troop and passenger transport, carrying internal and sling loads, recon-

naissance flights and to provide support for the border police, state authorities and law enforcement agencies. The night flight and instrument flying capabilities of the EC635 have enabled us to significantly expand our range of operations, as we've experienced for ourselves in numerous missions.

**In your opinion, what are the main advantages offered by the EC635?**

**W.T.** ▶ The cockpit arrangement is based on a logical, coherent design, which simplifies the pilot's job both during training and actual missions. The flight control system coupled with auto-pilot is also a great help. The EC635's excellent range means we can perform missions over long distances, and its low vibration levels result in lower noise pollution and better passenger comfort. ■

## HÉLI-CHALLENGE

# Delivery of the 5,000th Ecureuil

On May 6, Héli-Challenge received the 5,000th AS350 B3 Ecureuil (the 4,000th single-engine Ecureuil delivered by Eurocopter). It will be joining seven other Ecureuils in the Héli-Challenge fleet, which is almost exclusively made up of Eurocopter helicopters. The delivery was just the latest chapter of a partnership that began more than three decades ago.

ARTICLE: CHRISTIAN DA SILVA

What better way to introduce Héli-Challenge than by talking about one of its missions? Each year from November through March, an AS350 B3 Ecureuil provides support to the scientists at the Paul Émile Victor Institute in Antarctica. Flying out of the Astrolabe ship owned by the CNRS, it transports goods and personnel to the Dumont D'Urville base on the continent.

"The temperature ranges from +5° to -5° Celsius during the austral summer, but the wind can gust at speeds between 150 and 200 km/h," explained a visibly unruffled Claude Évangelisti, the president of Héli-Challenge. "The AS350 B3 Ecureuil is the only helicopter in its class that can handle these missions in complete safety, as it can perform rotations with 1,200 kg of payload and a full hour of endurance." The small company located in Gap, France performs a wide array of missions: passenger transport, aerial work in the mountains,

servicing gold mines in Guiana, fire-fighting, flight training<sup>(1)</sup>... the list goes on and on.

But the second pillar of Héli-Challenge's activities is maintenance. The company is a PART 145 certified maintenance center that honors maintenance contracts for approximately 30 customer helicopters, ranging from the EC120 to the EC155. The company can perform simpler tasks such as daily visits, but also more large-scale work such as Major Inspections, modifications and complex aircraft work. The Héli-Challenge team also performs work directly at customer premises all around the world (Morocco, Lithuania, Italy, Estonia, etc.). In 2009, Héli-Challenge also received the CAMO Part M Sub-part G certification, with an I authorization to extend or renew the airworthiness certificates of Eurocopter helicopters up through the EC155 B1. This authorization enables the company to meet the needs of operators with smaller fleets

who haven't yet filed for the certification.

The economic crisis certainly hasn't affected Héli-Challenge, which posted annual sales of €7 million (half of which is generated by its maintenance services) and is looking to expand its activities in Eastern Europe (Romania, Russia, etc.).

"Throughout my career dating back to 1974, my teams have been working with products from Eurocopter, which has always been our number one supplier of helicopters and spare parts," said Mr. Évangelisti. "I do my best to promote Eurocopter machines whenever I get



Claude Évangelisti, CEO of Héli-Challenge.

© Thierry Rostang / Eurocopter



Each year from November through March, an AS350 B3 Ecureuil operated by Héli-Challenge brings vital supplies and reinforcements to the Dumont d'Urville Antarctic research station.

© DR

the chance. I remember once in Tallard I had a Russian operator give the AS350 B3 Ecureuil a try. Right after he flew a test flight and evaluated the helicopter over the peaks of the Alps, he purchased one of the Ecureuils we had on order with Eurocopter because he was so excited to get his hands on the machine!" A better ambassador for Eurocopter could hardly be found. In 2012, when he passes on the reins of his company to new management, he will also do his best to pass along his passion for helicopters, which has lasted more than four decades now. "It's more than just a job—it's my life!" ■

(1) FTO-TRTO certification for ab initio training and type ratings on the EC120, EC130, and AS350/AS355 Ecureuil

# EUROCOPTER VOSTOK A Quickly Growing Subsidiary

At the 3rd edition of the HeliRussia international exhibition held in Moscow from May 20 to 22, Eurocopter presented the EC175 to the Russian public for the first time. For the occasion, *Rotor Journal* takes a look at Eurocopter Vostok, the Group's subsidiary in Russia.

ARTICLE: MONIQUE COLONGES

The full-scale mockup of the EC175 drew crowds of visitors to the Eurocopter display area at HeliRussia. Among them were UTair, one of the helicopter's potential customers in Russia, and representatives of the Russian government and the operator Gazpromavia. The latter will be receiving eight EC135s before the end of the year for monitoring gas pipelines in Siberia. The helicopters are equipped with an avionics system developed by the Russian manufacturer Transas. "We have been working with Transas to add a Russian dimension to our customers' helicopters," explained Laurence Rigolini, who recently took over the reins at Eurocopter Vostok. "The EC135 is only the first step in the partnership, as we plan on using this same approach throughout the entire Eurocopter range." It should be noted that almost all of Eurocopter's helicopters are certified to Russian standards, the next in line being the EC225, which is expected to receive certification by the end of the year. At present, 84 Eurocopter helicopters are being flown in Russia and the Commonwealth of Independent States. "The region offers huge potential for new sales," said Ms. Rigolini.

"Approximately one thousand Russian helicopters nearing the end of their service lives will soon have to be replaced. In addition, the federal governments have increasing needs for helicopters that can perform EMS and law enforcement missions, and oil & gas operators are also looking to add to their fleets." Eurocopter, the only foreign helicopter manufacturer with a subsidiary in Russia, has a

UTair and Sky Services in Kazakhstan. The overriding goal is to see more and more Eurocopter helicopters in the Russian skies, with pilots and technicians trained to use Western technology to guarantee maximum flight safety. "The subsidiary will have to grow in order for our strategy to be a success," concluded Ms. Rigolini. "The top priority of each employee at Eurocopter Vostok will always



With a 70% share in the local market, Eurocopter is the sole supplier of helicopters to Russia's government agencies and the preferred Western supplier to major operators in the region.

70% market share in the country and is the sole supplier to Russia's government agencies. Eurocopter is also the Western supplier to major operators in the region such as UTair and Gazpromavia. The Group is pursuing an active growth policy in the country by sending its tech reps into the field to offer more localized services, and also by developing its network of Eurocopter-certified maintenance centers that currently includes Russian,

be to better satisfy our customers' needs. In the future, we will be even more attentive to the needs of our long-standing customers and will be strengthening our ties with those who have been working with Eurocopter Vostok since its founding. At the same time, we will be redoubling our efforts to attract new prospects, who have been showing an increasing interest in Eurocopter's innovative products." ■





ROMANIA

# AN INCREASED PRESENCE

Eurocopter added a new chapter to its long history of partnership agreements with Romania this past June. Details below.

ARTICLE: MONIQUE COLONGES

Eurocopter reached two important new agreements in Bucharest on June 17, 2010. The first was a framework agreement signed by Eurocopter CEO Lutz Bertling and the Romanian Minister of Economy Adriean Videanu for the creation of an “aerospace technology park” in Brasov that will group together the major projects undertaken by both Eurocopter and the Romanian government. As part of the new agreement, three centers of excellence will be created, with the first two being set up at Eurocopter Romania. The first will be dedicated to maintenance, repair and overhaul (MRO) work on legacy aircraft types, and the second center could be operated as an assembly line that can be adapted to the number of helicopter sales to the Romanian government. The third center, to be located at IAR Brasov, will manufacture helicopter spare parts. That same day, Mr. Bertling and Mr.

Banea, the president of IAR Brasov, signed amendment no. 3 to the Eurocopter Romania shareholder agreement. The new amendment in no way modifies the shareholder structure—51% Eurocopter, 48.997% IAR Brasov and 0.003% private investors. Instead it calls for a contribution in kind by IAR Brasov of its industrial maintenance tools and documentation for the Puma and Alouette, as well as the facilities and ground space required to ensure the subsidiary’s continuing activities in complete autonomy. It should be noted that in recognition of the assets transferred to Eurocopter Romania, the Romanian government reiterated its commitment to entrust the subsidiary with the support services for its 65 IAR330 Pumas and its 7 IAR316 Alouettes.

In his speech for the occasion, Mr. Bertling stressed the strategic importance of the partnership with Romania, as Eurocopter

Romania will now be the cornerstone of the Group’s activities in Eastern and Central Europe. ■

## ► IDENTITY CARD

**Name:** Eurocopter Romania

**Date of creation:** 2001

**Main office:** Brasov

**Activities:** maintenance, overhaul/ repair, retrofit of legacy-type Eurocopter helicopters

**Employees:** 138

**CEO:** Jean-Louis Mascle

**2009 sales:** € 25.5 million

**Region served:** Romania, Serbia, Bulgaria, Moldavia, Hungary, Georgia

FISHTAIL AIR

# RESCUE ON THE ROOF OF THE WORLD

With its capability to manoeuvre the world's highest peaks, the Ecureuil AS350 B3 has become an essential ally when it comes to saving lives in extreme conditions. The recent longline rescue of three mountain climbers is a perfect example.

ARTICLE: GLORIA ILLAS

On April 29, 3 Spanish mountain climbers were rescued on Mt. Annapurna (8,091 m) in the Himalayas after having been stranded on the mountain for 36 hours due to bad weather. The climbers were rescued thanks to a new aerial service offered by two operators specializing in high-altitude rescues: the Nepalese company Fishtail Air and the Swiss company Air Zermatt. Since the

service began in early spring, the Swiss team and the Ecureuil of Fishtail Air have performed a number of important missions at high altitudes. However, this rescue of the three Spanish climbers deserves special mention: not only because it took place at 6,900 meters, while the maximum certified altitude of the AS350 B3 Ecureuil is only 7,000 meters, but also because of the daring rescue method used.

The operation, known as a "longline" or "human sling" rescue, is a risky business that requires a versatile and reliable helicopter,

not to mention a seasoned and determined pilot with a sure hand. A rescuer is lowered from the helicopter on a cable, which may be extended up to 200 meters before reaching the climber. The injured climber is then attached to the cable and both are lifted away by the helicopter and transported to the nearest medical center. First used in the 1970s on the north face of the Eiger, this





### ► FISHTAIL AIR

- Based in Kathmandu, it is the principal helicopter operator in Nepal and occasionally performs missions in India and Bhutan.
- Its fleet of five helicopters includes four Eurocopter models: two AS350 B3s, one AS350 B2 and one AS350 B.
- The company offers various helicopter services: tourist flights, mountain rescues, medical evacuation, VIP transport and expeditions, to name a few.

“THE AS350 B3 ECUREUIL CAN FLY WHERE NO OTHER HELICOPTER CAN... IT IS A VERITABLE LIFE SAVER IN HIGH-ALTITUDE RESCUE OPERATIONS.”  
**Fishtail Air**

technique has become commonplace for rescue missions in the Alps due to its steep slopes with no landing zone for helicopters. The rescue was performed using the AS350 B3 Ecureuil operated by Fishtail Air (see inset) with Captain Daniel Aufdenblatten of Air Zermatt at the controls and the Swiss Mountain Guide Richard Lenner, who was deployed as a human

sling to carry the three climbers one by one back to the base camp at an altitude of 4,000 meters. This was the first time this rescue method had been used in Nepal by the Fishtail aircraft, saving the lives of the three climbers.

With this daring feat, the AS350 B3 has broken a new record: the world's highest-altitude longline rescue. ■

Thinking without limits



## A helicopter specially designed for passenger comfort.

The EC145 combines exceptionally spacious cabin and advanced technology to create an unparalleled passenger experience. Large sliding doors, large windows, comfort of the cabin, various amenities all that in a stylish environment. With its low noise and vibration levels, corporate and private helicopter users alike can work or relax in the living space. Boasting advanced avionics, easy maintenance and cost-effectiveness per flight hour, the EC145 is an environmentally-friendly aircraft. When you think travel, think EC145.



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